

Proceedings, Annual General Meeting, 1993

The 96th Annual General Meeting of The South African Institute of Mining and Metallurgy was held in the Gold Room of the Transvaal Automobile Club in Johannesburg on Wednesday, 11th August, 1993.

OBITUARIES

The President announced the deaths of the following members of the Institute during the past year.

Life Fellow

E.F. Laschinger.

Other Members

R.K. Boright, J.S. Jacobi, R.D. Power, J.H. Cannon, C.J. du Plooy, L.B. Mcrae, C.P. Rossouw, A.L. Sillars, A.W. Heugh, R.K. Briggs, P.J. Stark, and C.S. Stott.

As a mark of respect to the memory of the deceased and in sympathy with the bereaved, all rose and observed a moment of silence.

MINUTES

The minutes of the previous Annual General Meeting, which were published in the August/September 1992 issue of the *Journal*, were confirmed.

WELCOME

The President extended a special welcome to the guests: Professor Desmond Pretorius, the recipient of the Brigadier Stokes Memorial Award; Mr J.B. Raath, Government Mining Engineer; Mr J.J. Geldenhuys, President Elect; Chamber of Mines; Dr R.P. Viljoen, President, AS&TS; Dr J.W.L. de Villiers, Atomic Energy Commission; presidents and representatives of sister institutes and other associations; recipients of awards, senior members of industry, Honorary Life Fellows, Past Presidents, members, and other guests present.

BRIGADIER STOKES MEMORIAL AWARD

President: The Brigadier Stokes Memorial Award was instituted in 1980 to commemorate the outstanding contribution to the South African mining industry made by Brigadier R.S.G. Stokes, an Honorary Life Fellow and Past President of the Institute. The award is made to an individual for the very highest achievement in the South African mining and metallurgical industry. It gives me great pleasure to announce that the award for 1993 is to be made to Professor Desmond Pretorius.

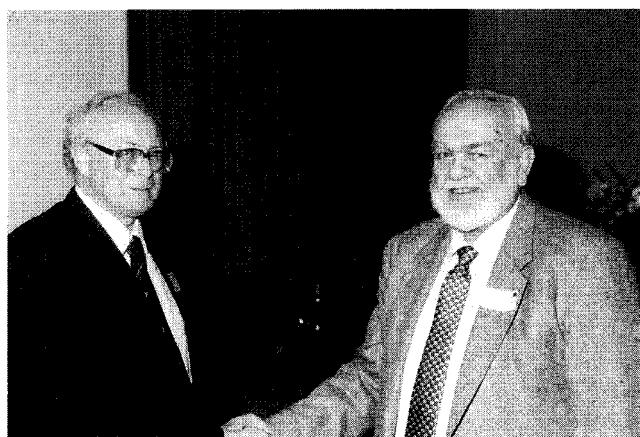
I call on Mr John Cruise to read the citation.

Mr Cruise: In nominating Professor Desmond Aubrey Pretorius as the 1993 recipient of the Brigadier Stokes Memorial Award, the Council of The South African Institute of Mining and Metallurgy steps, for the first time, outside the confining practice which, until now, has limited its honorees to the technologies of mining or metallurgy, or to captains of the industry that the Institute serves. The selection of a geologist in this hundredth year of the

Institute's existence is a timeous reminder of what the down-stream extractive disciplines owe to their parent science. Perhaps it also re-dresses, to some extent, the unfortunate loss of contact that specialization brings. This was not always the case. Singular contributions to the deliberations of this Institute have been made down the years by eminent geologists from E.T. Mellor's 1916 paper on the conglomerates of the Witwatersrand, through the identification of uraninite in Witwatersrand ores in 1924, to the papers by Krahman, Frost, Wiesse, and others on the discovery of the Witwatersrand and Orange Free State goldfields and, ultimately, a paper by Des Pretorius himself, delivered to our Symposium on Mathematical Statistics and Computer Applications in Ore Valuation in 1966.

