

A tribute to John Keith Elers Douglas



John Keith Elers Douglas

John Keith Elers Douglas recently retired from active participation in the activities of the South African Institute of Mining and Metallurgy after over forty years of diligent and valuable service to the Institute. This account of his contributions to the mineral industry and associated organizations is presented as a tribute to all his hard work and dedication.

Early Years

Keith was born in the shadow of the headgear at the great ERPM mine in Boksburg on 3rd April, 1918. Later his father was a mining commissioner in the Pilgrims Rest-Barberton district, and it is therefore not surprising that the young Keith soon developed an interest in mining. As a result of visits with his father to the many small mines of the eastern Transvaal, he grew to love the scenic beauty of the area, and one of his great interests is still to visit the game reserves and to go on hiking trails in this lovely part of South Africa.

After he matriculated from the Christian Brothers College, Pretoria, in 1935, he, not surprisingly, opted for mining as a career, and in 1939 he graduated with a degree in mining and metallurgy from the University of the Witwatersrand. In that year he was awarded the Chamber of Mines' gold medal and scholarship for post-graduate study but, before taking up his scholarship, he joined the metallurgical department of Rand Mines to acquire practical experience. On Crown Mines he had

his first experience of shiftwork as an operator on the reduction works—an experience that helped to develop a sympathy and understanding for the kind of people he was destined to be associated with for most of his working life.

World War II interrupted this training, and he was released to join the South African Engineering Corps., with whom he saw service in Abyssinia, Syria, North Africa, and Italy. The army, assuming that, because he had worked on the mines, he must know something about surveying, posted him to a survey company. In 1942 he was commissioned and posted to the railway battalion, whose job it was to construct the supply lines. With the battalion, he learnt something about the construction of bridges and tunnelling, and a great deal about handling men.

Uranium, Lime, and Ferrochromium

After the war, Keith took up the Chamber's scholarship and spent a year in the U.S.A. studying some of the latest developments in mining and metallurgy under the guidance of the Colorado School of Mines. He submitted the results of this study in a thesis to the University of the Witwatersrand, and was awarded a master's degree in engineering. He rejoined Rand Mines and, after working in the reduction plants of various mines of the Group, was seconded in 1949 to the uranium programme, taking charge of one of the two pilot plants that had been established to test the uranium process. The knowledge and experience he gained there were to stand him in good stead in subsequent years since this pilot-plant work provided the basis for the design of the uranium plants that were constructed subsequently.

However, before these plants were commissioned, Keith was appointed manager of the Northern Lime works at Taungs. Being well aware of the large amounts of lime that would be needed by the uranium industry, he soon realized that the reserves of limestone at Taungs were insufficient to support the expansions that would be necessary. Fortunately, Rand Mines' geologists had discovered a large deposit of good limestone near Silverstreams in the northern Cape, and, after a detailed study had been made of lime plants in the U.S.A. and Europe, a modern lime plant was built to process the material from the new deposit (1954).

In 1955, Rand Mines recalled Keith to take over as Consulting Metallurgist of the Group. This was an interesting period of his career since, apart from the many developments in the uranium industry in which he was involved, he was responsible, with Drs F. G. Hill and W. Bleloch, for the development of a new ferrochromium process based on Transvaal chromites. The research work conducted by these three researchers formed the foundation on which the present huge ferrochromium and stainless-steel industry in the eastern Transvaal is based.

In 1963, Keith was appointed an Assistant Manager of Rand Mines, being responsible for the development work in the Group. In the meantime, his old love, The

Northern Lime Company, was growing apace. In 1968, he was given full responsibility for the development of this company, being appointed Managing Director, but the phenomenal expansion of the company soon called for his full-time attention. Today, the limeworks of this company at Lime Acres is one of the largest and most efficient in the world. He retired as executive Chairman and Managing Director in 1979, but is still on the board in an advisory capacity.

Keith has always been interested in research, and is still a member of the Technical Advisory Committee of the National Institute for Metallurgy.

