

WILLIAM DICKSON
MBE, TD, BSc, FRSC

William Dickson, always known as Bill, was born in St Abb's, Berwickshire, on 23rd January, 1905, the son of a lobster fisherman, and died at Lowestoft in his eighty-eighth year on 21st October 1992. He never ceased to be proud of his grandfather, his father and the other fishermen of the village, according them as much respect as he ever did to Niels Bohr, Max Born, C T R Wilson and other great scientists. For Bill, quality of character and mind, high ideals and standards were what really mattered, not origins or worldly success.

He went to St Abb's School for some ten years, and expected that to be the end of his education. But his Dominie, Colin McCallum, had other ideas and persuaded the Director of Education to give him a place at the Berwickshire High School, Duns. McCallum's faith paid off handsomely: not only did Bill go on to Edinburgh University, but got a First in Chemistry. As important to him as the First that summer, though, was catching the biggest halibut in living memory (5½ stone, fetching £3 10s)!

Moray House and a post at Annan Academy followed in the next fourteen months, and three years later the Rector was writing to Watson's to say: "Rarely, if ever, have I had a young man who so speedily proved himself a teacher, keenly interested in the young and in his subject. He is one of the ablest men I have ever had under me . . . a student also, alive to the latest and anxious to learn."

Partly thanks to this reference, George Watson's College appointed him to the staff in 1931. He became Head of Chemistry in 1948 and Head of Science in 1958. Sixty-one years later a Watsonian wrote to Bill's widow, Zoe; "I owe him a tremendous and non-payable debt. He was not only the ideal teacher, he was a real human being who carried his supreme authority ... with effortless ease. And yet he never raised his voice. He also made us laugh as the transfer of knowledge and wisdom into our thick, insensitive heads proceeded - *apparently* without pressure of any kind He certainly altered *my* future and, maybe unwittingly, directed my life. I did so want to tell him, but he would have made some humorous quip."

The two letters sum up his genius as a teacher perfectly, and happily there are many examples of his particular style. For example, he never lost his wonder at Dalton's formulation of atomic theory (1803), which he made concrete for young boys by getting them to blow bubbles in water to illustrate atomic or molecular packing, and he was at pains to ensure boys appreciated early chemists' astounding achievements in calculating the relative weights of atoms and compounds. He gave them a figure for the average depth of the oceans and made them work out the total volume of all the oceans in cubic centimetres - approximately the same as Avogadro's Number. "What weight of carbon would be needed to give every person in the world (6000 million, say) an atom of carbon?" The answer, 0.0000000000012 grams, meant that "there will be more than enough carbon atoms in the tiniest pencil dot to give all the Chinese, Indians, etc., etc. an atom each".

His approach to the teaching of Chemistry was firmly based on making it 'fun', practical, concrete and linked with the world outside the classroom. He banned work-sheets ("what work-sheet ever put fire in a boy's belly?") and encouraged boys to make their own experiments. He showed how the French had used chemical reactions and conversions to produce usable natural gas for themselves and sulphur for export, instead of importing it, and how the Germans produced explosives through the Haber process when they could not import nitrogen compounds from Chile, enabling the Kaiser to go to war in 1914. He linked talk about metallic elements with Bible references (the gift of gold to Jesus), and the capacity of catalysts to be used over and over again with Tennyson's *Brook* - "Men may come and men may go, but I go on for ever". Catalysts were never forgotten thereafter. He got boys to collect seaweed at North Berwick and make their own iodine in the lab. He maintained close links with industry and the University; he collected mineral specimens for boys to see or handle (e.g. moon-rock, or manganese modules from the Challenger expedition); and he was well ahead of his time in using spoke/spring models to help boys understand the properties of elements and compounds.

Perhaps the most unusual and important element in Bill's philosophy as a teacher was his faith in the capacity of boys to do well if given the chance. It applied to so-called 'dunderheads' as well as misunderstood 'rogues'. It was he who conspired to make a brilliant rugby player with 'a bad reputation' a Prefect after he had kicked the winning conversion in the last minute of a Merchiston match. Both at School and in retirement he used to 'notch up' mentally the names of those who had been 'written off' at School, but had done well subsequently - achieving a First or a PhD, getting a Professorship or doing something special which he had seen in the paper. For example, there was Huntley Lorimer, son of the local hairdresser, who had 'done nothing' at School, but then got a First in Biology at St Andrews, went on to be elected a Fellow of the Royal Society and is now a Du Pont Fellow in Central Research and Development at Du Ponts in Wilmington, Delaware; or Lord Hunter of Newington, who was withdrawn from Watson's because, the then HM said, "he is wasting our time and your money", and then successively became Gold Medalist at Edinburgh, Professor and Dean of the Faculty of Medicine at Dundee, and Vice-Chancellor of Birmingham University.

Apart from his teaching, the CCF was of first importance to Bill. He was Commanding Officer from 1936-49, for which he was awarded the TD in 1952 and the MBE in the Coronation Honours the next year. But, proud as he was of these, he was prouder still of the Ashburton Team's Bronze Medal at Bisley in 1947. "No examination, no Rugger or Cricket game ever won for the School gave greater satisfaction".

