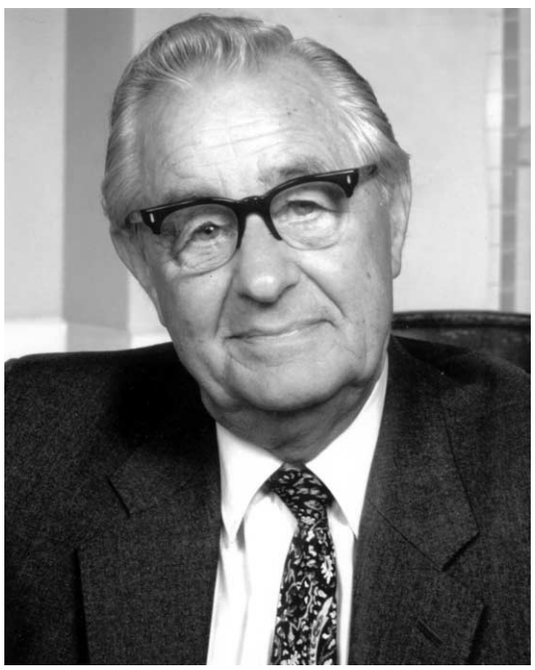
Editorial: Special Issue in commemoration of Lord George Porter FRSC FRS OM (6th December 1920–31st August 2002)

George Porter was one of the most innovative and accomplished scientists of the last century. Readers will be aware of the fundamental contribution he made to photobiology and photochemistry resulting from his development of the technique of flash photolysis for which he was awarded the Nobel Prize for Chemistry in 1967, jointly with Norrish and Eigen. However, many readers may not be aware of the many important contributions he has made to the public understanding of science, a cause he made his own. He was a fluent, articulate speaker who made many converts, including myself, to his belief that the search for knowledge is the highest aim of mankind. He used television to bring science into the home by, for example, persuading the BBC to broadcast the Royal Institution's Christmas Lectures annually, by being the main force behind the BBC's Young Scientists of the Year Awards and by his Richard Dimbleby Lecture entitled '*Knowledge Itself is Power*', in which he argued the case for strong financial support of basic science to enable young scientists to pursue science for its own sake. As he put it on that occasion "It is doubtful whether there is such a thing as useless knowledge. Ignorance, the only alternative to knowledge, can only be no more than temporary bliss."

In addition to being a gifted communicator and an inspiring teacher George Porter was a family man who was lovingly supported in all that he did by his wife Stella for their 53 years of married life together. Stella, alongside George, gave encouragement and affection to every person who joined his research group. The Porter scientific family, his students, post-doctoral researchers, colleagues and collaborators, have dedicated their articles in this Special Issue of *Photochemical & Photobiological Sciences* to honour a truly great man and in memory of a true friend. In 1986, members of his academic family instigated the Porter Medal in his honour, to be awarded biannually to the candidate who, in the opinion of the Presidents of the Inter-American Photochemistry Society, the Asian Photochemistry Association and the European Photochemistry Association, has made the most prestigious contribution to the field of Photochemistry. There is no doubt that this has become the most coveted award there is for photochemical research. The medal has been awarded to an impressive array of superbly innovative international photochemists and it is particularly pleasing to note that all of the last six Porter Medal recipients, N. J. Turro, USA (1994), J. C. Scaiano, Canada (1995), N. Mataga, Japan (1996), F. C. de Schryver, Belgium (1998), V. Balzani, Italy (2000), and J. Michl, USA (2002), have made contributions dedicated to Lord Porter in this Special Issue.

