

selection, training, and job orientation. The important question is whether the worldwide mining activity is doing enough to attract sufficient personnel into various categories, and spending enough time to motivate this most important asset.

Rapid technological advance emphasizes the need for communication between industry and the universities. Engineering education, in which basic science and general engineering fundamentals lead to speciality courses, should be moulded to the needs of industry. Locally, a glaring omission is the lack of university-level teaching in various aspects of coal technology.

Coal mining accounts for approximately half the total

mining in the world, a ratio that is approximately true for South Africa. Coal, with hundreds of years of reserves, is emerging as the only proven long-term source of energy, and it is difficult to single out a major worldwide industry with a more certain future.

That is why I make this important plea today: the introduction of undergraduate courses embracing coal that are equal to the courses available on other metalliferous ores should be introduced without delay; in addition, facilities should be provided for specialization in the mining and beneficiation of coal both at undergraduate and post-graduate level.

Papers presented at the Witbank coal colloquium

The following papers were presented at the colloquium* on 'Mining methods and economics for improved coal extraction, and coal processing and preparation', which was held in Witbank on 3rd and 4th October, 1979.

Review of Mining Methods for Improved Extraction of Coal, by P. King, of Gold Fields of South Africa, formerly of the Chamber of Mines of South Africa.

The Application of Continuous Miners in South African Coal Mines, by J. D. Inch, Bosjesspruit Colliery, I. Brumby, South Witbank Coal Mine Ltd, J. D. Stone, Matla Coal Ltd, and C. J. Beukes, Usutu Colliers Ltd.

Longwall Mining Experience at Coalbrook Collieries, by P. G. Henderson, General Mining and Finance Corporation Limited (with a contribution by C. J. Cloete, Sigma Colliery, Sasol I).

Pillar Design in Coal Mines, by Dr H. Wagner, Chamber of Mines Research Laboratories.

Open-cast Coal Mining at Kriel Colliery, by I. Buchan, L. F. Baars, and C. S. Northcote, Anglo Power Colliery, Kriel Division (with a contribution by M. F. Fleming, General Mining Coal Division).

Richards Bay Coal Terminal, by B. Dunne, Richards Bay Coal Terminal.

Coal Preparation in South Africa — a General Review,

by D. W. Horsfall, Anglo American Corporation of South Africa Limited.

Comprehensive Performance Testing on a Routine Basis, by P. J. F. Fourie, Fuel Research Institute of South Africa.

Froth Flotation Beneficiation of Fines from Transvaal Seams, by P. Armstrong, General Mining and Finance Corporation Limited.

Coal Preparation Routes for Maximum Coal Recovery, by T. A. Claasen, Iscor, Pretoria.

Potential Value of Discard Material, by R. B. McGillivray, Rand Mines Limited.

Use of High Ash Coal in Fluidized Bed Systems, by E. A. Glaysher, Babcock and Wilcox of Africa (Operations) (Pty) Limited.

Char Tests at the Fuel Research Institute, by E. F. E. Müller, Fuel Research Institute of South Africa.

Factors Affecting the Resistivity and Reactivity of Various Carbonaceous Reductants for the Electric Smelting Industry, by H. M. Dijs and D. J. Smith, National Institute for Metallurgy.

The first six papers listed above (i.e., those dealing with the mining of coal) will appear in the January issue of this *Journal*. Anyone requiring extra copies of this issue should place an order NOW with the South African Institute of Mining and Metallurgy, P.O. Box 61019, Marshalltown 2107. The price per copy is R2,50.

*A summary of the presentations is given on pp. 489-492, and the text of the opening address appears on pp. 493-494.

Henry J. Albert Award

The International Precious Metals Institute (IPMI) announces the establishment of the Henry J. Albert Award. This award is being sponsored jointly by IPMI and the Engelhard Minerals and Chemicals Corporation as a memorial to Dr Henry J. Albert. Dr Albert served as Technical Director of Engelhard's Carteret Division and as President of IPMI at the time of his death.

