

SOUTH AFRICAN INSTITUTE OF MINING AND METALLURGY**Seventy-Fifth Anniversary****PROCEEDINGS OF THE SEVENTY-FIFTH ANNIVERSARY
MEETING HELD IN KELVIN HOUSE, JOHANNESBURG,
ON 24TH MARCH, 1969, AT 10.15 A.M.**

Mr R. C. J. Goode (President) was in the Chair.

There were also present one hundred and thirty-six Members, including Messrs R. J. Adamson, Dr J. M. Bereza, Messrs M. Barcza, H. Britten, H. E. Cross, J. K. E. Douglas, G. W. Holl, Dr J. P. Hugo, Messrs C. J. Irving, P. Lambooy, Prof J. de V. Lambrechts, Mr D. G. Maxwell, Dr J. T. McIntyre, Prof R. P. Plewman, Messrs J. F. Reid, V. C. Robinson, H. Simon and P. W. J. van Rensburg (Council Members), G. Abdinor, C. B. Anderson, H. F. Allan, E. L. Atkinson, V. C. Barnes, J. F. Bennet, W. W. Bath, R. E. Barnes, C. L. Berrange, J. P. Burls, Dr W. Bleloch, Dr L. A. Bushell, Messrs D. L. Carson, D. D. Comley, R. S. Cooke, R. R. M. Cousens, J. P. Coetzee, W. L. Cousens, J. Daniel, R. Daniel, D. G. Davies, S. K. de Kok, V. S. Dillon, B. S. Dykhouse, Dr H. G. Denkhaus, Dr R. S. J. du Toit, Messrs J. I. L. Edwards, R. C. Espley-Jones, J. C. Ferguson, D. T. Fourie, A. Frost, W. R. Flook, Dr N. P. Finkelstein, Messrs D. F. H. Grave, J. M. Gosnell, E. K. Gibson, R. W. Grout, E. W. Gray, J. S. Hay, F. G. Hill, H. N. Hepker, J. P. Hoffman, C. G. Hodges, D. M. Jamieson, Dr D. G. Krige, Dr N. P. Lategan, Messrs J. E. Laschinger, J. Levin, C. P. Linsell, J. O. Kempe, F. Q. P. Leiding, A. I. Lee, D. G. Malan, W. Malan, H. W. McCulloch, R. D. R. Munro, C. S. Macphail, Dr T. F. Muller, Dr A. J. Nel, Messrs S. C. Newman, G. G. Nicolson, G. Y. Nisbet, J. A. Papenfus, E. Pavitt, W. H. Pittie, P. C. Pirow, P. G. D. Pretorius, N. F. Peverett, R. P. Plaskett, M. P. Pearse, W. Pilkington, T. K. Prentice, Dr R. E. Robinson, Messrs R. B. Richardson, R. St. J. Rowland, R. J. Rouillard, F. O. Read, W. T. Ruhmer, D. Savile Davis, E. F. Statham, K. Smith, H. Simon, G. B. Steyn, C. D. Storrar, Dr N. B. Strydom, Messrs J. H. Talbot, A. H. Taute, J. H. Taylor, G. W. Thiel, K. A. Tweedie, W. E. Vance, Dr H. J. van Eck, Messrs L. W. P. v. d. Bosch, P. A. von Wielligh, N. B. Vinson, S. J. Venning, W. M. Walker, D. T. Watt, Dr H. J. R. Way, W. T. L. Wayman, R. G. Williams, L. G. S. Wright and C. F. Ziervogel.

Thirty Associate Members, including Messrs E. Collier, G. Douglas, D. H. Gray, H. G. Gericke, R. Hemp, N. M. Hayne, A. Hazell, P. M. Johnston, D. E. Love, Miss V. E. Marting, Messrs R. G. Matthews, P. Malpage, D. Nicolle, R. Pendreigh, J. J. Rosslee, R. W. Shearer, R. F. Taylor, G. C. Thompson and D. A. Viljoen.

Three graduates, Messrs G. S. Giles, J. P. Hatfield and J. A. Jones.

Five Affiliates, Messrs A. C. Collie, E. Collier, A. B. Cook, W. Jacobs and G. M. Thain.

Two Students, Messrs C. J. Bircher and R. P. Henrard.

Two Visitors, Messrs F. Holmes and J. H. Jansen.

Secretary, Mr D. C. Visser.

Total present: One hundred and eighty.

The President: "Gentlemen, it gives me very great pleasure to welcome you to today's meeting, which marks the 75th Anniversary of the founding of the South African Institute of Mining and Metallurgy, and to say how pleased I am to see such a good attendance."

CONFIRMATION OF THE MINUTES

The President: "Before proceeding with the main business of the meeting, there is the customary agenda to deal with and the first item is the confirmation of the minutes of the meeting held on the 19th of February, 1969, as published in the March, 1969, issue of the *Journal*. May we confirm these minutes? Thank you."