In the meanwhile, something of a reverse flow took place in 1936, when Guy Carlton-Jones, an eminent mining engineer, was elected President of the Geological Society. In his Presidential Address, he delivered a comprehensive synthesis of Witwatersrand geology, from the East Rand to Venterspost, identifying the channelization of reefs that was to prove so valuable for mine planning in subsequent decades. These names are, of course, not unfamiliar to Dr Pretorius. They are only some of the several score of members of the Witwatersrand Basin hall of fame of which Pretorius himself must be pre-eminent. Yet his prevailing and genuine lack of pretension would cause him to claim, like Newton, that, if he has seen further, it is only because he has stood on the shoulders of giants.

The circumstances that brought him there are the stuff of the Witwatersrand lore. Born into a mining family on the Robinson Deep 60 years ago next Saturday, his early youth was spent on Venterspost and Libanon as one consequence of the work of Krahman and Reinecke. Following his *cum laude* graduation in mining geology from the University of the Witwatersrand in 1946, he spent some 13 years in field geology and geophysics in Southern Africa, North Africa, and the Middle East. In particular, he performed much of the fieldwork with Paver and Vice that led to the gold discoveries in the Orange Free State. In 1959 he returned to



Left to right—Mr Hannes Hoffman congratulating Professor Desmond Pretorius, recipient of the Brigadier Stokes Memorial Award

Wits to direct the Economic Geology Research Unit and left it more than 30 prodigious years later, having earned the accolades of his peers across the world for his contributions in two main areas of geological understanding.

The first of these was his pioneering of quantitative sedimentology in the exploration and exploitation of the Witwatersrand gold deposits. This was also the subject of his 1966 paper to the Institute. Of more than 60 measurable parameters of a normal conglomerate reef, he said, only three were currently being employed in extrapolation of the tenor of the gold mineralization between and beyond individual mines.

Progressively more refined techniques of statistical treatment had to be devised to extract the necessary data. Yet time-consuming and expensive methods of analysis could be aided and, in some cases, replaced by more economical geological observation and measurement. This, in time, demanded a transformation of the geological approach to exploration, and evaluation from the existing qualitative and semi-quantitative basis to a fully quantitative one. The level of confidence attached to all prediction, he continued, can be raised by considering not simply the gold, which itself is a small and erratic part of a particular rock, but the whole rock itself. The simultaneous role in training, supervising, and monitoring numerous masters and doctoral candidates, led to the wide dissemination of quantitative sedimentological techniques of ore resource evaluation.

His role as a teacher who presented unforgettable lectures to two generations of undergraduates at Wits and elsewhere, has similarly been of incalculable benefit to the mining industry.

His second contribution was his work on the tectonic evolution and framework of Southern Africa, which has given improved insights into the metallogeny of this extraordinary region and the origins of its reserves and base metals. His perspicacity has been recognized and applied internationally. He has travelled extensively, promoting the excellence of South African geology and mining technology in a series of lectures to distinguished audiences on four continents.

But it is principally as the 'guru' (and there is no more appropriate word), of the Witwatersrand Basin Deposits that we recognize him today. In a series of seminal publications in the 1960s and 1970s, he evolved his conceptual model of six identifiable goldfields, as fluvial fans, built up in a series of pulses of sedimentation, initiated through successive tectonic adjustments. His 1974 model, which he modestly expected would undergo still many more refinements before gold mining comes to an end in the Witwatersrand Basin, remains the definitive sedimentological basis of understanding for gold and uranium emplacement in this exceptional mineral field. No less important is his later work on the source of Witwatersrand gold, and his convincing case for this to have been an Archaean granite greenstone basement terrain on which sedimentary basins such as the Witwatersrand rests.

During his 30 years at the Economic Geology Research Unit, Pretorius was at pains to encourage his staff and students to interact regularly with geologists in the mining houses, thus recognizing the need to tinge academic excellence with a patina of practical application, but also acknowledging that, without subsequent exploitation,

economic geology remains sterile. The Institute is pleased to be able to return the compliment.

