

## Symposium on Coal in India.

Under the auspices of the National Institute of Sciences of India, a symposium on Coal in India was held in the rooms of the Royal Asiatic Society of Bengal on the 25th and 26th August, 1939, under the presidency of Brevet-Colonel R. N. Chopra, C.I.E., M.D., Sc.D., I.M.S. It was organised by Dr. Cyril S. Fox, Director of the Geological Survey of India, and embraced all significant aspects of the important problem of the main fuel resources of India arranged under forty-one subjects as follows:—

1. History of the Development of the Coal Industry.
2. History of Coal Mining in India.
3. The Geology of Indian Coal.
4. Reserves of Coal in India.
5. India's position in the world as a Coal Producer.
6. Fuel Survey of the Coal Seams.
7. The Conservation of Coal.
8. The present status of the Coal Industry.
9. Coal in relation to Metalliferous Industries.
10. Coal and the Railways.
11. Coal in relation to Power.
12. Coal in the Chemical Industry.
13. Carbonisation of Coal.
14. Liquid Fuels from Coal.
15. Briquetting of Coal.
16. Gaseous Fuels from Coal (including underground gasification).
17. Domestic Coke.
18. Fuel Research.
19. Safety in Mines Research.
20. Safety in Coal Mining.
21. Coal Mines Regulations and Administration.
22. Mine Plans and their Value.
23. Packing with incombustible material in Coal Mines.
24. Fires and Ignition in Coal Mines.
25. Fire-fighting and Rescue in Coal Mines.
26. Storage of Coal.
27. Competitive Conditions in the Coal Trade.
28. Indian Export Trade in Coal (Coal Grading Board).
29. Marketing of Coal.
30. Physical characters and chemical constitution of Coal.
31. Methods of Analysis of Coal.
32. Coal Cleaning and Beneficiation.

33. Sulphur in Coal.
34. Moisture in Coal.
35. Ash in Coal.
36. Volatile Matter in Coal—its nature and properties.
37. Classification of Coal—its relation to utilization.
38. Petrology of Coal.
39. X-ray Analysis of Coal.
40. Botany of Coal Seams.
41. State control, rationalisation and nationalisation of the Coal Industry.

*Opening Address by Dr. Cyril S. Fox.*

If we may judge from the interesting remarks in the 'Abstracts of Papers', which are to be dealt with in this symposium on 'Coal in India', we are justified in believing that the Council of the National Institute of Sciences of India will have cause for congratulation at the end of the meeting. On the one hand they have secured valuable contributions from people who are reliable authorities on the subjects with which they have dealt, and on the other hand contact has been established with many experts in the coal industry of India who probably still do not know what the National Institute of Sciences of India is.

Without going too deeply into details I would say that, even before 1902, when the Government of India instituted a Board of Scientific Advice for co-ordinating the work of official scientific departments in this country, to after 1930, when the Government of India was constrained to become a member of the International Research Council, scientists have felt the need of a co-ordinating non-official body which was entirely free of any political element. After considerable effort and with the co-operation of the majority of scientists in India, the National Institute of Sciences of India was founded in 1935 in Calcutta.

It is necessary to explain that the International Research Council, already mentioned, was the name adopted by a select committee, formed in 1918-19, which had its headquarters in Brussels and representatives in Europe and America. The purpose it had was to co-ordinate the work of scientists in all countries throughout the world by means of members on its Council from all countries and representatives of co-ordinating National Research Councils in those countries. There was no such representative body in India and the National Institute of Sciences of India was formed with a view to going some way towards creating such an organisation.

The aim of the National Institute of Sciences of India is not merely for the co-ordination of the labours of men of science. It has a larger scope. I will quote in order the first three of the eight objectives which this Institute has in view:—

- (a) The promotion of natural knowledge in India including its practical application to problems of national welfare.
- (b) To effect co-ordination between scientific academies, societies, institutions, and Government scientific departments and services.
- (c) To act as a body of scientists of eminence for the promotion and safeguarding of the interests of scientists in India, and to represent internationally the scientific work of India.

The preparation of a symposium on 'Coal in India' was undertaken by the Council of the National Institute of Sciences of India under the terms of its first fundamental objective. I was not present at that council meeting and so can claim no credit for the selection of 'Coal in India' as the subject of a symposium, but there is no question that this is the most important mineral substance in this country and that coal is still *par excellence* the most valuable mineral fuel in any country. The coal production of India in 1938 was over 28·342 million tons valued at rupees 1,064 lakhs.

I will now briefly discuss the scope of the symposium on 'Coal in India'. You will see from the arrangement of the papers that the order of treatment is from the history of the coal industry, and coal mining in India specially, to geology and geological considerations with regard to coal reserves, and so to the utilization of coal in India. Next, attention is given to questions of coal carbonisation and fuel research generally. This is followed by papers on safety in mines, which end with the subject of rescue work in coal mines. We then turn to the important question of marketing Indian coal and the details involved in it—cleaning, grading, methods of analysis—and end with remarks on the problem of nationalisation of the coal industry.

Before the first paper is now called for reading, I would like to say that although the excellent response to my appeal for papers is evident in the 'Abstracts of Papers', this is not all the assistance and interest that has been shown in our efforts. The leading Calcutta firms who operate collieries in the Damodar Valley have provided the funds and will be our hosts today at lunch at Firpo's Peliti's branch, and at tea here in the Royal Asiatic Society of Bengal. I take this opportunity of saying how much we appreciate their kind hospitality.

