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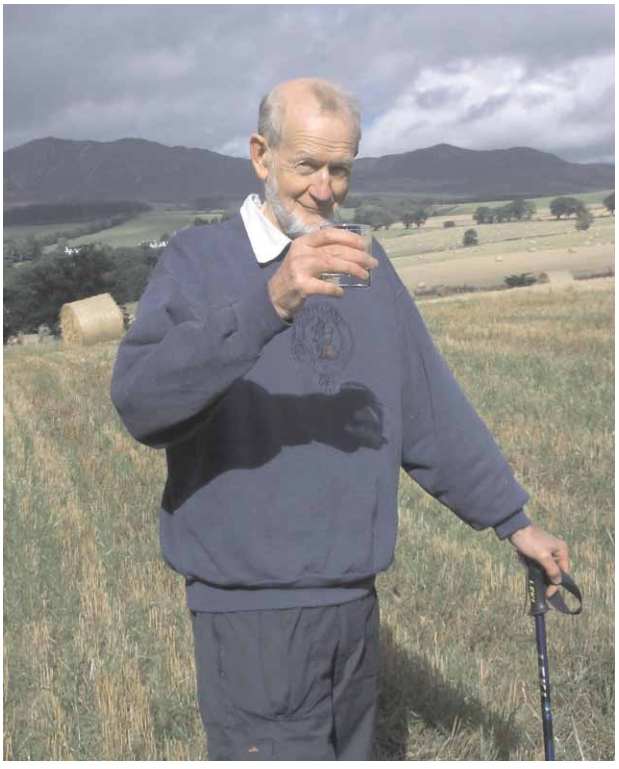
Edward Cameron Kirby – *curriculum vitae*

Born in 1934, in Stamford, England, as the only child of Anglo-Scottish-Irish parents, Edward Kirby was brought up with a primarily Scottish sense of identity. He showed interest in chemistry at a very early age. Later this interest remained dormant, but was revived upon his return to Scotland where he enrolled in the University of Saint Andrews and got his BSc & PhD.

Edward is a Fellow of the Royal Society of Chemistry. He is retired but is doing unpaid work as a Member of the Council of, and Consultant to, the Resource Use Institute, Editor of *Nutrition and Health*, and Researcher in Chemical Graph Theory. His former positions include



General Manager of the Resource Use Institute (*ca* 1977–1988), Free-lance Consultant on technological innovations and industrial research management (1969–1982), New Products Chemist, British Oxygen (1965–1969), Research Chemist, Laporte Industries Ltd. (1962–1965), and Albright & Wilson sponsored Post Doc., University of Cambridge (1961–1962).

Ed's doctorate was on azulenes, in particular their reaction with electrophilic reagents, he synthesized a number of new dye-salts, and reported the first simple azulenium salt stable at room temperature. His post-doctoral work involved the synthesis of aromatic organophosphorus compounds in F. G. Mann's team at Cambridge. While employed in industry, he worked mainly on the chemistry of high purity hydrogen peroxide; the manufacture of various organic peroxides and the epoxidation of fatty-acids as stabilizers for plastics. Later he worked on tall-oil fatty acids and pitch, which are by-products of the paper industry, including work on isolating beta-sitosterol from pitch, which was thought would help lower cholesterol – this was in the sixties.

Edward left industry to work as a free-lance consultant shortly before Robert Robertson, based in Pitlochry, founded the Resource Use Institute (RUI) in 1969, and after four years alone went into partnership with him, and joined the Institute. RUI, a limited liability company with no shareholders (technically called 'limited by guarantee'), has always had a strong ethical base, and operates on both a problem-solving-consultancy and a proactive-study basis in an attempt to modernize resource based industries or create new ones based on a wise use of resources. (The term 'resource' is interpreted very widely.) Its funding comes from a mixture of consultancy and long-term research contracts. One of RUI objectives is to eventually become part of the University of the Highlands and Islands, and very gradually, though with endless bureaucratic delays, this is coming about. The group has had a wide area of expertise, since besides Edward as a mainstream chemist, it had Robert Robertson as mineralogist, and such people as Robert Watson-Watt (who developed RADAR), F. N. Woodward (Director of Inveresk International), M. Slesser (chemical engineer and systems analyst) and about twenty other active members with varying qualifications, including the tenth Duke of Atholl (he allowed the use of rather a nice office – Blair Castle!) who gave useful advice on business and financial matters (as he was also director of the Westminster Press). Whenever RUI encountered problems outside anyone's sphere of competence, it would outsource the work as necessary. Altogether, Edward was involved in something like fifty projects to varying degrees, and what he enjoyed was their great variety. To take a few examples at random – appraisal of Nigerian Kaolins (RUI published a new method for rapid measurement of the surface area); minerals of the Gulf States; synthesis of zeolites in Italy; agricultural and urban waste to crude-oil conversion (this was before the North

Sea oil was discovered!); use of hard cohune nuts in Belize, and of alternative gums for chewing available in the Amazon basin; analysis and alternative uses of Scottish raspberries, methods for cleaning up oil spills; the design of a domestic dehumidifier for damp Scottish houses, and the possible use of Israeli technology for 'solar pond' heat collectors in Scotland. Ed's longer term and more abstract projects include such things as creating a model of a country's economy where all transactions are in physical terms, *i.e.,* energy, not money (largely funded by UNESCO), which much better reflects the carrying capacity of a country on a sustainable basis. Socioeconomic proposals for a system of basic income for all citizens and taxation only on energy, at its primary point of entry into the economy, have been investigated. Within the same abstract category is the mathematical chemistry project which Dr. Kirby set up in 1982, but as it is difficult to attract funding, this has really been something of an indulgence by other members toward him and his interests! There was earlier some unfunded practical work on essential oils that Edward continued throughout the seventies, at first publishing as a private individual but later under the RUI affiliation.

The output of Edward's research includes some sixty articles and papers, and a couple of patents. His other technical interests are as follows: nutrition, and the question of what is the optimum diet for humans, and accidental hypothermia. Scottish hills regularly claim casualties among people who climb them but underestimate the unpredictability and the occasional ferocity of Scottish weather. Ed has published an attempt to model and map all the causes contributing to such deaths. The onset of hypothermia in such conditions has an echo in mathematical catastrophe theory. Edward's other interests and recreations range from hiking and camping, occasional sailing or canoeing, music, the relationships between science, religion and psychology to general reading, wine tasting and talking with friends.

Ante Graovac