George Porter's research career started in Cambridge and the first two articles in this issue describe the fascinating photochemistry of the early 1950s. Porter left Cambridge in 1954 and, after a year in industry, he moved to Sheffield University and continued his outstanding research work for 11 years. He left Sheffield in 1966 to devote more of his time to fostering the public discussion of science by becoming director of the Royal Institution (RI) in London, where his consummate communication skills enabled him to popularise science, especially amongst children, and thus to follow successfully in the footsteps of other great chemists who preceded him at the RI, including Davy, Faraday, Dewar and Bragg. His research work during 20 years at the RI was of the highest international standard. He left the RI to become President of the Royal Society of London in 1985 and, in 1990, became Chairman of the Centre for Photomolecular Sciences at Imperial College, London. The articles in this special issue include contributions from members of Professor George Porter's research groups, who worked with him and were inspired by him in each of these various laboratories.



It is difficult to find appropriate words to pay adequate tribute to such a scientific genius as George Porter and, therefore, I have chosen to conclude this editorial with quotations from the Romanes Lecture presented to Oxford University in 1978 by the then Sir George Porter entitled '*Science and the Human Purpose*', which represents his view of science, a view which continues to inspire so many of us who were privileged to have worked with him. I would like to thank Lord Porter's sons, Professor John Porter and Dr Andrew Porter, who read extracts from this and from some of his other lectures at the Service of Thanksgiving for the Life and Work of the Right Honourable The Lord Porter of Luddenham OM FRS in St Margaret's Hall, Westminster Abbey, on Tuesday 21st January 2003, thus demonstrating the appropriateness of such quotations.

Extracts from the 1978 Romanes Lecture by George Porter

'*Science and the Human Purpose*'

". . . When Michael Faraday was asked the question, so tiresome to a scientist, "What is the use of your work?", he could reply in the words of Benjamin Franklin, "Madam, what use is a newborn baby?" Or, when asked the same question by the Prime Minister, Robert Peel, about his magnetic induction, he could reply, "I know not, Sir, but I'll wager one day you'll tax it." And in the golden age of Victorian progress, the point was taken and later proved to be correct.

It is not so easy to satisfy the questioner today. The baby is grown up into a body of great achievement and power. It has almost won its battle against disease and the miseries of hard labour; Michael Faraday and James Watt released more men from slavery than did Abraham Lincoln. "Yes," says the

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layman, the concerned citizen, to the man of science, "I accept this, and I really am grateful, but now I have had enough; I need time to adjust to what I've got already. So will you please find a cure for cancer, solve the energy problem and then stop."

. . . The discoveries of Copernicus, Darwin and the molecular biologists have irrevocably changed our beliefs about our place in the world, but the new understanding has been negative in the sense of invalidating old conceptions and religious views without providing a new, positive philosophy and purpose.

If, then, we have changed our traditional faiths through increased knowledge of ourselves and of our universe, is it not possible that our way to a new faith, a new purpose for life, is through further knowledge and understanding of nature?

This is the ultimate purpose of science.

In the past, the hope of individual immortality removed much of the concern about the purpose of life on earth . . . one day all would be revealed in a happier place. It was taken for granted that the purpose of life would be one of those revelations. Now, our hopes for immortality have to rest in our children or through the works we leave behind us . . . our genes or our genius. And our hope for an understanding of the human purpose, through a continued search, must also rest mainly on our hopes for the species as a whole rather than ourselves. But, with this hope, life becomes more meaningful and death loses some of its sting.

It is, of course, quite possible that we can never understand, never discover a purpose, but we shall not succeed if we do not try. Time and time again in science some artificial barrier has been proposed beyond which science could not pass, and many of those barriers are now behind us. The synthesis of organic substances, for example, was said to require a vital force until Wöhler, in 1828, destroyed the idea in the only convincing way, by synthesising one *without* a vital force. There is absolutely no evidence that the great intellectual power with which man is endowed has any limitations and, until evidence to the contrary is produced, we shall be wise not to give up the search.

. . . If our problems seem insuperable, and the route interminably long, we should remind ourselves that modern science started only 400 years ago and has already transformed our lives and understanding. In this endeavour, it is earlier than we think. What may we not achieve in the four billion years which remain before the earth becomes uninhabitable?