While Bill had been a keen soccer player and an excellent athlete (keeping up with Eric Liddell when running for a tram for the next lecture), his real sporting passion was golf. At Baberton with friends, ex-colleagues and Watsonians he found excitement and contentment. It was one of the many things which maintained his perennial youthfulness, and there was unalloyed delight when he achieved not one, but three holes-in-one within a short space of time before and after retiring, delight enhanced by each ball being mounted on a stand of a different, uncommon metal element.

Stories of Bill abound. There was the day when the then Head interrupted a lesson to ask him what he thought of some ill-considered scheme. Seizing the moment - and the Head's piece of proffered paper - he roared: "What do I think of it? Just this, Headmaster", and he folded the paper in two, poured in some crystals from the bottle in his hand, and used it to funnel them into the weighing pan. The crystals were *Urea*. The class immediately, and the Head eventually, got the point.

His own favourite, told frequently against himself, is to be found in his own hand on the back of an envelope. "At Niels Bohr's Gifford lecture on 21st October, 1949 I found myself talking about Bohr's age with one who could only be C T R Wilson. Some time later - maybe as far on as 1952 - I was explaining to a 2B class the benefit of chemical naming like 'Copper Sulphate', whereas our surnames meant nothing. For example, 'What's yours?'; 'Wilson, Sir.' 'Well, there you are! Not so long ago I was sitting beside one of the most famous of British physicists, and his name was . . . ' 'Wilson', he interrupted. 'He's my grandfather!' Cries of derisive unbelief, but next morning he brought a written invitation from his father to come to tea at Carlops with the old man. He showed me his Nobel Citation and all, and on my suggestion had copies of his retiral portrait from Selwyn College, Cambridge done.

One still hangs in my room 45. His birthday was St Valentine's Day (1869) and the Sixth sent him an adapted Valentine every year until he died in 1959".

A Watsonian gives this charming portrait of Bill in retirement: "He loved to sit in his arm chair, puffing on one of his interminable cigarettes and letting the ash fall where it may. His conversation would touch on golf at Baberton, his garden, his children, animals he had befriended in the winter - and always Watson's. Both he and Zoe always fed the birds and he recounted with relish how he had made a fox almost hand-tame in the winter". (There is a photo of Bill feeding her).

His family - his parents and grandparents, his wife Mary (Zoe), his daughter Marjory, and his sons Robert and William - meant more to him than he usually let on. Robert's middle name was Royds after Mary's family name; her great-uncle Royds had sailed with Scott in the *Discovery*, and there was no concealing Bill's pride when Robert had the new *Discovery* put at his disposal for oceanographic research in 1992. He was similarly very much touched when, on his eightieth birthday, Robert sent him a large crab with a half-crown piece tucked in the 'flap', a reminder of his student days when his grandfather had sent him each week on the train a crab with a half-crown similarly tucked in behind the 'flap'.

He rejoiced in the paradoxical situation and the paradoxical phrase: "I didn't have to get down on my knees to look the fellow in the face"; or, on a boy's report, "You can't strike sparks out of lead"; or, on a note I had one morning - "Chemistry Department: (1) Sandy's got 'flu; (2) Edwin's got a daughter."; or his cryptic remark to Howard Orgel, "To save you the trouble of asking, the answer's Yes. See page 166". On and on they flowed, a glorious outpouring of wit and wisdom, humanity and humour, sense and sensitivity. As these examples show, there was a paradox in his remarkable blending of total honesty - a complete and utter rejection of all humbug - with a delight in the indirect allusion. Very rarely was one likely to guess the real purpose of the story which opened a conversation until one reached the dénouement which it served to illustrate, and even then the real point was artfully concealed and only intelligible to the well-tuned ear and brain.

For these and many other reasons he was undoubtedly a 'character', and a very remarkable one, sometimes with a fierce bark but never fierce at heart. Fundamentally he was a good man (not necessarily the same thing at all) - a man of honesty, a man of judgement, a man of ideals, a man of faith. And he showed this by remaining a St Abb's man to the end, unchanged by his many successes. More than his public triumphs - his MBE, his TD, his Fellowship of the Royal Society of Edinburgh (1963) and of the Royal Society of Chemistry (the first school teacher to be a Fellow), his Ashburton Bronze - he valued most of all the fact that he could still talk to the fishermen on the pier as though he was one of them. That took skill and character - above all integrity.

His scientific scholarship was well known throughout Scotland; but it was his perennially youthful curiosity and zest for new ideas which I regarded as the mark of the genuine scientist. And genuine was the word for Bill - he had no time for the tawdry and artificial; everything about him had the hall-mark of true metal - whether it was his delight in golf or his passion for the CCF, his perceptive observation of character or the responsive gleam in his eye at a joke, his sensitive understanding of a boy's real needs or his self-effacing pleasure in his pupils' triumphs.

And what a memory he had! This rightly became a legend, but a legend which always fell short of the truth, just as every memory told and retold by affectionate and admiring colleagues and pupils of 'Cappy Dick' is an insubstantial shadow compared to the real man we knew and loved. In him we saw all the varied arts of teaching displayed with consummate skill and a deeply Christian humanity. Bill was a great schoolmaster.

ROGER YOUNG