

Obituary

Keith G. Cox 1933–1998

Keith Cox was one of the most influential geologists of his generation because of the range of interests and expertise which he combined with a powerful intellect and a rare talent for clear explanation and argument.

He loved to practise and to preach the traditional skills of the hard-rock geologist such as fieldwork and mapping, mineralogy and crystallography, petrography and experimental petrology. He was formidably acute and knowledgeable in all of these but equally appreciative of the most recent advances in geochemistry and geophysics, once they had passed the severe test of his own critique of their validity and relevance.

Evacuation to Canada during the Second World War, schooling at King Edward VI, Birmingham and later at Leeds Grammar School, and a National Service commission in the Royal Engineers (much of the time served in occupied Berlin) must have suited and fostered the young Cox's natural intellectual rigour, practical solution-solving instincts and taste for travel. In 1952 he went up to Queen's College, Oxford, as a Hastings Scholar, taking Science Mods and, despite losing an eye in an accident on a field excursion, a First in Geology in 1956.

While Cox was at Oxford, L.R. Wager and his colleagues were establishing the prominence of the Oxford Department of Geology and Mineralogy (now Earth Sciences) with their study of layered intrusions, the rock structures caused by influxes of molten rock through the strata. Wager was world famous for his work in this area, and stressed the importance of crystal fractionation mechanisms in the formation of layered intrusions, especially that of crystal settling — that is, the ways that crystals separate according to their relative densities to form layers of igneous rock with different mineral compositions. The seeds of Cox's research career were sown at that time, as evidenced by his subsequent concentration on the origin and evolution of basaltic magmas and his unswerving stout

defence of crystal settling as one of the most important processes explaining their diversity.

Between 1956 and 1960 Cox was again at Leeds, this time in the Research Institute of African Geology, headed by W.Q. Kennedy, where he was first Oppenheimer Scholar and, after completing his PhD, Oppenheimer Fellow. Working in Rhodesia (now Zimbabwe), Cox gained much closer field acquaintance with basaltic rocks in the Karoo and began also to realise the tectonic and geomorphological consequences of large scale basaltic magmatism.

In 1962 he was appointed University Lecturer in the Grant Institute of Geology at Edinburgh where, during the next 10 years, he was in close



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contact with the newly established high pressure experimental petrology laboratory directed by M.J. O'Hara. Rarely, if ever, venturing into the laboratory to carry out a run himself, Cox preferred to style himself a 'theoretician', by which he meant, among other things, interpreter of others' complex masses of experimental data, particularly their use in constructing phase diagrams.

He became one of the world's leading authorities in the interpretation of these graphical devices and a godsend to students (and to many more senior colleagues) most of whom initially despaired of ever understanding them. When asked for guidance through some especially baffling diagram or line of technical argument, he was invariably able to say "Well, what he/she really means is". Meanwhile he was despatching research students to Aden, Mauritius, India and Scotland, all in pursuit of the grail of basalt evolution.

Oxford was fortunate enough to lure Cox as University Lecturer in 1972. Jesus College elected him Senior Research Fellow, the university eventually made him Reader in Petrology, and the honours and responsibilities poured in, the most notable being his Fellowship of the Royal Society in 1988, enabling him to emulate his father, Sir Ernest Gordon Cox FRS.

The significance of the patient, multi-disciplinary research on basalts was now recognized world-wide and the great floods of this, the Earth's most abundant volcanic rock, preserved from different epochs in places on the continents as far apart as Siberia, the Deccan in India, the Karoo in southern Africa and the Paraná Basin in South America, and also forming virtually all of the ocean floor, were being better understood as a result of Cox's attention.

He widened the search in an elegantly logical way so as to include studies of kimberlites, the blue-tinged igneous diamond-yielding rocks which carry within them samples of the Earth's mantle, in order to provide evidence on the source region of basalts; work on the possible geomorphological effects, such as crustal doming and its effect on drainage patterns, resulting from the ascent of mantle plumes — rising masses of mantle in columns rather like the rising 'blobs' in lava lamps; and investigation into what evidence the basaltic dykes on the Falkland Islands might

reveal to explain the dispersion of plate fragments after continental break-up.

Cox was a warm, friendly man, respected by all and held in some awe and not only by students, and yet helpful in any way to anyone. His humour was delightfully spiced with light irony and he liked nothing better than to prick pompous balloons. He was widely read, a gifted musician, playing the piano, clarinet and guitar, and as something of a bon viveur enjoyed good food and wine and defiantly puffed his pipe at tea-time.

He was also an accomplished landscape water-colourist and many undergraduates will remember how, on their first instruction in the techniques of geological mapping in the field in Skye, the chief instructor sat apart with his palette while the graduate students got on with showing how to measure dips and strikes.

He loved his days in Leeds, Edinburgh and Oxford in which last he delighted particularly in his office of Garden Master of Jesus College, a post he had hoped he might continue to hold after his retirement which was due in another month.

Keith Cox, his wife Gilly and their children were all wonderful hosts and an evening at the Cox household is a memory treasured by hundreds of friends and students down the years. Sailing a small boat was one of their greatest pleasures and it is tragic that Gilly, and all of us, should have lost him while they were doing one of the things they most liked to do in one of the places, Mull in the Hebrides, where they most liked to be.

DAVID BELL

Keith Gordon Cox, geologist: born Birmingham 25 April 1933; Lecturer, Grant Institute of Geology, Edinburgh University 1962-72; University Lecturer, Department of Geology and Mineralogy, (later Earth Sciences), Oxford University 1973-90; Reader in Petrology 1990-98; Senior Research Fellow, Jesus College, Oxford 1973-98; FRS 1988; Vice-President, Geological Society 1988-91; married 1960 Gilly Palmer (two sons, one daughter); missing, believed drowned, Mull, Strathclyde 27 August 1998.

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