A last feature of his life and work worth mentioning now is his encyclopaedic knowledge of the history and discovery of the Witwatersrand deposits—a knowledge that he shared most entertainingly at the time of the centenary of the Witwatersrand discoveries in 1986. In communicating both popular history and scientific concepts, Des Pretorius has the gift of the enthusiast.

In making this, its highest award, to him tonight, The South African Institute of Mining and Metallurgy belatedly joins the Geological Societies of South Africa, America, and London, and the Society of Economic Geologists of America, each of which has awarded him its highest honour. He is a South African of whom we are immensely proud, and I now invite him to honour us, his mining and metallurgical cousins, by accepting this award.

Prof. Pretorius: Mr President, Members of the Council of the Institute, you have bestowed a great honour, indeed, upon me. On being informed by the President that I was to be the recipient of the 1993 Brigadier Stokes Memorial Award, my first reaction was one of surprise and disbelief, but this was soon followed by a sense of deep appreciation of the distinction of having my name added to the company of previous recipients, whose contributions to the achievements and progress of the South African minerals industry, are of the highest rank.

For a geologist to be so honoured by the mining industry, is a rare event. His role, sometimes, has been seen as likely to be more in accord with the trend of an alleged discussion between a consulting engineer and the manager of a new mine in its early planning stage. Because of the relatively uncomplicated geology of the orebody, the CE was having difficulty in understanding the manager's insistence on having a geologist added to the staff. To the remark by the CE that he had to respect the manager's faith in the geological profession, the latter replied that it was not an act of faith, but a safety precaution! In answer to the CE's raised eyebrows, the manager explained that he wanted a geologist so that, if anything went wrong with the new mine, he would have someone immediately available who could be blamed!

I am particularly pleased at being considered worthy of the award because of my work on the goldfields of the Witwatersrand Basin. I suppose there was a historical inevitability in my devoting so large a part of my professional career to the greatest of the world's gold deposits. My father gave 25 years to the gold mines. I was born on the Robinson Deep Mine, and part of my early youth was spent on Venterspost and Libanon Mines during the beginning years of the West Wits Line. Such was the background to my arrival at the University of the Witwatersrand to study mining geology. This engineering degree provided an excellent introduction to economic geology, mining, and metallurgy. It was a sad day for me when, later, in the closing years of my association with the University, the degree ceased to be offered. I think the mining industry lost something of value when a decreasing number of students, claiming that the courses were too many and too difficult, forced the University to declare the degree dead and buried.

My studies towards a four-year degree in mining geology fell under the wing of Professor Edgar Mendelsohn, an outstanding teacher and mentor, who led me into my

commitment to trying to understand the range of geological factors which influenced the development of the unique Witwatersrand deposits. By the time I graduated, Edgar Mendelsohn had seen to it that I had been underground on every one of the mines, large and small, that stretch between Heidelberg and Randfontein. I even re-visited Venterspost and Libanon. Also, I was privileged to do all my compulsory vacation work with the highly respected Mines Geological Department on East Geduld Mine. No-one could have asked for a more stimulating initiation into the geology of the Witwatersrand Basin and its goldfields.

The seeds planted then could not have grown into the fruits recognized by the award, had it not been for the creation and continued nourishing of the Economic Geology Research Unit by the Chamber of Mines and major mining groups. I would like to pay tribute to the generosity of the mining industry during all my 31 years with the Unit: without their support, the Unit could not have accomplished what it did at the University of Witwatersrand.

In the mandate given to the Unit by the industry in 1957, emphasis was placed on the carrying out of research into a better understanding of the nature of the Witwatersrand Basin and its contained goldfields, and on the origins of the gold and uranium. I had the good fortune, through the opportunities and facilities offered by the Unit of being able to make a contribution to the unravelling of the complex story of Witwatersrand mineralization. It is heartening to know that the results of my work have benefited the mining industry, and gratifying to get acknowledgment through the Brigadier Stokes Memorial Award of what I was able to give back to the sponsors of the Unit.

Like any exploration geologist worth his salt, I am a cautious optimist in regard to the future of the gold-mining industry. I am not yet ready to say my farewells to the Witwatersrand Basin because I am not convinced that the ultimate limits of the Basin have been demarcated, and that there is no room for another goldfield to lie cunningly concealed somewhere in the old sandbox in which I built my castles for so many years.

