

Annual General Meeting of the Institute

The Annual General Meeting of the South African Institute of Mining and Metallurgy was held in Kelvin House on Wednesday, 22nd August, 1979.

Dr M. G. Atmore (President) was in the chair and declared the meeting open at 16h00.

Obituaries

President: It is my sad duty to announce the death of the following Members of the Institute: Brigadier R. S. G. Stokes, Honorary Life Fellow and Past President; J. A. Arthur, C. L. Cartwright, R. B. Greaves, A. A. Haynes, G. Ross, M. W. Richards, W. T. Stobart, E. Veres, G. V. White, and A. G. Williams, Life Fellows; A. J. H. Pole, D. T. McMurray, P. G. O. Pretorius, A. E. D. Rubidge, A. M. Seccombe, and R. R. Uren, Fellows; R. E. Oltman, R. B. Richardson, and G. P. Rundle, Members; S. F. Dench and S. van Wyk, Associates.

As a mark of respect to the memory of the deceased, and in sympathy with the bereaved, please rise and observe a few moments' silence.

Minutes

President: May we confirm the minutes of our last Annual General Meeting, which was held on 23rd August, 1978, as published in the November issue of the *Journal*? Agreed.

Welcome

President: I extend a hearty welcome to all of you, whom we are very happy to have with us, and especially to the following distinguished guests: Senator Chief, the Honourable K. Ndiweni, Minister of Mines, of Zimbabwe-Rhodesia; Mr Cawood, who is Secretary of that department in Zimbabwe-Rhodesia; Mr D. E. Etheredge, President of the Chamber of Mines, and Mrs Etheredge; Mr J. G. Kirchner, the newly appointed Government Mining Engineer (and therefore, one of our Honorary Vice-Presidents) and Mrs Kirchner; Mr Neville Orsmond, very recently retired Government Mining Engineer, and Mrs Orsmond; Mr D. N. Stuart, General Manager of the Chamber of Mines, and Mrs Stuart; Professor B. W. MacKenzie, who is our Institute's representative in Canada; Dr Louw Alberts, President of the National Institute for Metallurgy, and Mrs Alberts; and the representatives of other Institutes, and their wives.

Membership

President: The names of the candidates who have been elected to Membership since the last Annual General Meeting are included in the Annual Report. I welcome these newly elected Members to the Institute, and congratulate those who have been transferred to a higher grade.

Past Presidents

President: Some years ago it was decided that a small presentation should be made to the outgoing President to commemorate his year of office. The presentation would take the form of a plaque with the Institute's crest on it.

For some reason, which is not altogether clear, this was not done consistently, and we would like to ensure that everybody who had been a President would receive one of these plaques.

We have therefore ordered a substantial stock of plaques but would, in the meantime, like to present the three plaques that we have to three Past Presidents of long standing, all of whom have contributed greatly, and still contribute, to the affairs of the Institute: Henry Britten, who was President in 1955-1956, Dick Adamson 1959-1960, and Denis Maxwell 1961-1962.

Honorary Life Fellows

President: Your Council decided to confer Honorary Life Fellowship on two of its Past Presidents, who remain loyal and very hard-working members of our Council: Dr J. P. Hugo, President in 1972-1973, and Mr P. W. J. van Rensburg, President in 1973-1974.

Medal Awards

President: As you know, the medal awards are given for outstanding papers presented to the Institute, or published in the *Journal*, or both. This year has been outstanding in this connection, and we decided to award two Gold Medals and one Silver Medal.

The Gold Medals are awarded to Dr A. K. Haines for his paper 'The Development of Continuous Fluidized-bed Ion Exchange in South Africa, and its Use in the Recovery of Uranium', and to Dr P. J. D. Lloyd for his paper 'An Integrated Mining and Extraction System for Use on Witwatersrand Mines'.

Dr Haines's contribution to the development of the process described in his paper, and to its success on a pilot plant and a larger-scale demonstration plant, was very considerable, and the value of the work is demonstrated by the fact that the process has been successfully incorporated on large-scale plants.

The quality of his paper is as high as the quality of the work that went into it, and he has given much thought to problems of a practical nature, such as the engineering of the system, how it can be adapted to fit into existing plants, and its future development.

Dr Haines is now an Assistant Consulting Metallurgist in General Mining and Finance Corporation Limited, but the work on which this paper was based was done while he was on the staff of the National Institute for Metallurgy.

