

Address by the President of the Chamber of Mines of South Africa

Dr T. F. Muller (Honorary President): "Mr President, gentlemen. May I congratulate the Institute on its 75th birthday, and your President on his comprehensive review of the Institute's 75 years. It is an interesting commentary on the affairs of the Institute that your President should refer to a speech made by a founder member 25 years ago on the occasion of your 50th Anniversary and then say there is no need to repeat what was given there, but that he would confine his remarks to bringing the Institute's history up to date.

To me this suggests a remarkable continuity of thought and ideals—a welcome island of stability in an ever-changing world. One can somehow picture another future President, perhaps one of the younger and tougher members here today, doing the same thing in 25 years when you celebrate your centenary—and again someone doing the same in the year 2094 when your Institute is 200 years old! I hope they will recognise their debt to the early pioneers of the Institute gathered here today.

In any event, this review of the fine achievements of the past 75 years is certain of an honoured place in the annals of the society. Here is a record of the onward march of technology in South Africa and a tribute to a long line of mining engineers, of chemists, metallurgists and geologists who made a greater contribution to the well-being and the prosperity of South Africans than South Africans generally are aware.

Your Institute started off as a 'gold and cyanide club', peopled largely by chemists and metallurgists who made a signal contribution to the industry from the earliest times. Despite the addition to their ranks of ever-growing numbers of mining engineers, the metallurgist members have continued to make notable contributions. One recalls, for example, the manner in which they rose to the occasion to resolve the problems associated with the establishment of the uranium industry in this country. The creation of a major industry based on the existence of low grade uranium ores in the conglomerate reefs of our low grade goldfields is a classic example of the manner in which a new large industry can be rapidly created through the combined endeavours of all concerned.

I noted with pleasure your remark, Mr President, that members of the Institute would like to keep up to date with recent progress in nuclear fuel matters and that members should be given the opportunity to study developments in their journal. I am sure that the National Institute of Metallurgy which conducts fuel research on behalf of the Atomic Energy Board and of the Uranium industry, and NUF COR, which co-ordinates the uranium research programme, would be glad to co-operate if invited by the Institute to make periodical contributions to its journal.

You have referred to the building up of our research organization and its dynamic approach to mining problems. I understand that the expenditure of the mineral industries on research exceeds one-third of the entire research expenditure of the private sector. South Africa is in the forefront of mining development and the focus of world attention is on the achievements of our scientists and mining engineers. We can look forward to continued advances in mining technology based on their vision and expertise.

I share your disappointment, Mr President, that the Base Metals Division has ceased to exist; and that there is a resultant dearth of papers offered to the Institute on these important sections of mining and metallurgy. We are seeing some remarkable developments in the mining and beneficiation of base minerals, and it is in this area that I see the greatest potential for future expansion. If we can grasp the opportunities

here we need not fear the decline of gold mining when that day comes. It has rightly been pointed out that the geologist has got way out in front for he has successfully located vast deposits of minerals which now await exploitation by the mining engineer and the metallurgist.

We are fortunate in this country that we have behind us so much experience gained from working deep, low grade gold deposits on a scale unknown elsewhere in the world. We have too the entrepreneurs with the vision and the call on financial resources to ensure that new ventures are brought to account.

It may well be that yet more large mineral deposits remain to be discovered, and deposits of very low grade may become economic to mine. Large scale and highly organised mining made possible the successful exploitation of low grade goldfields despite the restrictions imposed by the fixed gold price. Recently the low grade copper deposits at Phalaborwa became exploitable through effective planning and large-scale operation. Low grade ferro-chrome and titaniferous magnetite deposits are being successfully exploited on a large scale.

We can look forward to an acceleration in the local processing and refining of base minerals. Local processing can provide high dividends as witness the large returns from coal production in terms of power generated, and in the production of fuel, by-products and manufactured coke. Similarly, the production of iron ore and its combination with other raw materials, results in the production of iron and steel to the value of perhaps ten times that of the raw materials themselves. Plants constructed to process minerals include the R560 million extensions to Iscor, which now rates as one of the 200 biggest companies in the world outside the United States—and others which you have referred, including Highveld Steel and Vanadium Corporation, Sasol and the Southern Cross—R.M.B. Alloys plant.

I have no doubt that developments in these directions will absorb our increasing attention and although the private entrepreneur must play the leading role, I believe there will be increasing onus on the State to create the climate in which mining and beneficiation of our base minerals can proceed with expectation of winning our due share of world markets.

In the meantime, we are fortunate that gold mining continues to provide the hub of our mining industry and of our national economy. Production last year was a record, largely as the result of three new mines coming into production. There are two more mines in the developing stage, and applications for State assistance by no less than 16 mines have been approved. A large and important section of the industry is approaching the end of its working life; yet it is not unreasonable to hope that an increase in the price of gold will be achieved in time to keep in being a thriving gold mining industry in South Africa for many years to come.

I was particularly interested, Mr President—and I am sure everyone in the gold mining industry will be—in your thoughts on research on what you termed 'product usage', *i.e.* the many uses of gold.

Despite the theories of the late John Maynard Keynes, gold remains the best, in fact the only ultimate, unconditionally acceptable means of international payment. Its monetary use is clearly its most important use. This is an aspect of 'product usage' on which I do not intend to enlarge today.

However, this fact does not detract from your basic proposition that as mining engineers we may have concerned ourselves too greatly with the physical production of gold and too little in ensuring its consumption and value. I presume that by 'value' you meant 'price'.

These are matters we must ponder, Mr President.

You referred in your Presidential address some months ago to the panic in Johannesburg in the very early days before the discovery of the cyanide process. You recalled that a famous predecessor of mine in the office of President of the Chamber of Mines, Sir Percy Fitzpatrick, then exclaimed: 'Grass will grow in the streets of Johannesburg within a year'. Later when he had recovered from that shock he went on record saying: 'In South Africa the optimists are always right'. He was wrong again. In fact the optimists have also been way out in their gazing into their crystal balls, because the results have far exceeded even their expectations. The moral of this story—Presidents of the Chamber of Mines must count their words, or better say nothing. Stick to writing books on dogs and suchlike.

Optimists today see a bright future for mining. Maybe the results will once again exceed their expectations. I am an optimist and I hope so. But one does not have to be an optimist to assess the potential that is there. It has been estimated that the population of this country will double by the turn of the century. The mineral industries will not only have to keep pace with this development but will have to outstrip it, so that the necessary growth rate in per capita income can be maintained. With proper and timely planning and research and with due encouragement from the State there seems no reason, on the basis of existing knowledge alone, why this should not be attained.

It is certain that South Africa will remain a mining country and that it will continue to rely on the members of this Institute to provide it with the skills and the know-how on which to base the next phase of achievement. I am told that young men and their parents, are sometimes fearful that rewarding careers do not lie ahead for those qualifying now as mining engineers, metallurgists or geologists. We must do what we can to dispel this fallacy. Mining will in the future provide challenges and rewards that will exceed those of the past and we are going to need as many top brains as we can get.

By coincidence, Mr President, the Institute is celebrating its 75th Anniversary in the year which may see Man step forth upon the moon, a technological triumph of such brilliance and of such dimensions that the mind cannot fully grasp it. The outstanding characteristic, and perhaps the redeeming feature of Man in this century is his capacity to probe the perplexities of nature and to fashion machinery and evolve techniques for the exploitation of this knowledge. In the benefits to the people of the world that flow from technological advance lies the best hope for South Africa and the world.

Once again, my congratulations to you, Mr President. May the Institute continue to flourish."