PRESENTATION OF MEDALS AND CERTIFICATES

The President, who would be presenting the medals and certificates, asked Mr John Cruise to announce them.

Mr Cruise: The medals and certificates are for papers published in the *Journal* from March 1992 to February 1993, and in the *INFACON Proceedings*.

Silver medals are awarded to the following:

- Dr D.G. Krige and W. Assibey-Bonsu for their paper entitled 'New developments in borehole valuations for gold mines and undeveloped sections of existing mines', published in the March 1992 issue of the *Journal*
- Dr H.A.D. Kirsten and P.J. Bartlett for their paper entitled 'Rigorously determined support characteristics and support-design method for tunnels subject to squeezing conditions', published in the July 1992 issue of the *Journal*
- M. Akyüzlü and Professor R.H. Eric for their paper entitled 'Slag-metal equilibrium in the smelting of



Left to right—Silver medals recipients—Winfred Assibey-Bonsu and Dr Danie Krige, receiving awards from Hannes Hoffman

high-carbon ferrochromium', published in the April 1992 issue of the *Journal*

- R.D. Knutsen and R. Hutchison, (a certificate being a non-member) for their paper entitled 'Duplex ferrite-martensite steels containing 16 wt per cent chromium', published in Volume 2 of the *INFACON Proceedings*.
- P.C. Pistorius, Professor R.F. Sandenbergh, and T. von Moltke (a certificate being a non-member) for their paper entitled 'The influence of heat-tinted surface layers on the corrosion resistance of stainless steels', published in Volume 2 of the *INFACON Proceedings*.
- Dr M.A. Ford for his paper entitled 'Uranium in South Africa', published in the February 1993 issue of the *Journal* as a contribution to the Mineral and Metal Review Series.

PRESENTATION OF STUDENT PRIZES

Prizes are awarded to the following students for the best student dissertations in part fulfilment of the BSc (Eng) degree:

- Mining: No award
- Extractive Metallurgy: P. Leger and A.C. Deneys, University of Cape Town, for 'An investigation into the Rod Distribution and Breakage Mechanism in a Rod Mill'.
- Metals Technology: H.J. Burger, University of Pretoria, for 'The Upper-nose Temper Embrittlement during Tempering of Mn-Mo Pressure Vessel Steel'.

Prestige prizes to students of the Technikon Witwatersrand go to C.T. Smith, M. Rainier Pope, and R. Greyvenstein.

ANNUAL REPORT AND ACCOUNTS

President: Before the presentation of the Annual Report, I want to thank a few people and organizations.

- My thanks and appreciation to Celeste Mackintosh and her team for their diligence and support for the past year. Without their support, certain things would not have been possible.
- A vote of thanks must go to the Office Bearers and members of Council for their support and wise counsel during this session.

- Our appreciation goes to our respective companies for having allowed us the time to participate in Institute matters.
- Last but not least, aan my vrou, Hanneke, vir haar geduld en opoffering van haar kant om my so getrou by te gestaan het.

The President presented the Annual Report, highlighting those sections that he regarded as especially significant.

Mr Cruise then presented a summary of the financial status of the Institute.

To a question from Dr P.J.D. Lloyd as to why the President had not signed the accounts, Mr Cruise replied that there had not been time for this as the President lives in Witbank. The original accounts would be signed by the President.

OFFICE BEARERS AND MEMBERS OF COUNCIL FOR 1993/1994

President: I have pleasure in announcing that, in accordance with Clauses 3.2 and 3.3 of the Constitution, the retiring Council has elected the following Office Bearers for the ensuing year:

President:	Dr H. Scott-Russell
President Elect:	J.A. Cruise
Senior Vice President:	D.A.J. Ross-Watt
Junior Vice President:	P.D.K. Robinson
Immediate Past President:	J.P. Hoffman
Honorary Treasurer:	J.A. Cruise.