Dr Lloyd's paper, which is again of the highest standard, shows great vision and an ability to view a



Left to right are Dr D. G. Krige, winner of a Silver Medal for his paper 'Longterm trends in domestic metal prices under conditions of differential inflation rates and unstable currency exchange rates'; Dr P. J. D. Lloyd, winner of a Gold Medal for his paper entitled 'An integrated mining and extraction system for use on Witwatersrand mines'; and Dr A. K. Haines winner of a Gold Medal for his paper 'The development of continuous fluidized-bed ion exchange in South Africa, and its use in the recovery of uranium'



The two student prize-winners are R. P. Gould, winner of one of the prizes for mining, and Mrs D. Hall (formerly Miss D. Wiggill), winner of one of the metallurgical prizes

long-standing problem from an unusual angle. The possibility of undertaking a significant portion of the gold-recovery process underground, to produce a discardable waste that would not have to be hoisted to surface, is of considerable importance. It is our hope that the ideas expressed in his paper will, in the not too-distant future, find fulfilment on a large scale in one of our deep-level mines. It may be of interest to you to know that both the Mining and the Metallurgical Award Selection Committees of the Institute recommended the award of a Gold Medal for this paper.

Dr Lloyd is Head of the Metallurgical Laboratory of the Chamber of Mines.

The Silver Medal is awarded to Dr D. G. Krige for his paper on 'Long-term Trends in Domestic Metal Prices under International Conditions of Differential Inflation Rates and Unstable Currency Exchange Rates'. This very elegant paper attacks an extremely difficult problem, with all the effectiveness that we have come to associate with the work of Danie Krige. It is another example of his particular skill in applying theory to the real world.

Dr Krige has for some time published regularly, on a number of topics, not least of which is mining economics. He continues to do so, and we look forward to considering his newer papers in the Awards' Committee, next year.

You will know that Dr Krige is already a Gold Medal winner of this Institute. Not only is he Group Financial Engineer of Anglo Vaal, but within a very few moments he will become Honorary Treasurer of this Institute. With his Silver and Gold Medals, and this post, we very much hope that his Midas touch will persist.

Student Prizes

President: These prizes are awarded for outstanding student papers in the fields of mining and metallurgy. This year we are awarding four prizes: two to students of the University of Pretoria and two to students of the University of the Witwatersrand. The mining prizes go to R. P. Gould and A. W. de Villiers, and the metallurgical prizes to M. Cortie and Mrs D. Hall.

It gives me great pleasure to announce these awards and to offer special congratulations to Mrs Hall, who has done very well in her metallurgical studies, being the first South African woman to graduate in this branch of engineering.

Annual Report and Accounts

President: In presenting the Annual Report and Accounts for the year ended 30th June, 1979, I should like to mention some specific points. In general, we had a good year as an Institute, and, as always, this was the result of happy circumstances and the extremely hard work contributed by a number of people.

Much of the continued success, though, has been based upon steady progress in fields in which we have set the pattern in previous years. Two of these — the organization of colloquia and vacation schools — continued to expand very substantially. To underline this point, I might mention that 306 delegates attended our most

recent colloquium on exploration, feasibility studies and investment analysis, which we held at NIM. This is by far the largest colloquium we have ever had. When one recalls the dispirited and very badly attended monthly meetings, which we abandoned some years ago, it is certain that, at least in this area of activity, we are pointing in the right direction.

Our next effort in this field of colloquia is to be held at Witbank in conjunction with the South African Coal Processing Society, on 3rd and 4th October. This promises to be an outstanding success, and the Witbank Branch has done stalwart work in helping to organize it. We have received more than 300 applications for this symposium, and I am informed that there are only 170 hotel beds available.

Real progress is now being made on our monograph series. We regard this as a service that we should provide as long as we can maintain the high quality achieved in our first publications. It is not intended that the monographs should be viewed as contributing substantially to the net income of the Institute. By the same token, it is not intended that they should be a heavy drain on the Institute's finances.

The initial planning for the 12th Congress of the Council of Mining and Metallurgical Institutions, which will be held in May 1982 in South Africa, with the Geological Society of South Africa and our Institute as hosts, is getting under way. Considerable support is being received from the Chamber of Mines and from the Government, and this is gratefully acknowledged. We are grateful for the offers of help we have received from professional institutions, and members of the mining and metallurgical industries in other Southern African countries. We are particularly pleased with these offers from outside the Republic since it is the intention that the Congress should be a Southern African effort.

