Colloquium and General Meeting

A Colloquium and General Meeting were held on 17th March 1971, the theme being 'Future trends in steel production'.

Mr V. C. Robinson (President) was in the Chair.

The Colloquium was attended by 121 delegates and was opened by the President at 10 a.m.

OBITUARIES

THE PRESIDENT: 'It is my sad duty to announce the death of the following: F. O. Read, Fellow, who joined the Institute in 1957 and passed away on 13th January, 1971.

P. G. M. May, Member, who joined the Institute in 1969 and passed away on 10th August, 1970.

R. J. J. Rademeyer, Life Fellow, who joined the Institute in 1942 and passed away on 23rd September, 1970.

As a mark of respect to the memory of the deceased and in sympathy with the bereaved I would ask you all to rise and observe a few moments silence.

CONFIRMATION OF MINUTES

THE PRESIDENT: 'May we confirm the minutes of the monthly general meeting held on 21st October and 18th November, 1970, as published in the Journal'. Agreed.

MEMBERSHIP

THE PRESIDENT: 'I have much pleasure in announcing that the names of the undermentioned candidates, having been published in accordance with ByLaw 5.2.2, Council has elected them to membership of the Institute in the following grades:

FELLOWS:

Romain August Lathioor, Paolo Piga, Renato Ribacchi, Willem Frederick Jacobus Smith, Matthew Churchill, Thomas Anthony James Braithwaite, Hugh Patrick Hart, Eleanor Innocentius Muller, David Alton Smith.

MEMBERS:

Douglas Adendorff, Petrus Jacob du Plooy, James Valentine Grant Middleton, Karl Anders Ullerstam, Josephus Theodorus Johannes van Wyk, Frank Douglas Abbott.

GRADUATES:

David Mervyn Gilbart-Smith, John Philip Wilcocks Bennie, Hendrik Theunis Burger, Johann Wilhelm Coetzee, Johannes Stephanus Stals, Leon van Tonder, Brian George Harvey, John Kennedy McLean.

ASSOCIATES

Richard Cyril Lee Stoyell, Terrence Brian Gouws, Alister Rodney Frederick MacDonald.

STUDENTS:

Andries Groenewald, Christiaan Johannes Hattingh, William Hendrik Hofmeyr, Stanley Thomas Vincent.

I welcome the new members to the Institute and congratulate them on their election.

COLLOQUIUM

The President welcomed everyone present and mentioned that this was the first of the Colloquia which are to replace the Institute's monthly meetings. He stressed that discussion at Colloquia would be completely informal and would not be recorded unless the contributor requested publication.

In conclusion, he thanked the organising committee, the authors and the contributors, and introduced the author of the first paper.

The following papers were presented:-

'The future development of the Iron and Steel Industry' by J. P. Coetzee (Published in the Journal March 1971).

Among those who contributed to the paper were Dr Bleloch, Dr K. Gebhard, Dr Way and Professor Müller.

The main point made by Dr Bleloch related to the reserves of coking coal and of coal for power generation this in country and he deduced that in South Africa we are critically short of coking coal. On the basis that 4 million tons per year of coking coal are consumed for our present steel production, over 16 million tons would be required to meet the anticipated expansion in steel output by A.D. 2000. This must be set against the grim forecast made by the Coal Advisory Board in 1967 that our national reserves of coking coal will be exhausted before A.D. 2000. This gives tremendous significance to the development work presently being carried out by Iscor on alternative methods for coke production. On the other hand the blast furnace may have to be replaced by an alternative process for the reduction of iron ores, e.g., the use of rotary kilns followed by electric arc smelting.

Dr Bleloch also expressed grave forebodings about the reserves of bituminous coal, pointing out that with present methods of mining the recoverable coal in any given reserve is in general only 50 per cent of that reserve. He stated that in the past seventy years great quantities of coal have been forever placed beyond the reach of mining by being undermined by extraction of lower seams or lost by being burned.