In terms of the election of ordinary members of Council, there is a letter from the scrutineers stating 'We have to report that we inspected the nomination papers for members of Council for the 1993/4 session, and found that the ballot papers sent out to Corporate Members of the Institute were in order. There was a return of 452 papers, representing a return of 30,3 per cent. There were three spoilt papers. As a result of our scrutiny, we find that the following members have been elected (in alphabetical order): Dr N.A. Barcza, G.A. Brown, B.R. Broekman, Dr L.A. Cramer, Prof. R.J. Dippenaar, A.A.B. Douglas, F.M.G. Egerton, B.R. Fleetwood, P.R. Janisch, R.P. Mohring, K.C. Owen, K.A. van Gessel, D.J. van Niekerk, P.M.T. White. In addition, Dr R.V.R. Handfield-Jones and P.J. Knottenbelt were elected unopposed to represent non-corporate Members of Council'.



Left to right—SAIMM Office Bearers: Don Ross-Watt, Hannes Hoffman, Hugh Scott-Russell, John Cruise and Peter Robinson

In terms of Clause 3.2.8 of the Constitution, the Chairmen of the Branches are as follows:

Johannesburg: K.A. van Gessel; Pretoria: Prof. R.F. Sandenbergh; Orange Free State: To be advised; Vaal Triangle: A.M.L. de Sousa; Eastern Transvaal: P. Gericke; Western Cape: To be advised; North-western Transvaal: To be advised. These Chairmen will serve on Council.

The following Past Presidents have signified their willingness to serve on Council for the ensuing year:

P.W.J. van Rensburg, Prof. R.P. Plewman, Dr R.E. Robinson, Dr P.R. Jochens, G.Y. Nisbet, Prof. A.N. Brown, H.E. James, Dr H. Wagner, B.C. Alberts, C.E. Fivaz, Dr O. K.H. Steffen, H.G. Mosenthal, R.D. Beck.

I would like to record our thanks to Past Presidents for their continued support. I congratulate all those elected, and I thank those who have agreed to serve another term of office.

APPOINTMENT OF AUDITORS AND HONORARY LEGAL ADVISERS

President: I propose that Messrs Aiken & Peat be re-appointed as auditors for the coming year, and that Messrs van Hulsteyn, Duthie & Saner be re-appointed as Honorary Legal Advisors. Agreed.

INDUCTION OF PRESIDENT

President: It is my pleasant duty to introduce your new President, Dr H. Scott-Russell. I will read you his CV.

Hugh Scott-Russell was born in Randfontein on 13th February, 1935. He obtained his matriculation certificate at Pretoria Boys' High in 1953, and joined the Land and Agriculture Bank in Pretoria in 1954. Hugh spent 1956 at the University of the Witwatersrand but, owing to a lack of funds, decided to seek a career in the mining industry. He joined Randfontein Estate in December of that year as a Geological Assistant. He then worked as a Sampler, Surveyor, and Shift Boss. In 1963 he obtained his Mine Overseers Certificate and was transferred to Consolidated Murchison during the same year. In 1966 Hugh was transferred to Western Areas Gold Mine, where he obtained his Manager's Certificate in 1968, being promoted to Elsburg Gold Mine as a Section Manager that same year. During the period 1968 to 1971, he was promoted to Dumangan Mining and moved to head office as a Technical Assistant in the Platinum Division. In 1972 he was transferred back to Western Areas as Manager, Mining, and was promoted to Acting Mine Manager just prior to being promoted to Rustenburg Platinum Mines, Rustenburg Section, as Mine Manager in 1974.

It was during his stay at RPM-R that Hugh changed the stoping method from the herringbone handgot system to longwall scrape and mining. In 1976 he was transferred to head office as Consulting Engineer in charge of the Platinum Division, and he is particularly proud of the fact that he and Bill Nairn re-started Amandelbult Platinum Mine during 1976 and produced 200 000 tonnes per month in a record time!

On 1st October, 1980, he was appointed Managing Director of the Technical Services Division and became an Executive Director of JCI in 1982, the position he currently holds.