As indicated in the Annual Report, a Standing Congress Committee has been established, and the Geological Society has agreed to serve on it. The Institute is fortunate in having the help of Mr C. MacPhail, who has been appointed Congress Manager.

Among the names read out under the obituaries was the name of Brigadier R. S. G. Stokes, Honorary Life Fellow and Past President of this Institute, who died recently at the age of 96, having joined the Institute as a Corporate Member in 1904. It was felt that an attempt should be made to commemorate the contribution of Brigadier R. S. G. Stokes, not only to the Institute, but to the South African mining industry and even further afield, and it was therefore decided to institute a Stokes Memorial Award of this Institute. All the mining groups with which he was associated have offered enthusiastic support, and the details of the form that the memorial will take are being finalized. It will probably become the prestige award of this Institute.

Like all my predecessors, I have relied heavily on the help and co-operation of members of Council, and of our secretary and her assistants, and, last but not least, of the A.S. and T.S. management. My very sincere thanks to all who helped the Institute, and me personally. I shall mention only two people by name, but this should not detract from the efforts of the others. First, there is

Linda van Niekerk, who took over as Secretary in 1978 and has done an outstanding job. She is a very real asset to this Institute. The other is Keith Douglas, who for five sterling years has been our Honorary Treasurer, and whose steady hand and wise advice have contributed materially to the healthy financial position of the Institute.

I now call upon Mr Douglas to second the adoption of the financial report and accounts.

Mr Douglas: It is my privilege, as Honorary Treasurer, to second the motion for the adoption of the annual report and accounts, and in doing so, I will take the opportunity of saying a few words about our finances.

It is always with a sigh of relief that the Treasurer can report that income has exceeded expenditure, and I am pleased to tell you that this happened again this year. We had a surplus of R8517. This was made up of a surplus of R28 235 from the vacation schools and colloquia, a deficit of R16 908 on general account, and a deficit of R2810 on the monograph series.

The surplus from the vacation schools was most gratifying in that it reflects the popularity and excellence of these functions. The fees for these functions are very moderate indeed in relation to what is provided, and the surplus arises only from the fact that attendances again exceeded budgeted expectations. Similarly, the colloquia were very well supported.

The contribution made by these functions was very important indeed this year, since it off-set the substantial deficit on general account, which occurred mainly due to losses on the *Journal*. Printing costs have increased substantially over the past year, and, of course, we have very little control over this. The other factor was a substantial reduction in advertising revenue compared with the previous year. I am pleased to report, however, that the remedial action taken by Council appears to be reversing this trend. A new advertising agent has been appointed, and he has made several recommendations. Among them, as I am sure you have all noticed, is a new look for the *Journal*. Early indications are that the advertising revenue is improving as a result of these changes.

A disturbing feature of our accounts is that the net costs of operating the Institute, excluding extraneous activities such as vacation schools, increased from R75 630 to R96 039—an increase of 27 per cent. Without these extra activities, a substantial increase in subscription fees would have been necessary to offset this deficit. Fortunately, we obtained the surpluses from these other activities. But I must warn that an increase in subscriptions cannot be postponed indefinitely if cost inflation continues at the present rate.

Sales and costs of the monograph series were in line with the budget. The net deficit to date on this account is R12 202, but, as I pointed out in the report, a conservative financial policy was adopted and only a nominal value was assigned to the books in stock. Sales of these books would go a long way to correcting this deficit.

The interest generated by the Education Fund was usefully employed in various activities embarked upon by the Education Committee. This fund was augmented

by a welcome contribution of R7893 from the Electra Mining Exhibition, which was held at Milner Park. As you know, Council organized a colloquium at Milner Park to coincide with this exhibition, and the organizers made this contribution to the Institute in recognition of this.

The Education Fund at the year-end stands at R96 255.

The MacArthur Forrest Fund provided R1550 in student prizes this year, and attention was drawn in the report to the need to build up this fund so that it can provide meaningful prizes. In the past, some of the prizes have been very small, and we have increased the size of these.

In conclusion, the financial position is healthy, but inflationary trends will have to be carefully watched if we are to avoid eroding the capital we have built up.

I would like to thank you, Mr President, for your assistance and support over the past year, and to congratulate you on a very successful year of office. I would also like to thank Mr Trueman, our accountant, and Linda van Niekerk and her hard-working staff.

