

The desired red protein was designated DsRED from the coral *Discosoma*.⁹ Unfortunately, it was larger and heavier than GFP. It consists of four amino acid chains instead of one, thus making it of less use as a fluorescent tag.¹⁰ Tsien redesigned DsRED such that the protein is now stable and fluoresces as a single amino acid chain that can easily be connected to other proteins.¹¹

From this smaller protein, Tsien's group also developed proteins with mouth-watering names like mPlum, mCherry, mStrawberry, mOrange and mCitrine, according to the colour they glowed.¹² Several other researchers and companies have also contributed new colours to this growing palette. Today, some forty-six years after Shimomura first wrote about the green fluorescent protein, there is a kaleidoscope of analogues that transmit all the colours of the rainbow.

Three of the proteins have been used recently in a spectacular experiment. Mice were genetically modified to produce varying amounts of yellow, cyan and red within the nerve cells of their brain. The result was a mouse brain that glowed with the colours of the rainbow. The researchers could follow nerve fibres from individual cells in the dense network in the brain. The experiment was termed *the brainbow*.¹³

One mystery yet remains to be solved. Why does the jellyfish *Aequorea victoria* shine? Many organisms living in the sea use light from biofluorescent proteins to confuse their enemies, to attract food or to tempt a partner. But no one yet knows which has caused *Aequorea victoria* to evolve aequorin and GFP.

References and Notes

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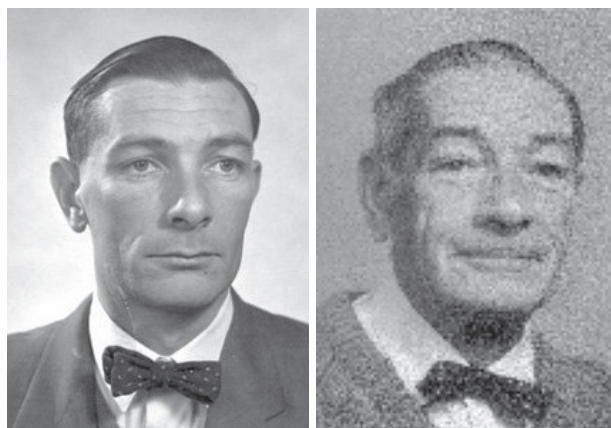
(Compiled from material freely available;
see: <http://nobelprize.org>)

Obituary

William Edward (Ted) Harvey 1925-2008

October 20 saw the passing of an icon in New Zealand Chemistry and the Institute. Ted Harvey was known nationally and internationally as the face of Chemistry in NZ from the nineteen years that he served as our Honorary General Secretary, his bowtie a hallmark. He became Assistant Secretary in 1956 and Secretary from 1957-1975. His worldwide dealings with our sister societies and their officers, and the chemistry visitors hosted by NZIC were paper-based, occasionally by telephone (e-mail and fax were not available then), and in person. Indeed, whenever he returned from an overseas trip he would tell us that he had met up again with ... – and the list of distinguished chemists would roll off his tongue. On completion of his secretarial service in August 1975 he became 2nd Vice-President and subsequently President for the 1977-78 year, a role that he fulfilled with distinction. Subsequently he was elected to Honorary Fellowship.

Ted was born in Auckland in 1925 and attended Epsom Normal School and Auckland Grammar, gaining third place nationally in his Scholarship examinations after John Ziman and Bob Tizard (formerly Professor of Physics at Bristol University, and politician, minister and



Deputy Prime-Minister, respectively). His MSc degree was with Professor Lindsay Briggs at Auckland University after which he moved to Cambridge for PhD study with Alexander (Lord) Todd. He then took a postdoctoral position with Holger Erdtman in Stockholm that lasted for two years and this was his most prolific research period generating five publications. His return to NZ was

to the Dominion Laboratory in Sydney Street where he met Helen (Barr), his wife of almost 52 years. In 1953 he accepted appointment to Victoria University of Wellington as a lecturer in chemistry under the headship of Prof. Stanley Slater and remained at the institution for the rest of his working days. He arrived when the Department was housed in the Hunter Building and was one of its inhabitants for five years before moving to the new *Easterfield Building* on Kelburn Parade when it opened in 1958. He was also Warden of the VUW hostel for men, Weir House, at that time and his term (1956-59) left lively memories.