Through part- and full-time study, Hugh qualified for an Executive Development Programme at Wits Business



Barbara and Hugh Scott-Russell

School in 1973 and Advanced Executive Development Programme from UNISA in 1978, a Management Development Programme from Inset Fontainebleau, France, in 1981, an M.Sc. in Mining Engineering from the University of the Witwatersrand in 1987, and a Ph.D. from Nottingham University in 1989.

Hugh is a registered Chartered Engineer, a Fellow of the Institution of Mining and Metallurgy of the UK, a Fellow of the SA Institute of Mining and Metallurgy, and a Fellow of the Institution of Mining Engineering of the UK, and was recently invited to Honorary Membership of the South Wales Institute of Engineers in Cardiff. He is the author and co-author of 19 published technical papers.

Hugh has played various sports and enjoyed rugby in his youth, playing for Transvaal Kwaggas and being awarded his Transvaal rugby colours in 1958. His main sporting interest now is golf.

Hugh married Barbara Gillian Powell in 1963, and they have four children—three girls and a boy: Leanne, B.Sc. Pharmacy, is married and produced the first grandchild; Dale, B.Sc. Physiotherapy, and Beth are also married; Hugh Junior, B.Sc. Mechanical Engineering, is currently working at Rustenburg Refiners.

Hugh is proud that he has worked for JCI for 37 years, and his family has over 105 years of family service on record.

Incoming President: I thank Hannes very much for those kind words of introduction.

I would like to congratulate you, Hannes, on completing a very fine year as President of this great Institute. To remind

you of the many happy days and nights you were away from home, spending time travelling from Middelburg to all sorts of destinations in South Africa, I hand you this plaque as a memento of your time in office.

It is indeed an honour, for both my company and myself, to be elected as President for the ensuing year. It is an honour that I greatly appreciate, and I assure you that I shall endeavour to carry out the duties of President in a manner that will maintain the high standards set by my predecessors. As every one of you is aware, the office of President carries with it the task of preparing and delivering a Presidential speech or address. In my case, the choice was easy—I have always been interested in productivity improvement and the use of technology to achieve better efficiencies, which explains my choice of topic for my address.

PRESIDENTIAL ADDRESS

Dr Scott-Russell then presented his Presidential Address entitled 'Technical development—a survival strategy towards mining in the year 2000', which is reproduced later in this *Journal*.

Mr Cruise: Dr Hugh Scott-Russell is a big man. In fact, he is a giant of a man, both in physical size and in the niche he has carved for himself in the South African mining industry. A decade ago a decision was taken by the Gold Division of JCI that trackless mechanized mining was the way to go in their gold mines. It fell to the Technical Services Division of JCI to implement this radical change, and it was as head of the Technical Services Division that Dr Hugh Scott-Russell assumed responsibility to ensure not only that trackless mechanized mining was implemented, but that it worked. How many great ideas, for the betterment of our mining industry, have floundered at the implementation stage—the victim of the inertia of the sleeping giant that is our mining industry, the inertia that we call 'resistance to change'? It sometimes takes a giant to tackle a giant. This was not a job for the faint-hearted. It is not easy to push a new idea. The first sign of difficulty is the excuse that it won't work, and the natural tendency is to revert to what has been tried and tested. It is all too easy to sit back and say, 'Hensa fanigalo isolo'—'Do it as we did it yesterday'. His was not a job designed to win popularity stakes. To keep people to the task at hand, in order to get through the learning curve as quickly as possible, requires discipline and perseverance—both strong qualities of Dr Scott-Russell.

I would like to recall two anecdotes, one of which is true and the other pure fiction, to illustrate the early days in the implementation of trackless mechanized mining.

I had the pleasure of visiting the Westonaria Gold Mine and was taken underground by a somewhat apprehensive Section Manager. When I asked him what was troubling him, he said, 'Mr Scott-Russell (you can see how long ago that was) is coming to my section tomorrow'. I asked, 'What is he coming for?', and he replied, 'To look at the new TM3 section'. I said, 'That's great!' I had no idea what TM3 meant. 'It must be an honour to have a visit from head office, to show off to them what you are doing.' He looked at me pityingly. 'John, you obviously haven't had the pleasure of installing TM3. This is no head office show visit. This is a production visit. If you haven't achieved the required results, with Big Hugh around, a Section Manager is an endangered species'. I said, 'Really, Chopper, do you

think you will get the axe? Tell me more about this TM3'. He said I should rather go to surface and talk to Jack and the Bean Stalk.