SAIMM Interests

His association with the South African Institute of Mining and Metallurgy started in his student days when he was awarded a book prize for his thesis at the University. He joined the Institute as a student in 1938; he was elected a member of Council in 1958, became President in 1969, and was made an honorary Life Fellow in 1978. As one might expect, his Presidential Address was entitled 'Lime in South Africa'. Published in the August 1969 issue of the *Journal*, it is still well worth reading as the synopsis suggests:

Lime is the most widely used and the cheapest chemical alkali known to man and virtually every product we use or eat has required lime in some phase of its manufacture. Its use goes back to the earliest days of man and many ancient buildings and writings bear testimony to this. The manufacture of lime involves the quarrying, crushing, and screening of limestone, and the burning of the sized stone in kilns, of which there are several types. The earliest kilns were of very crude design, and only in comparatively recent times have large-capacity, automated, scientifically controlled kilns been developed. The history of the South African lime industry is largely that of the three main lime companies and their story is told briefly. No other material

used in industry has a greater diversity of uses or more varied functions, and lime has applications in most South African industries. The main applications are in the production of gold and uranium, iron, steel and ferrochromium, carbide, sugar, and paper, and in water treatment, agriculture, and building. The Republic is well endowed with high-quality limestone, and the conclusion is drawn that many other minerals will have been exhausted before we run out of the limestone with which to process them. The expansion of the lime industry has in the past kept pace with the requirements of industry, and the future demand is expected to grow in parallel with the growth of these industries. Since the war, this growth has been phenomenal and, with our expanding populations and abundance of raw materials, it should continue in the years ahead. Limiting factors are the shortage of skilled labour and the distance from export markets. Confidence is expressed that the challenges of the future will be met, and that the lime industry will continue to make an important contribution to the growth and prosperity of South Africa.

Keith was Honorary Treasurer from 1973 for six years during the period that he served on Council as a Past President. He retired from the Council only at the end of 1980, when he left Johannesburg to live at Plettenberg Bay.

Home Life

Keith is married, and has three married sons and seven grandchildren. He has always been keen on sport, and particularly enjoys a game of golf and hiking on trails. His hobbies are painting, mainly in water colours, and he enjoys fishing and reading. In Johannesburg he was an active Rotarian, being involved in a great deal of social and charitable work.

We wish Keith a well-earned rest, and look forward to seeing him from time to time when he deserts his quiet pursuits at Plettenberg Bay to attend to his earlier interests of research, lime, and the South African Institute of Mining and Metallurgy.

Mineral processing

The Fourteenth International Mineral Processing Congress, sponsored by the Canadian Institute of Mining and Metallurgy, is to be held in Toronto from 22nd to 27th October, 1982. The theme of the meeting is 'World-wide industrial application of mineral technology'.

Papers are invited from prospective authors on the topics listed below in the preliminary programme. The papers should deal with practical aspects of these topics, rather than with theoretical research. The purpose is not to exclude research and development, but to encourage the presentation of innovative and stimulating ideas that can be applied within the mineral industry. Abstracts of 600 to 900 words should be sent before 1st July, 1981, to Michael J. Smith, c/o CIM Headquarters, 1130 Sherbrooke St. W., Montreal, Quebec H3A 2MB, Canada.

The preliminary programme is as follows:

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| | <i>Chairman/</i> |
| | <i>Co-Chairman</i> |
| 1 - Flotation - plant practice, equipment, design, simulation, control, and economics | P. Somasundaran/
R. L. Coleman |

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| 2 - Comminution - plant practice, equipment, design, simulation, control, wear, energy consideration, and economics | Prof. H. J. Steiner/
Prof. M. D. Everell |
| 3 - Round-table seminar on large grinding mills | Prof. M. Digre/
R. M. Vadas |
| 4 - Round-table seminar on modern and future plant design | R. P. Ehrlich |
| 5 - Mineral processes to recover precious metals | D. M. Wyslouzil/
Dr W. te Riele |
| 6 - Mineral processes to recover energy minerals (coal, uranium) | L. R. Plitt/
P. G. Tregelles |
| 7 - Mineral processes to recover industrial minerals | G. W. Riley/
G. Barbery |
| 8 - Round-table seminar on the environment and ecology, and how the different countries cope with associated problems | G. W. Poling/
Prof. V. J. Revnitse |
| 9 - Materials handling with an emphasis on preconcentration methods, agglomeration techniques, solid-liquid separation | Dr K. V. Konigsmann |
| 10 - Open session to deal with topics emerging from general demand | |

General enquiries about the Congress should be directed to L. J. Vincze, Publicity Chairman—XIV IMPC, c/o CE Lummus-Minerals Division, 251 Consumers Road, Willowdale, Ontario 2M4 4H4, Canada.