I now formally second your motion, Mr President, for the adoption of the annual report and accounts.

President: Thank you, Mr Douglas. May I take it that the Annual Report and Accounts are adopted? Agreed.

Office Bearers and Members of Council for 1979-1980

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

President: D. A. Viljoen.

Vice-Presidents: P. R. Jochens and G. Y. Nisbet.

Honorary Treasurer: D. G. Krige.

Immediate Past President: Dr M. G. Atmore.

In terms of the election of the Ordinary Members of Council, there is a letter from the scrutineers saying, 'We have to report that we have inspected the nomination papers for members of Council for the 1979-1980 session, and have found that the ballot papers sent to Corporate Members of the Institute were in order. There was a return of 492 papers, representing a 37,9 per centage ballot.

'As a result of our scrutiny, we find that the following members have been elected: J. D. Austin, A. N. Brown, C. E. Fivaz, R. P. King, F. Q. P. Leiding, D. G. Malan, J. C. Mostert, H. G. M. Rose, G. C. Thompson, and H. Wagner.'

In terms of Clause 3.2.8 of the Constitution, Mr R. S. Smith in his capacity as Chairman of the Witbank-Middelburg branch will serve on Council. Under the same clause, Mr W. C. Mather, Chairman of the O.F.S.-Klerksdorp branch, will also serve on Council.

The following Past Presidents have signified their willingness to serve on Council for the ensuing year: H. Britten, R. J. Adamson, J. K. E. Douglas, D. G. Maxwell, D. D. Howat, J. P. Hugo, P. W. J. van Rensburg, R. P. Plewman, R. E. Robinson, M. D. G. Salamon, and P. A. von Wielligh.

Induction of President

President: It is my very sincere pleasure to introduce Dave Viljoen to you as your Incoming President, and at the same time give you just a little background about his achievements and the qualities that will make him an excellent leader of your affairs for the next year.

Dave is among the best-known people in the metallurgical industry in this country, and one is therefore tempted to assume that everybody knows all about him. This, in the very long-term, can sometimes have unfortunate results, as illustrated by the account given of Brigadier Stokes when he was inducted as President. When we heard of Brigadier Stokes's death and we wanted to put an obituary in the *Journal*, the place we first went to for information about him was to the *Journal* recording the proceedings of the Annual General Meeting of 1937, and this is what we found:

'Statement by the President: There was no need to go into details, because the President was quite sure that Dr Stokes needed no introduction.'

Here then is something in the interests of posterity for Dave.

Dave was born in Burgersdorp in 1926, and went to school at Queen's College, Queenstown. From there he went to Rhodes, for a very short time, and then joined the South African Air Force to become a pilot.

In order to see some action towards the end of the war, there being some doubt as to whether his pilot's training would be completed in time to allow him to do this, he opted to become a wireless operator-air-gunner instead, which he did, and qualified with some success.

After the war, he went back to Rhodes, where he graduated with a Bachelor of Commerce degree. Up to now, he had been very much a Cape boy, but while at Rhodes he met Elizabeth, very much a Transvaal girl, and made his first wise, important decision, which was that, in due course, he would talk her into marrying him — and he's quite a talker. She agreed in November 1954.

After graduating, Dave joined the Secretarial Department of East Geduld. Not long afterwards, he made what was perhaps the second important, wise decision of his life, and transferred to the Reduction Works. We believe that he was inspired to join the elevated profession of metallurgy by a passing interest in leather chemistry, but we're not quite sure about that.

He was accepted by Dr Jackson, who was then in charge of Union Corporation's metallurgical affairs, and he worked his way up, on Union Corporation Group mines, for 19 years, and ended as a Reduction Manager in the Free State.

In 1968, he joined Gold Fields of South Africa, as an Assistant Consulting Metallurgist at head office. In 1974 he was promoted to Consulting Metallurgist, and in 1977 to Chief Consulting Metallurgist.

Dave is a Professional Engineer, and in this connection has given considerable help to a number of other people, not only in his group, but within the industry, by encouraging and advising them in the development of their careers. His own background, which is unusual in a technical man, has contributed materially towards the help he has been able to give.

The same background has also been skilfully used in

many projects, often of considerable size, in which cost-effectiveness has been of prime importance. Recent examples in which Dave's contribution has been very considerable include zinc smelting, at a tin smelter at Rooiberg, and at a lead smelter at Black Mountain.