I went to surface and spoke to an industrial engineer called Jack. 'Jack, explain this trackless mechanized stuff to me'. Jack looked at me and said, 'Have you never been to the top of the beanstalk yet? That beanstalk they call the Technical Services Division?' 'No, Jack,' I replied. Jack said, 'There is a wee giant up there and he has a motto that he keeps repeating, which contains the secret of implementing trackless mechanized mining. It goes like this: 'Fee, fi, fo, fum.' And I said, 'Yes, Jack, and if it carries on, I smell the blood of an Englishman, then he must be a wee Scotty, not so Jack?' 'Ah, you are not wrong, laddie. But to get the motto that contains the secret of successful implementation of trackless mining, fee, fi, fo, fum! Number 1—fee. You must pay your school fees. In other words, you must have done your time to ensure that you have a solid base from which to grow. The next two: fi, fo—FIFO, that is a Business School term for successful teamwork, fit in or find other employment! It is amazing how quickly resistance to change disappears when it is explained this clearly! And finally, fum—this is part of an old mining phrase which goes, 'Take your fum out of your fundamental orifice and get down to some hard work and apply your mind to the task at hand'.

Gentlemen, one is fiction, one is fact. I leave you to separate the fiction from the fact.

What these two lighthearted anecdotes bring home is a strong side of Dr Scott-Russell's character. Having accepted the challenge and responsibility of implementing trackless mechanized mining, he set about ensuring that it would be a success. He sent out very clear signals of what was expected and what had to be done. These signals were unambiguous and penetrated all levels of the hierarchy. As a result of his perseverance with TM3 over the last decade, Randfontein, a mine that is over a hundred years old and should have shut down years ago, is enjoying a new lease of life.

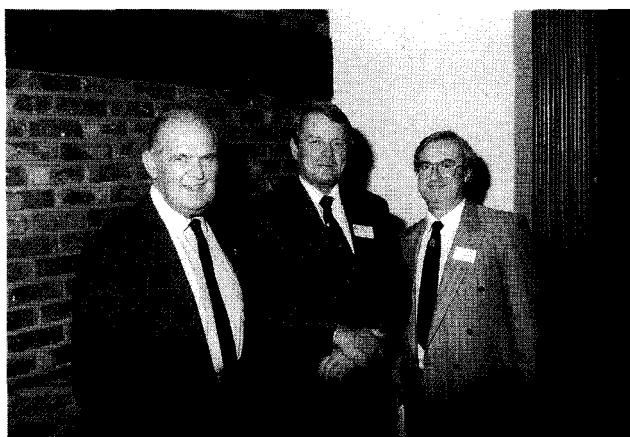
Dr Hugh Scott-Russell is not the man who invented trackless mechanized mining. He is not the man who took the decision to radically change the mining system of the JCI gold mine. That honour goes to a Past President of the Institute, Mr Nisbet. But he is the man who was responsible for implementing the decision. He is the man who persevered when many would have given up. He is the man who changed people's thinking and attitudes towards innovation. He is the man who has developed the strong team of mining men who are currently JCI.

I can now say, without fear of contradiction, that our Incoming President, Dr Hugh Scott-Russell, will go down in mining lore as a man who has earned the title 'Mr Trackless Mechanized Mining'.

CLOSURE

The meeting closed, and those present joined the Office Bearers and Council for refreshments.

At the cocktail party...



Left to right—Pieter van Rensburg (Honorary Life Fellow), Graham Tregoning and Piet van Schaardenburgh



Left to right—Ken and Merryn Owen, and Dee and Roy Marcus



Left to right—Phil Piper, Barry Love, Hendrik Kirsten and Collin Hey