

## *Winton Arthur (Wog) Hawksworth, 1935-2012*

**W**INTON “Wog” Hawksworth died on 26 March 2012. His death brought to an end an illustrious career and an era. He was an outstanding academic and mentor, also playing an influential role in yachting administration and the control of drug abuse in sport. He touched the lives of many thousands of people, especially students, all of whom will remember him for his kindness and concern for others.

Wog was born in Port Shepstone. Like many small boys on the coast, he developed a passion for fishing, one which he shared with Sam Ramsamy, who later became Chairman of the National Olympic Committee of South Africa (Nocsa); this connection was to lead to a turning point later in Wog’s life, when he became involved in the control of drug abuse in sport. From Sezela government school to Glenwood High School was a big step, but Wog showed his mettle by matriculating as the school dux in 1952. A one-year spell at African Explosives and Chemical Industries (AECI) in Umbogintwini cemented his interest in chemistry, prompting him to register for a science degree at the University of Natal in Pietermaritzburg in 1954, thus beginning his long association with the Department of Chemistry in Pietermaritzburg. He graduated with an Honours degree in chemistry in 1957, an MSc in 1958 and a PhD in 1966, finally retiring from the university as Professor of Physical Chemistry in 1995, after 37 years of service.

Wog was a physical chemist who specialised in teaching and research in the fields of electrochemistry and thermodynamics, interests which de-



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veloped from his time as a research student of Professor C.J.G. Raw. His close friend in the department, Dr Edwy Kyle, represented the other major fields in physical chemistry at the time, *viz* reaction kinetics and spectroscopy. There was a symbiotic relationship that led to the modernisation of the physical chemistry teaching programme in Pietermaritzburg. By the end of the 1960s, the programme was regarded as the most relevant and best taught in the country.

In his research Wog focused on the phenomenon of thermal diffusion in liquid mixtures, also known as the Soret effect. A visible example (from the gas phase) is when the hot rod of an electric heater is surrounded by tobacco smoke: as the small particles of air nearest the hot rod are heated and acquire increased kinetic energy, they literally push the slower moving particles of tobacco smoke away from the rod. The force that pushes the smoke particles away is

known as a thermophoretic force. The point is that the force is not the same for all particles: in solution this means that not all particles diffuse across a temperature gradient at the same rate. These differences are expressed in terms of the Soret coefficient for a particular species. In principle, particles with different Soret coefficients can be separated by application of a temperature gradient. A major application is in oil separation technology, for example.

Wog and his students measured Soret coefficients of a host of different species in solution, so contributing to a world-wide database of Soret coefficients. It has to be said that this was no easy task: incredibly precise temperature control is required in the laboratory, and there were no commercial instruments available at that time to do the measurements – all the instruments in Pietermaritzburg were designed and built by Wog. He quickly established a reputation as a superb experimental chemist, earning him British Council and CSIR grants to collaborate with the world leader in the field, Professor H.J.V. Tyrell of Chelsea College, University of London. Wog enjoyed no less than three sabbatical leaves at Chelsea as a visiting lecturer. The quality of his work is reflected by publications in prestigious journals such as the *Journal of Chemical Physics* and *Electrochimica Acta*.

Wog's interest in chemistry took a fascinating turn when he retired from the University in 1995. He was invited by Sam Ramsamy to head up the Nocsa Drugs and Anti-Doping Commission. Thus began his long association with the problem of the misuse of performance-enhancing drugs in sport that only ended a few months before his death. He has to be the envy of all retired academics! During that time

he earned a reputation as an expert in the field. He understood exactly the limitations of techniques such as mass spectroscopy and chromatography that are used for the analysis of a drug sample – not surprisingly, given his background in physical chemistry. Furthermore he (like others) began to question the true meaning of a measured concentration for a drug molecule that occurs naturally anyway. Is it the result of a natural variation, or is it due to misuse of a drug? A good example of this so-called “molecular riddle” is that of the Swedish cross-country skier Eero Mantyranta, who won three gold medals at the Winter Olympics. Tests showed that he had 15% more red blood cells than normal, but he didn't have any signs of blood doping!

Wog was invited to speak at numerous international conferences on drugs in sport, attending his last conference (the US Anti-doping Agency conference on Drugs in Sport in London) only five months before his death. He was also invited to serve on the Drug Commission of the International Swimming Federation, the only non-medical scientist on the committee. However, in his mind, discussions in commissions and at conferences were all very well, but more important was to educate the youth about the dangers of sports drug abuse. To this end, he gave lectures to children at schools all over the country, no-holds-barred addresses that illustrated the damaging effect of drug abuse on the physiologies of young men and women.

The notion of community service now looms large as one of the promotion criteria at South African universities. Community service for Wog took many forms, but he is best known for his contribution to South African sail-

ing. Yachting was a passion for him, one which began with sailing a Mirror dinghy at Midmar Dam with his wife Pauline. He served on the committee of Henley Midmar Yacht Club (HMYC) for over a decade, nine years as commodore of the club, and later went on to become president of both the Natal Yachting Association (SAS/KZN) and the South African Yacht Racing association (Sayra/SAS).

But his contribution to sailing extended far beyond the administration of the sport. He went on to become an international race officer of high standing, officiating at countless provincial and national regattas, as well as at prestigious regattas such as the Lipton Cup and world championships. On his retirement he received a certificate from the International Sailing Federation “in recognition and appreciation of his contribution to the sport of sailing during his term as an international race officer”.

His most significant contribution to South African sailing was probably through his involvement with Nocsa: together with Sam Ramsamy and President Nelson Mandela he fought successfully for the inclusion of an increased number of South African sporting codes (including sailing) at the Barcelona Olympics. To quote the president of the International Olympic committee, Juan Antonio Samaranch, Professor Hawksworth “deserves recognition for a remarkable contribution, as a volunteer, to the development of sport and Olympism, and the promotion of friendship and solidarity among peoples”.

The last phrase fits well with how Wog treated people. His students loved him because he saw them as young men and women with fears and aspirations, not simply as students who needed to be taught chemistry. He was the most encouraging of lecturers, who often acted as a life coach. Some of his phrases are still used in the department today, a good example being his oft-repeated reference to the “cold frontiers of science”. He understood better than most the demands of original research, and that you, the student, felt “cold out there” when an experiment was not working or the results made no sense. He was recognised in the sailing fraternity as scrupulously fair, in particular with regard to the management of regattas; to quote Vernon Goss, a life president of the Point Yacht Club and trustee of SAS Sailing KZN: “Wog was South Africa’s greatest race officer ... an exceptional gentleman in all respects, and his invaluable contribution to South African Sailing can never be equalled.” Above all, Wog was a family man, a devoted husband to Pauline, and a father who gave his two sons, Douglas and Mark, unconditional love and support. It is hard to imagine another man who got it so right in all aspects of his life. His philosophy was that life should be played by the rules. “Keep to the rules” he would advise, or you will “end up in the shit ... and it is very difficult to get out of the shit!”

Wog lived his life to the hilt right up to the end – it is a life that we can celebrate, as much as we mourn its end.

JOHN FIELD