The prize consists of a Palladium Medal struck in the likeness of Dr Henry J. Albert, and a certificate citing the contributions made by the recipient. The Award recognizes outstanding theoretical or experimental contributions to the metallurgy of precious metals, and will

be presented at the annual IPMI International Conference. The next International Conference is scheduled for Toronto, Canada, 3rd to 5th June, 1980.

Nominations are open to engineers and scientists of all nationalities regardless of the geographical site at which the work was done. The contribution may have been published or presented, but this is not required for consideration. Nominations should be submitted in writing to IPMI Headquarters, Polytechnic Institute of New York, 333 Jay Street, Brooklyn, New York 11201, before 1st February, 1980.

Automated and robotic welding

The demand for improved productivity, a shortage of skilled welders, more stringent health and safety requirements, developments in control systems, and the advent of the welding robot are factors that have contributed to the growth in mechanized and automated welding. Indeed the rate of growth is such that it is difficult for the fabricator to keep abreast of world-wide developments, and it is now thought appropriate to provide an opportunity for a major state-of-the-art review over the whole field of automatic welding.

The Welding Institute is therefore arranging an international conference on 'Developments in Mechanized Automated and Robotic Welding', which will be held in London from 17th to 20th November, 1980. The Conference will review experience gained to date from both technical and economic points of view, and will present the latest developments in process control, mechanization, and automation. An important function of the Conference will be to bring fabricators and equipment developers together to exchange experience for their mutual benefit.

The quest for improved output and better quality is of major concern to all organizations involved in metal fabrication and equipment development, so that this Conference will be of interest to all sectors of industry in which welding is an important method of construction.

The Institute anticipates the offer of either full papers or shorter memoranda from the major suppliers of welding equipment, automatic welding machines, and welding robots, as well as from the users of automatic or mechanized welding equipment. It is expected that the scope will cover arc, resistance, friction, electron-beam, laser, and solid-state welding, and that specific topics will include

- Mechanization of welding processes
- Automatic welding machines
- Welding robots
- Seam tracking systems
- Automatic welding procedure control
- Programmable welding procedure selection
- In-process weld quality monitoring
- Economic advantages of mechanization and automation
- Experience in the application of mechanization and automation.

In addition to the technical papers, the Institute invites the offer of films within the scope of the Conference and, if sufficient offers are received, a special session will be set aside for the presentation of films on mechanized and automated welding.

For further information, write to The Welding Institute, Abington Hall, Cambridge CB1 6AL, England.

Applied mineralogy

Mineralogy is no longer simply the scientific study of minerals, but rather a science whose application can help solve many of the problems that face the mineral industry.

The way in which the science can be applied will be the theme of an international conference that will be held in South Africa in 1981. The conference, ICAM 81, will cover the complete spectrum of mineralogical activity in the exploitation of base metals, precious metals, base minerals (including industrial minerals and materials for the building and construction industry), and carbonaceous materials, and will consider geological and geochemical exploration, ore characterization and exploratory metallurgical testing, mining, grade control and metallurgical plant operation, refining, and product utilization. Mineralogy finds application today not only in mining, extractive metallurgy, and economic geology, but also in the investigation and development of refrac-

tories, ceramics, cements, alloys, and many other industrial materials.

ICAM 81 will include discussions of case histories that illustrate the vital role of applied mineralogy in the mineral industry, and the development of special mineralogical techniques will have an important place in the Conference.

The Conference, which will be held in Johannesburg in June 1981 immediately before the Third International Platinum Symposium and the two-yearly Congress of the South African Geological Society (Geocongress 81), is being organized by the National Institute for Metallurgy and the Geological Society of South Africa, in collaboration with the South African mining, mineral, and iron-and-steel industries.

Further details are obtainable from The Secretary, ICAM 81, National Institute for Metallurgy, Private Bag X3015, Randburg 2125.