He rose through the ranks of academia to become Reader in 1967 and Associate Professor in 1969. Ted had a first-rate pair of hands and was adept and astute at the bench but did not publish much of his work. The author recalls him being quite distressed one day having found data in a reputable journal that was wrong – it differed from his own that made markedly more sense – but the matter went no further. He had few research students but his last, John Miners, distinguished himself and is now Professor and Head of the Department of Clinical Pharmacology at Flinders University of South Australia and a 2008 Hon. FRSNZ. He taught generations of undergraduates, always taking a load commensurate with his colleagues, and he made a lasting impression on them. As Bill Jordan (Biological Sciences, VUW) said: '*Ted was always supportive and his teaching enhanced my passion for organic chemistry*'.

Ted's role in the Chemistry Department saw him take charge of technician training and be the interface for the general staff to the Administration. He ensured that the demands of the Technician Certification Authority were met and that every trainee technician spent the requisite period of time in each of the laboratories of the Department, thus gaining an ability to work in one area and provide trained back-up in another. This duty and the training syllabi involved him with Wellington Polytechnic (as it was) and he served also on its Council as the VUW representative from 1971 until the end of 1988. Additional to this, he had charge of the chemical stores, the ordering, and the provision of chemicals within the allocated budget. This was at the time when few materials came by air-freight and there was a single annual order that took from 3-6 months to come by boat. The annual order was the largest single exercise in purchasing and provided the chemical supplies needed throughout the university with discounted prices negotiated from the bulk order made. The undergraduate laboratories rarely ran out of supplies and few academic staff could complain of the services he provided, but then in those days, the store housed a good range of chemicals and Ted added some new and potentially useful materials each year.

Ted was always supportive of his colleagues and insistent that *organic chemistry* got its fair share of everything – some might suggest more! Undoubtedly, he was active in ensuring that the area received an established professorship to follow the mid-1960's appointments in inorganic (James Duncan) and physical (John Tomlinson). The position was advertised and an appointment made, with Robin Ferrier arriving in late 1970. During the early-

to-mid-1970's Ted spent more and more of his time with administrative duties such that in 1978 he accepted appointment as Acting Registrar whilst retaining many of his duties in chemistry. The position was made permanent in 1979 and he formally left the Chemistry Department to be in administration until his retirement at the end of 1989. As Registrar he excelled, being as flexible as possible – as John Prebble (Law, VUW) said '*he even allowed me to swap a half-secretary for VUW's first laser printer*'. This, with its associated cables, allowed Law at VUW to become the first non-science department in an Australasian university to have a network!

As an individual, Ted formulated his views from the available information and was forceful with them. Equally, if he did not feel that your opinion or needs were valid the now legion '*you haven't a snowball's chance in hell*' would be proffered. His demeanour in the undergraduate laboratory was somewhat severe and likely would not be tolerated in today's climate. Yet every student knew precisely where they stood and what they needed to do; if they did not have the knowledge or skill to achieve a task he would painstakingly take them through the exercise. Ted was a master at the bench and few left his laboratory courses without a marked increase in ability. He returned as demonstrator to 1st-year after retirement where he was much admired and respected.

On a personal basis, Ted was the first academic I was introduced to on my arrival at VUW in September 1968. I was told that Ted would look after me and he did, likely in more ways than he ever imagined. His dedication to first-rate bench work, his assertion that professional matters rated highly, and his willingness to assist were immeasurable. That I have spent so much of my time on Institute matters has its basis in the professionalism that he and Denis Hogan inspired. He maintained his contacts with the Institute throughout his retirement usually attending Branch meetings, always cheerful and always helpful.

Away from work, his earlier days saw him active in tennis and hockey. As the years passed he took to hockey refereeing, then, later in the Saturday afternoon he would provide match reports on Radio 2ZB. In later times he continued with tennis, taking up golf only in retirement; he was an adept bridge player. He served many terms on the VUW Staff Club Committee, was its barman and cracked many a keg in the Rankine Brown facility.

Ted Harvey became a legend in his own lifetime, had a candle with more ends than could be counted and burnt them all. But above all he was a dedicated and loyal servant to his profession. He is survived by his chemist wife Helen, and son Matthew. We will miss him.

Brian Halton

(Sources: Author, Matthew Harvey, David Weatherburn and VUW Calendars 1950-90; photographs courtesy of the J.C. Beaglehole Room Archive Victoria University (left), and the Harvey family (right); used with permission)