A final point made by Dr Bleloch was the fast rise in the capital investment in a fully integrated steel plant, the figure having risen in the past decade from just over R200 to R350 per ton of finished steel per annum.

Dr Gebhard spoke of the direct reduction processes for iron making pointing out the difficulties of securing a high percentage of reduction and the relatively high cost of smelting in electric arc furnaces. As an alternative he suggested briquetting the high carbon sponge iron

and melting this material in a gas or oil fired hearth furnace and then treating the molten product in an oxygen converter.

'Recent trends in the appiclation and technology of refractory materials in iron and steel production' by H. J. S. Kriek (published in the Journal, March, 1971).

The paper was discussed by Mr E. R. Schmidt and jointly by Dr P. R. Jochens and Mr A. A. Hejjə.

'Theory of cold-blast iron production with stack-gas of low nitrogen content' by Dr W. Bleloch (Fellow). (Published in the Journal, September, 1970).

Contributions to the discussion of the paper were made by Mr R. Stewart and jointly by Dr H. B. Beeton and Mr C. G. Jonker.

In his reply Dr Bleloch pointed out that the total hearth heat demanded of $1{,}0 \times 10^6$ kilocalories per ton of iron is met by the combustion to CO of 410 kg of carbon with 615 kg of oxygen in the hearth. In the proposed technique of recycling gases with low nitrogen contents he estimated that the quantity of the carbon burned might be reduced to 280 kg because of the recycling of carbon in the stack by the carbon deposition reaction.

Whether the reaction of CO_2 with carbon is endothermic or exothermic in any given region of the hearth is irrelevant to generation of the required hearth heat which is generated solely by the reaction of carbon with oxygen to form its monoxide.

Recent experiences of continuous casting at Highveld Steel and Vanadium Corporation Limited.

J. Hall, G. A. Davies and W. C. Boemer.

(published in the Journal, June, 1971).

Mr W. M. Wedderburn offered the following contribution:-

A considerable tonnage of cast blocks and rolled billets from Highveld have been further processed at Scaw Metals, and the author compared the problems which have arisen at the two plants. He described various grades of steel which can be cast by continuous casting, and mentioned some of the advantages of the process.

Modern strip galvanising practice.

Maresky and Barnard.

This paper described practice at the Iscor Works, Vanderbijlpark. Dr J. M. Bereza contributed to the discussion of the paper.

The meeting closed at 4.10 p.m.

NOTICES

INTERNATIONAL CONFERENCE ON TITANIUM

This conference will be held in Cambridge, Massachussets, 2-5th May, 1972. Particulars may be obtained from

The Institute of Metals,
17 Belgrave Square,
London SW 1.

SECOND INTERNATIONAL MINE-SURVEYING CONFERENCE

will be held in Budapest, Hungary 5-14th June, 1972. Particulars may be obtained from

OMBKE—Bányaméröi Munkabizottsága,
Budapest (Hungary),
V., Szabadság tér 17.

PROCEEDINGS OF THE SYMPOSIUM ON OPEN PIT MINING

The proceedings of the Symposium on Open Pit Mining held in Johannesburg in September, 1970 have now been published. Members of the Institute may buy the proceedings at a special price of R12,00 as against the list price to non-members which will be R25,00.

Applications should be made to the Secretaries, S.A.I.M.M., P.O. Box 61019, Marshalltown, Tvl.

Visit: National Building Research Institute of the C.S.I.R.

The Institute held a 'press day' for representatives of the technical press on 21st April, 1971. A number of interesting lectures were arranged to inform the technical press of the activities of the C.S.I.R. in the field of building research.

The lectures on paints and plastics were of particular interest to the Mining Industry.

The C.S.I.R. is heavily subsidised from public funds, and is very willing to give valuable advice on almost any subject. One wonders whether Industry in general, and the Mining Industry in particular makes sufficient use of the services made available by the C.S.I.R.

J.C.M.