Dave and Elizabeth have four children: Stephen, Paula, Gillian, and Richard. It was Stephen, the eldest, who, because of his involvement in the adventure club when he was at school, got Dave interested in mountaineering. And, this has since become a great passion of his. It has to be — it's a continuing passion, because his youngest son, Richard, is now at the same school, in the same adventure club, and he goes mountaineering with Dave. So there's no way out of it. He has to be a mountaineer.

He is also a fisherman, but, like many of the less exotic chaps in this area, he is a sea-fisherman, and that does not give him much opportunity at the moment.

Finally, he keeps very fit, as you can see, and this is brought about by two things: first, a clear conscience, and, secondly, an early-morning run of five kilometres before he arrives in the office at 6 a.m. each day. There is absolutely no accounting for taste!

Dave is an outstanding person, who has the support of an outstanding family. The dedication he shows in all he does, and the extraordinary efforts he has made for the Institute, not least as Senior Vice-President this past year in helping me greatly, give me a feeling of confidence that the affairs of the Institute will be in very capable hands.

President Elect: Dr Atmore, honoured guests, ladies and gentlemen. On the many occasions that I have been present at annual general meetings of our Institute, I have been conscious of the considerable impact of this part of our proceedings. In common with the 82 presidents who have preceded me since 1894, I am aware of the high honour and the responsibility associated with my appointment.

Die verantwoordelikheid van ons instituut groei jaarliks. Hierdie vooruitgang bevoordeel nie alleenlik lede nie, maar strek tot voordeel van ons gemeenskap in sy geheel, deur 'n belangrike skakel te vorm tussen die industrie en die universiteite. Terseldertyd dien die instituut as forum vir die verwisseling van tegniese informasie, binnelands sowel as buitelands, en dra derhalwe by tot die ontwikkeling van nuwe kennis wat noodsaaklik sal wees vir die toekoms.

Hierdie funksie, onder andere, se belangrikheid vergroot jaar na jaar, en ek sal daarna strewende om die belange van ons genootskap te behartig, in ooreenstemming met die streng tradisies van die verlede.

Dr Atmore, thank you for the kind things you said about me. Our Institute has been fortunate, indeed, in having had the benefit of your wise counsel over a number of years, particularly during your year as President. Your decisive leadership, combined with an ever-present sense of humour, have brightened the many hours we have spent in the confines of the Council Chamber, and have had an important bearing on your impressive achievements during your year of office.

As Past President, Kim will continue to play a leading role in the management of our affairs. He has under-



Left to right are Dr P. R. Jochens (Senior Vice-President), Mr D. A. Viljoen (President), Miss L. van Niekerk (Secretary), and Mr G. Y. Nisbet (Junior Vice-President)

taken the considerable task of heading the 1982 Congress Steering Committee, and we shall continue to benefit from his wide experience in other areas.

To have Peter Jochens and George Nisbet as Vice-Presidents, will certainly make my task easier. In managing the affairs of the Metallurgical Technical Programme and Vacation School Committees over a number of years, Peter has shown his capacity for hard work and dedication. George's considerable talents are going to be of great value in our planning for the 1982 Congress, which is going to demand his substantial involvement during his Presidential year.

We are deeply indebted to Keith Douglas for guiding our financial affairs during his five years as Honorary Treasurer. Our sound financial position can be attributed to his management. Keith has asked to be relieved of his duties as Honorary Treasurer, and will be replaced by Danie Krige. We are all waiting to see the results of Danie's application of his ore-evaluation statistical procedures to the financial arrangements of the Institute.

We are very fortunate in having with us this year a number of Past Presidents who will continue to participate in the affairs of Council. The wisdom and experience of these long-serving members of Council are important aids in our decision-making process. We thank them for their continued interest in the affairs of our Institute, which they have served with such distinction.

My congratulations to the eight members of our previous Council who have been re-elected, and to Messrs Fivaz and Wagner, the newly elected members of Council. These ten talented people are well equipped to deal with the considerable spectrum of our Institute's challenge.

The dedication of our Ordinary Members of Council to the growing demands of our Institute will continue to be the strength upon which our progress is based.

The success, in recent years, of the biannual Mining and Metallurgical Colloquia has brought with it a substantial increase in the number of technical papers for publication in the *Journal*. Dr Helen Glen, the Honorary Editor, has taken this additional workload in her stride, and we are indeed fortunate to have our technical editing in her competent hands.