MEMBERSHIP

The President: "I have much pleasure in announcing that the names of the undermentioned candidates, having been published in accordance with By-Law 5.2.2., Council has elected them to membership of the Institute in the following grades:

I wish to welcome the newly elected members to the Institute, and congratulate the member who has been transferred to a higher grade.

GENERAL BUSINESS

The President: "I have been asked to announce that car stickers are available from the Secretary for those members going by car to the University of the Witwatersrand for the excursion after lunch. Those members going by bus on the various excursions are reminded that buses leave from outside Kelvin House at 1.35 p.m.

Is there anything else to bring up under General Business?

I shall now ask Mr Douglas, Senior Vice-President, to take the Chair while I make my address."

The President presented a review of the affairs of the Institute over the past seventy-five years which is printed in this issue of the *Journal*.

Mr Douglas: "Thank you very much, Mr President, for a most stimulating address. Would you please resume the Chair?"

The President: "May I now call on Dr T. F. Muller, President of the Chamber of Mines of South Africa, and Honorary President of this Institute, to address us."

ADDRESS BY DR T. F. MULLER, PRESIDENT OF THE CHAMBER OF MINES OF SOUTH AFRICA

This address is printed in this issue of the *Journal*

The President: "Thank you very much, Dr Muller.

The final address today is to be given by our very eminent Honorary Life Member, Chairman of Iscor and the Industrial Development Corporation, Dr H. J. van Eck."

ADDRESS BY DR H. J. VAN ECK, CHAIRMAN OF THE
INDUSTRIAL DEVELOPMENT CORPORATION AND OF ISCOR

This address is printed in this issue of the *Journal*

The President: "We have been very privileged this morning to have been addressed by the leaders of South Africa's two greatest industries. Firstly by Dr Muller, President of the Chamber of Mines, representing the gold mining industry, but as you know he has fingers in various other pies throughout the country, and secondly, by Dr van Eck who has a finger in just about every metallurgical activity in South Africa.

Dr van Eck has spoken to us wisely on mining, and I think at this stage I might let you into a little secret. He has been a Member of our Institute for close on 40 years. So in thanking you for your congratulatory messages, may I in return congratulate you Sir, on your long period of service to the mining and metallurgical industry and this Institute in particular." (*Applause.*)

The President: "I have much pleasure in calling on Dr R. E. Robinson to deliver a message from the National Institute for Metallurgy."

Dr R. E. Robinson (Director, National Institute for Metallurgy): "Mr President, it is perhaps somewhat presumptuous of me to take the floor after such wonderful addresses by such eminent authorities, but we at the National Institute for Metallurgy would not like this opportunity to pass by of conveying formally to the Institute of Mining and Metallurgy our most sincere congratulations on your anniversary and the achievements in the past 75 years. As one rather small research organisation in this country concerned with the problems associated with the processing and treatment of minerals, we are very conscious indeed of the very big role that the Institute has played, and the very important part it will play in the future, and I would like to refer particularly to this future aspect of your activities.

I think right throughout the world today research is very big business and a great deal of money is put into research, and I am afraid that associated with this there has been some, shall we say reduction in professional standards, evident. One gets the impression today that it is sometimes more important in a research organisation to have a good public relations' department, than good technical divisions, and I think that it is in this aspect in particular that your Institute has done so much for this country in ensuring that the work presented to your Institute has been of a high standard and the people among the members of your Institute are in a position to discuss and criticise this work and make sure that the standard will never be degraded. I sincerely hope, Mr President, and I am convinced that this will continue in the future.

We at the National Institute for Metallurgy are very conscious of this forum that you provide, not only for the propagation of research results, but also for their discussion and criticism and if I may, I would like to indicate that if you have, as you have indicated, been somewhat disappointed in the papers that are being submitted for presentation, this is purely on account of the fact that we want to make sure that anything submitted to your Institute maintains the high standard that you have always had in the past.

Mr President, my sincere congratulations on behalf of the National Institute for Metallurgy."

The President: "Thank you very much, Dr Robinson, for your kind message, and I am sure that we shall go forward working together hand-in-hand in close and happy co-operation.

I am also pleased to state that we have today a visitor from Australia, Mr W. E. Vance, and he has a message for us from the Australasian Institute of Mining and Metallurgy."

Mr W. E. Vance: "Mr President, gentlemen, I feel very fortunate that my visit to South Africa has coincided with the 75th Anniversary celebrations of your Institute. It is indeed a personal pleasure to have attended your banquet on Friday evening, and again the meeting this morning.

We in Australia are very happy at the close ties that exist between the two Institutes, and we remember very many Members of your Institute who visited us in 1965 for the Eighth Commonwealth Mining and Metallurgical Congress.

Mr President, it is with very great pleasure that I convey to you, and Members of the South African Institute of Mining and Metallurgy, the very sincere greetings of the President, the Council and Members of the Australasian Institute of Mining and Metallurgy on the occasion of your 75th Anniversary."