What is it that we want man to achieve? Is it merely the greatest happiness of the greatest number? How many people do we want on earth anyway and what sort of people should they be? Perhaps Linus Pauling's suggestion that we should strive only to reduce *unhappiness* is more realistic. Until we have more understanding, all our ambitions for the world are, at best, short term and, at worst, may be quite wrongly conceived. Our ethics and morals must ultimately be decided in the light of this understanding. It is my thesis that the *search* for understanding provides in itself a human purpose and source of happiness.

Others have expressed the view more eloquently.

Horace wrote "Knowledge of that which underlines everything gives true happiness, unshakeable peace of mind, by eliminating the wonder at our personal fate."

Vanevar Bush has written "Science has a simple faith which transcends utility. Nearly all men of science, all men of learning for that matter, and all men of simple ways too, have it in some form and in some degree. It is the faith that it is the privilege of man to learn, to understand and that this is his mission. Why does the shepherd at night ponder the stars? Not so that he can better tend his sheep. Knowledge for the sake of understanding, not merely to prevail, that is the essence of our being. None can define its limits or set its ultimate boundaries."

And Tolstoy wrote "The highest wisdom has but one science, the science of the whole, the science explaining the Creation and man's place in it."

There is, then, one great purpose for man, and for us today, and that is to try to *discover* man's purpose by every means in our power. That is the ultimate odyssey of science, and not only of science but of every branch of learning which can improve our understanding . . ."

Porter's life in brief

Professor Lord Porter of Luddenham FRSC FRS OM was born in Stainforth, Yorkshire, on the 6th of December 1920. He died on August 21st 2002, aged 81.

George Porter attended Thorne Grammar School and obtained his BSc from Leeds University in 1941. He served during the war in the Royal Navy. In 1945 he started his photochemical research in Cambridge for his Ph.D. under the supervision of Professor R. G. W. Norrish.

George Porter was appointed Demonstrator in Physical Chemistry at Cambridge University from 1949–52, Assistant Director of Research in Physical Chemistry from 1952–54, made a Fellow of Emmanuel College, Cambridge, from 1952–54, and an Honorary Fellow in 1967. He was Assistant Director of Research at the British Rayon Association from 1954–55 and was appointed Professor of Physical Chemistry at Sheffield University from 1955–63 and Firth Professor of Chemistry from 1963–66. He was made a Fellow of the Royal Society in 1960, became Resident Professor and Director of the Royal Institution of Great Britain from 1966–85 and Emeritus Professor in 1988. George Porter was awarded the Nobel Prize for Chemistry (jointly with R. G. W. Norrish and Manfred Eigen) in 1967. He was President of the Chemical Society from 1970–72 and was knighted in 1972. George was President of the National Association for Gifted Children from 1975–80, received the Kalinga Prize awarded by UNESCO in 1977 and was made President of the Royal Society from 1985–90, President of the British Association for the Advancement of Science from 1985–86, Chancellor of Leicester University from 1986–95, a Professor at Imperial College, London, in 1987 and Chairman of the Centre for Photomolecular Sciences in 1990. Sir George received the Order of Merit (OM) in 1989 and was created Baron Porter of Luddenham in 1990. He was appointed Gresham Professor of Astronomy, Gresham College, from 1990–94, President of the National Energy Foundation from 1990–2000 and Master of the Salters' Company from 1993–94.

Lord Porter was an ordinary member of the European Photochemistry Association from its inception. He was awarded honorary degrees at over 50 universities worldwide.

The Royal Society of Chemistry awarded him the Corday-Morgan Medal in 1955, the Tilden Medal in 1958, the Liverside Medal in 1970, the Faraday Medal in 1980 and the Longstaff Medal in 1981. The Royal Society awarded him the Davey Medal in 1971, the Rumford Medal in 1978, the Michael Faraday Medal in 1991 and the Copley Medal in 1992.

George Porter married Stella Brooke in 1949. They had two sons—John and Andrew.

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