In spite of the many, and varied, tasks that Eric Boden is called upon to administer for numerous Kelvin House-based societies, he manages to find time to keep abreast with our affairs and requirements. We must congratulate you, Eric, for putting together the competent, hard-working, as well as charming and friendly, group of secretaries who manage our affairs. Linda van Niekerk's complete grasp of the intricacies of our affairs and requirements in the short time she has been with us, I find most remarkable. Together with Wilma, Sherryl and Alice, she forms a dedicated team, which is so essential to the processing of our many and varied objectives.

I thank June Boydell for the role she has played in launching the monograph series, as well as for her competent handling of a variety of matters concerned with the *Journal*.

I now ask Dr Jochens, as Senior Vice-President, to take his place on my right, and Mr Nisbet to join us on the rostrum.

Mr Nisbet: Mr President, honoured guests, ladies and gentlemen. As the newly elected Junior Vice-President, it is my privilege and, in fact, my duty first to offer

the congratulations of Dr Jochens and myself to our new President, Mr Viljoen, and to wish him a deservedly successful year in office; secondly, to express our sincere thanks and appreciation to Members for the honour they have accorded us in electing us to our respective offices.

Dr Jochens has had very considerable experience in the affairs of the Institute, and has proved his ability and diligence as a Vice-President. I am the newcomer, and assure you, Mr President, that I shall endeavour to maintain the high standards set by my predecessors.

Mr Fivaz: Mr President, honoured guests, ladies and gentlemen, on behalf of the newly elected Members of Council and, more specifically, as a newly-elected Member, I should like to assure you of our loyalty and support in the year that lies ahead. And also, to the members of the Institute who have shown the confidence in us to elect us, we say thank you.

Appointment of Auditors and Honorary Legal Advisers

President Elect: I propose that Messrs Alex, Aiken and Carter be appointed auditors, and Messrs Van Hulsteyn, Duthie and Saner be appointed legal advisers to the Institute for the coming year. Agreed.

General Business

President Elect: Seeing that there is nothing that members wish to raise under this heading, I ask Dr Jochens to take the chair while I deliver my address.

Presidential Address

Mr Viljoen delivered his Presidential Address, entitled 'Minerals from the dawn of mankind to the twenty-first century'.



Mr D. A. Viljoen delivers his Presidential Address

Vote of Thanks

Dr Jochens: It has always amazed me that, year after year over three-quarters of a century, newly elected Presidents of this Institute have had the ability to select topics for their presidential addresses that are both stimulating and interesting to a very wide spectrum of our members. We are particularly indebted to Mr Dave Viljoen for a quite original approach to the analysis of the important role that metals have played in the past, and are likely to have in the future.

He focused careful attention on the benefit of the availability of metals on the quality of life through the ages, and, particularly, the requirements that will have to be met in the future to ensure a continued supply of metals.

It now gives me great pleasure to call on Mr A. N. Brown, to propose the formal vote of thanks to the President.

Mr Brown: The highlight of the Annual General Meeting is undoubtedly the Presidential Address, and we have come to look forward to receiving something special from the man who is to guide the destiny of the Institute through the coming year.

We have, this afternoon, indeed been given something special by Dave Viljoen, and it is a great pleasure for me to propose the formal vote of thanks.

We have listened with keen interest to an address that is clearly the result of a great deal of research and painstaking preparation. It was wide in its scope, it contained much food for thought, and it was delivered in a very commendable manner.

We have, in a sense, been taken on a conducted tour, which began in the mists of antiquity. It dwelt on matters in the contemporary scene, and it ended with a bold vision of the future. I would suggest that these glimpses into the future merit our careful attention, for they have been made by one who is highly respected, and well qualified, in the field of metallurgy.

My colleagues and I at Gold Fields are very well acquainted with Dave Viljoen's diligent and thorough approach to problems. My colleagues on Council have also come to know him as a conscientious worker with a forthright manner, who has made a very significant contribution to the progress of this Institute. He is a busy man, whose time is at a premium, and we are indeed fortunate that he is willing to devote so much of his time to our affairs.

In his address, Mr Viljoen highlighted many important problems that affect the future of the minerals industry, both in this country and in the rest of the world, and there are two that I would like to underline.

The first concerns manpower.