The President: "Thank you very much, Mr Vance, and would you please convey our thanks to your President and your Council, and particularly to that very energetic secretary, Miss Beryl Jacka, whom we all remember with such fondness for all the cares and attention she gave us when we were over there on Congress in 1965.

Incidentally, gentlemen, the Australasian Institute of Mining and Metallurgy is one year older than us. They celebrated their 75th Anniversary last year.

I have a congratulatory message from the Members of our Institute at the Hendrik Verwoerd Dam, and I expect there are one or two more which have not been brought to my notice.

I believe that Dr H. J. Nel, President of the Associated Scientific and Technical Societies of South Africa, has a surprise for us."

Dr H. J. Nel (President A.S. & T.S.): "Mr President, thank you very much for the opportunity to say a few words. On behalf of the Kelvin House based family, I would like to express their very happy birthday wishes to the Institute, to congratulate the Institute on its achievements in the past, and to wish them everything of the best in the future.

It is an old South African custom that when a man becomes a grandfather, he is presented with a red handkerchief and a little box of snuff. The Institute certainly has fathered many important ventures, if I may say so, under the leadership of its distinguished Presidents in the past, but it would hardly be fair, Mr President, to give you a red handkerchief and a box of snuff. We have another small gift from the family, which we hope that you and your successors, Sir, will find decorative and functional, but that you will not have too many occasions where you feel you will have to use it.

So, on behalf of the family, may I present you with this gift." (Dr Nel then handed over a handsome chairman's gavel in a presentation case.)

The President: "May I thank you on behalf of the Institute for this mallet. I would though, like to recall what I said in my address—discussion at our meetings has at all times been courteous! We shall cherish this gavel very much indeed as a memento of our 75th Anniversary.

Gentlemen, we have come to the end of what I am sure all of us have felt to have been a most memorable period of celebration, that is the banquet last Friday

and the meeting today. Today's meeting, I think, has been outstanding by the way in which we have been brought up to date with the latest thoughts on mining and metallurgy by our two main speakers. All that is left for me now is to wish you a very happy birthday."

THE MINERAL INDUSTRY IN SOUTH AFRICA

A radio talk given on 16th March, 1969, as an introduction to the Institute's 75th Anniversary celebrations.

R. C. J. Goode (President): South Africa is known for its sunshine and mineral deposits—especially its gold and its diamonds—and as this year marks the 75th Anniversary of the establishment of the South African Institute of Mining and Metallurgy, it is appropriate that I say a few words about mining and metallurgy and the part this industry and our Institute has played in the life of this country.

Africa, as the Dark Continent, with its fascinating tales of Prester John, Ophir, Queen of Sheba and its myths and legends has throughout the ages fired the public imagination. Pharaoh Necho, 600 years before the birth of Christ, sent an expedition from Egypt around the Cape to probe this strange land. The gold for King Solomon's throne was said to come from Monomotapa—the country now known as Rhodesia. Centuries later the Arabs and Portuguese searched for this mineral wealth. The Arabs found little gold but unfortunately established a lucrative trade in black slaves.

Now let us take a brief look into the closing stages of the Stone Age when the indigenous population of the lower portion of this continent consisted of the Bushmen, a nomadic hunting people who knew no metals and kept no stock, and the Hottentots who were a pastoral folk with cattle and sheep. Then somewhere about the 11th century the Bantu started their long migration southwards and brought with them the knowledge of smelting of iron ore. One of their settlements was here in Johannesburg on the Melville Kopje at Emmarentia. These people were the first miners and metallurgists on the Witwatersrand and the beautifully preserved iron smelting furnace constructed nearly 1,000 years ago is a tribute to their technical ability. This ability to use iron to make better spears for hunting or to fashion hoes for cultivating the soil led to their establishment as a superior tribe. The earlier Bushmen were pushed back to the inhospitable swamps and deserts and the Hottentots fled to the south.

The Bantu also knew the art of copper smelting. In the days of the Dutch East India Company, at the end of the seventeenth century, Bantu workers brought copper from the north-west Cape to Simon van der Stel, but it was another two hundred years before the white man turned this to advantage.

Stories of the Bantu mining gold spurred the early European hunters to travel deeper into the heart of Africa in search of wealth, and we are told that Karel Kruger, in 1834 whilst leading an ivory hunting expedition, discovered gold on the Witwatersrand, and took samples to Cape Town; but when he returned with a larger expedition a few years later his party was attacked by Moselekatze's Matabele near Potchefstroom. Kruger was killed and only the legend survived.

The real spur to mining in this country was the discovery of diamonds in Griqualand West in 1867. The field seemed fabulously rich and diggers flocked to the scene from the four corners of the earth. With them came Cecil Rhodes, Barnato, Beit and some of the finest mining and financial brains the country had yet seen. These giant entrepreneurs were not tempted by the small deposits of gold in the Barberton and Pilgrim's Rest areas when these were made a few years later but