



## **Ken Ashton, 1935-1995**

Ken Ashton was born at Hyde, in England, on 1935 November 4th. His health was poor in his childhood, with cleft palate and defective vision. At primary school, a teacher beat him for not telling the time from a clock - which he could not see! A few years later his sight was found to be defective, and he began using spectacles.

After graduating BSc from the University of Manchester, Ken spent a post-graduate year at the University of Münster in Germany. He then became a Junior Lecturer in Mathematics at the University of Leeds. Professor Stan Wainer (at Leeds), now one of the leading recursion theorists in Great Britain, recalls that Ken was his first and most important instructor in mathematical logic. Ken became a skilled rock-climber and caver in Great Britain.

Ken came to the University of Auckland in 1967 as a Lecturer (later Senior Lecturer) in the Department of Mathematics. His lectures (especially those on logic) inspired many students to advance in mathematics. He did much work on organizing Stage 1 courses; and he played a major part in founding the Stage 2 course on Principles of Mathematics. His cheerful presence was a feature of many of the annual New Zealand Mathematics Colloquia [1]. His research interests were mainly in logic, artificial intelligence, applications of catastrophe theory to vegetation zoning, mapping, and education [2]; but he published only a few research papers [3].

Ken became prominent in rock-climbing and caving in New Zealand, and he edited the Newsletter of the Auckland section of the Alpine Club of New Zealand. He did some research on cave flora and fauna (especially at Waitomo Caves), and he published several papers on speleology [4]. He married Annette in Auckland, and in 1992 he conducted their two sons over some of the more challenging rock climbs in New Zealand.

Ken had intense interest in literature, and he inspired a taste for poetry in some of his friends. He spoke German and French fluently, and had some command of a few other languages. He played a very active part in the musical life of Auckland, he sang in the University of Auckland Choir, and he attended several of the Waikato Summer Schools in Music. In the late 1970s he studied early music with Steve Rosenberg, as a result of which he became devoted to recorder playing, and he became Secretary of the Early Music Society. He and Annette attended many musical performances, he played piano and cello, and he played the organ at the Anglican Church in Northcote.

In May 1994 his piano playing deteriorated, and he realized that he was not seeing the keys at the left end of the keyboard. Four days later, he underwent drastic surgery at Auckland Hospital, for a malignant tumour in his right visual cortex. A few months later, he underwent a rigorous course of radiation therapy. In January 1995 he was looking forward to resuming lecturing - but he underwent more drastic surgery in March 1995. He and Annette visited Tasmania in June 1995, but he continued on sick leave.

Ken then decided to take early retirement, and a retirement ceremony for him was held in the Department of Mathematics on July 28 1995 .

Several colleagues gave brief lectures on mathematical topics relevant to Ken, and many other people gave spoken tributes to him. He was delighted with his farewell gift from the Department, of a portable CD player.

Ken cheerfully celebrated his 60th birthday at home on November 4th 1995 , and spoke of his hope that he might celebrate Christmas. But a few days later he entered an hospice, where he died on November 18th.

For the funeral service at the Anglican Church in Northcote, additional chairs had to be brought in. Several friends, from his very wide range of interests, spoke in tribute to his memory. His cello teacher said not a word - rather, she performed the Sarabande from Bach's Suite No.5 for unaccompanied cello.

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[1] Abstracts of lectures by Ken Ashton at the New Zealand Mathematics Colloquia:

"A model for the semantics of natural languages",

NZ Math. Mag. 5 (1968), 82.

"Algebraic structures in linguistic theory", Math. Chronicle 1 (1969), 45.

"Lattices and linguistic theory", Math. Chronicle 2 (1972), 103.

"Stratified structures", Math. Chronicle 4 (1975), 45.

"The Dedekind cut revisited", Math. Chronicle 4 (1975), 45.

"Algebra-like structures and biological structures", Math. Chronicle 5 (1976), 79.

"Forest community boundaries - an application of catastrophe theory", Math. Chronicle 6 (1977), 161.

"Ordination and classification within a complex structure", Math. Chronicle 8 (1979), 165.

"Constructs and structure", Math. Chronicle 9 (1980), 169.

"Pattern matching: a general principle and its logical consequences", Math. Chronicle 19 (1990), 116.

"Pattern matching in mathematics education", Math. Chronicle 19 (1990), 117.

"Patterns and logic", Math. Chronicle 20 (1991), 166.

[2] Report Series of the Department of Mathematics at the University of Auckland:

"Nabla-structures", No. 8, 21 pages, June 1972.

"Nabla-structures, abstract algebras and structural analysis", No. 13, 9 pages, July 1972.

"Isomorphism theorems, composition series, direct and subdirect products of nabla-structures", No. 16, 17 pages, August 1972.

"Topological nabla-structures, applications in model theory, classification theory and elsewhere", No. 32, 19 pages, November 1972.

"Pattern matching, conceptualisation, semantics and logic", No. 306, 14 pages, September 1994.

[3] "Katasutorofii Yobanachi X, Ichijiha wa Honto ni Ugoku" ("Topics in Catastrophe theory X. Primary wave movement", translated into Japanese by H. Noguchi), Suri Kagaku (Mathematical Sciences) No.185, November 1978.

"The analyses of flow data from karst drainage systems", Transactions of the Cave Research Group of Great Britain 7 (1966), 161-203.

[4] "Limestone speleology", N.Z. Speleological Bulletin 4 (1968), 103-109.

"Artificial flood waves in caves", N.Z. Speleological Bulletin 4 (1968), 111-114.

"The classification and typology of stratified structures", Proceedings of the 6th International Congress of Speleology (1973), 199-209.

"Classification and typological theory of karstic structures", Proceedings of the 6th International Congress of Speleology (1973), 13-18.

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