The development of this country over the years, and the present strong position it enjoys in the Free World, would not have been possible without the exploitation of its mineral wealth. Its future development is also very heavily dependent on the way its mineral industry expands.

A key factor is the need for adequate numbers of capable people, who are properly educated and well trained. It is a cause of great concern that the minerals

industry has not succeeded in attracting adequate numbers of the right people into its ranks.

The problem of manpower shortage is not new. Indeed, it is the one common thread that runs through the Presidential Addresses presented to this Institute over the past decade or more.

It is far more favourable, and profitable, to export refined metal, rather than ore concentrates. Stainless steel, rather than chrome ore, or rails to Taiwan rather than iron ore. Without people, development is inhibited, and there is a strong tendency towards the exportation of primary ores, where the profit margins are seriously eroded by freight, transport, and other costs.

Mr Viljoen has offered useful suggestions, which must be followed up. The Professional Engineers' Act, it is hoped, will lead to better training, an improved image, and increased rewards, which should help to make the engineering professions more attractive. It is also hoped that the Goode Commission will, in time, bring order to the field of technical education, so that we will be able to use our manpower resources more effectively.

A great deal of time, effort, and money, has been spent, and is still being spent, in the endeavour to recruit and attract young people to the minerals industry. It may be that the time has come for all the people concerned to sit down and analyse the problem, and co-ordinate the industry's widespread and diverse efforts.

The second point concerns finance.

In recent times, the inflationary spiral and the economic upheaval have placed a different perspective on the development of our minerals industry. South Africa is

still considered to possess a most favourable investment potential. However, the discriminatory taxes on mining, mentioned in the address calls for careful rethinking by Treasury.

It is imperative that future investment in the minerals industry should be encouraged and that the investor's risk in launching new mining ventures should be balanced in the light of the high interest rates and the frightening size of the capital requirements.

Dave Viljoen tonight joins a long list of very distinguished men who preceded him as President of our Institute, and I have no doubt that he will fill that position with distinction and purpose. On your behalf, I propose a sincere vote of thanks to our new President for his very fine address, and I wish him well in the year that lies ahead.

Dr Jochens: Thank you, Mr Brown, for your thought-provoking comments, which will be published in the *Journal*, together with the President's Address. Indeed, not only have you proposed an elegant vote of thanks, but you have contributed to the address by highlighting specific important aspects and supplying additional relevant information.

Conclusion

President Elect: I thank members, guests, and friends for their attendance here this evening, and for their patience. I declare the meeting closed.

The meeting ended at 17h45.

MMIJ—AIME

The Fourth Joint Meeting of the Mining and Metallurgical Institute of Japan and the American Institute of Mining, Metallurgical, and Petroleum Engineers is to be held in Tokyo from 4th to 8th November, 1980.

The following topics will be discussed:

Geology and Exploration

Energy Resources — Geological, Geochemical, and Geophysical Exploration of Mineral Deposits — Application of Geoscience to Mineral Exploration.

Mining

Newly Developed Mines — Strata Control — Open-pit Mining — Underground Mining — Blasting — Environmental Control — Mine Safety.

Mineral Processing

Comminution and Sizing — Separation — Application of Mineral Processing and Coal Preparation Techniques to Other Fields — Plant Practice.

Metallurgy

Copper — Lead and Zinc — Nickel and Cobalt — Environmental Control — Energy Conservation — Miscellaneous Subjects.

Others

Development of Marine Resources — Environmental Control — Application of Computers — In-place Leaching — Energy Conservation.

Enquiries should be directed to The Mining and Metallurgical Institute of Japan, 5-4 Ginza 8-chome, Chuo-ku, Tokyo 104, Japan.

Annual Report and Accounts

FOR THE YEAR ENDED 30TH JUNE, 1979

Council and Standing Committees, 1978-1979

President: Dr M. G. Atmore.

Vice-Presidents: D. A. Viljoen and Dr P. R. Jochens.

Honorary Treasurer: J. K. E. Douglas.

Immediate Past President: P. A. von Wielligh.

Members of Council: J. D. Austin, A. N. Brown, H. E. James, Prof. R. P. King, Dr D. G. Krige, Prof. F. Q. P. Leiding, D. G. Malan, C. S. McPhail, J. C. Mostert, G. Y. Nisbet, H. G. M. Rose, W. T. Ruhmer, G. C. Thompson, R. A. von Maltitz.

Chairman, Witbank-Middelburg Branch: T. S. Wilmot.

Chairman, Orange Free State-Klerksdorp Branch: H. M. W. Eschenburg.

Past Presidents Serving on Council: R. J. Adamson, H. Britten, J. K. E. Douglas, Prof. D. D. Howat, Dr J. P. Hugo, D. G. Maxwell, Prof. R. P. Plewman, Dr R. E. Robinson, Dr M. D. G. Salamon, P. W. J. van Rensburg.

Standing Committee Chairmen: Membership, Dr P. R. Jochens; Technical Programme — Metallurgy, Prof. R. P. King; Technical Programme — Mining, H. G. M. Rose; Vacation School — Metallurgy, J. C. Mostert; Vacation School — Mining, D. G. Malan/J. D. Austin; Awards, P. A. von Wielligh; Excursions, D. A. Viljoen; Adjudication, P. A. von Wielligh; Constitution, Rules and Policy, P. A. von Wielligh; Monograph Series, Dr R. E. Robinson; Professional and Technician Training Committee, Dr M. D. G. Salamon; Career Guidance, D. G. Malan; Phoenix National Committee, Dr R. E. Robinson; 1982 World Congress, Dr M. G. Atmore; Witbank Coal Colloquium, Dr P. R. Jochens; Mines and Works, P. A. von Wielligh.

Representatives on Other Bodies

Federation of Societies of Professional Engineers:

Representatives: D. A. Viljoen, A. N. Brown.

Alternates: Dr M. G. Atmore, Dr M. D. G. Salamon.

Federation of Societies of Professional Engineers Executive Committee:

D. A. Viljoen.

FSPE Technician and Education Liaison Committee:

R. A. von Maltitz.

FSPE Publicity Committee:

J. D. Austin.

Council of Commonwealth Mining and Metallurgical Institutions:

D. J. Rogers, G. J. Mortimer.

The Associated Scientific and Technical Societies of South Africa — Controlling Executive:

Representatives: Dr M. G. Atmore, P. A. von Wielligh.

Alternates: Dr P. R. Jochens, D. A. Viljoen.

South African Council for Professional Engineers:

Member: P. W. J. van Rensburg.

Alternate: W. T. Ruhmer.

South African Committee on Tunnelling:

Member: D. G. Malan.

Alternate: R. P. Plewman.

Engineers Liaison Committee — Pretoria:

Member: Prof. F. Q. P. Leiding.

Alternate: Dr J. P. Hugo.

World Mining Congress National Committee:

Members: Dr M. D. G. Salamon, Prof. R. P. Plewman, Prof. F. Q. P. Leiding.

Career Guidance and Recruitment

The shortage of mining engineers in the industry poses a real threat to future expansion, and the main objective of the Career Guidance Committee has been to focus attention on this aspect and to encourage students to embark on mining and metallurgical careers.

Under the wing of this committee, the Phoenix Programme has been fostered. This programme was devised to encourage interest in the mining industry by the development of activities with teachers, student teachers, and school pupils. The budget for the current year is R28 500, and the organization is now under the guidance of the Chamber of Mines, who are fortunate to have Mr Chris de Wilzem and Mr Don Walton to lead the activities. Apart from the Chamber of Mines, the main contributors to the expenses incurred in the running of various projects are Iscor, Samancor, Sentrachem, Ferro-alloys, Rio Tinto, and our own Institute.

During 1977 schools had to be cajoled into participation, but during 1978 a change in attitude was evident: all the activities designed for school pupils were oversubscribed, and it was possible to select participants of a high calibre.

The overall objective during 1979 remains the improvement of communication links between schools, universities, and the mineral industry. The current programme outlined to pursue the objective is attractive, and is definitely producing results.

We give active support to *Archimedes*, an excellent bilingual easy-to-read scientific journal that is published on a non-profit basis as a service to the youth of South Africa. Council agreed to our recommendation to donate R200 to sponsor the circulation of *Archimedes* to aspirant students undergoing army training.

The Committee is also active in the field of radio and television, with a view to broadcasting articles and documentation aimed at encouraging youngsters to embark on metallurgy and mining as a career.

A seminar on 'The Training Programmes for Mining Engineers' was held at the Witwatersrand University in September 1978, for a free exchange of views and experiences of young graduates in the mining industry. This proved worth while, but the absence of senior experienced mining engineers was unfortunate.