# THE INDIAN ACADEMY OF SCIENCES

THE sixth Annual Meeting of the Indian Academy of Sciences was held at the Andhra University, Waltair, on Friday, the 27th December 1940 and the three following days. The session was inaugurated by the Maharajah Sahib of Jeypore at 6 p.m. on the 27th at the Convocation Pavilion of the University in the presence of a large and distinguished gathering of Fellows of the Academy, Delegates from various Universities and Research Institutes, members of the Reception Committee and the elite of Waltair. Welcoming the Fellows and the Delegates, Dr. C. R. Reddy, the Chairman of the Reception Committee, traced the growth of modernism in scientific education in India and stressed the importance of scientific research for the successful prosecution of modern warfare. He aptly remarked that "the front line of defence has shifted from the battlefield to the Nations' research laboratories and manufacturing centres" and "any amount of money invested by a wise Government in strengthening the research institutions and developing new industries under the control of men who possess a sound knowledge of the fundamental sciences will, far from being a waste, go a long way to make the country safe and strong". Sir C. V. Raman, the President of the Academy, then delivered his Presidential address on "Crystals and Photons", a detailed summary of which appears elsewhere in this issue.

The Scientific meetings of the session were held on 28th, 29th and 30th instants. Forty-four papers in Section A, Mathematical and Physical Sciences, and fourteen papers in Section B, Biological Sciences, were communicated for the meeting. About twenty papers were read by the authors present and were followed by lively discussion. The rest were taken for read.

*Symposium.*—A symposium on the "Natural Resources of the Andhra Area and Allied Topics" was held under the auspices of the Academy on the 29th instant. Thirteen papers bearing on the various aspects of the subject were presented. They fall under four groups, (1) Fauna and Flora, (2) Mineralogical and Geological, (3) Electrical and (4) Chemical. A brief summary of the proceedings is given below.

In an interesting paper on the "Faunal Resources of the Andhra Area", Dr. H. Srinivasa Rao gave a rough outline of the fauna of the Andhra country from a knowledge of its physical environment and of the geographical distribution of animals in the Oriental Region (a faunistic division of the world in whch the Andhra area is included). The richness of the tract both in animal and bird life, the abundance and variety of marine and freshwater fish in the seas along its long coast and in the lakes and rivers and the wide distribution of the several Indian species of invertebrates which could be expected in this area, were brought out by Dr. Rao together with the important role animal life plays in the economy of Nature. Two other papers in the series contained discussions of the "Paleontology of the Rajahmundry area", (1) the "Fossil Fauna" by Mr. S. R. Narayana Rao, and (2) "The Fossil Flora" by Mr. K. Sripada Rao. A detailed review of the "Flora and the Plant Resources of the Andhra Area" was given by Mr. J. Venkateswarlu.

Three papers were presented on the "Mineralogical and Geological" resources of the Andhra country. Dr. C. S. Pichamuthu gave a survey of the geological antiquities of the rocks found in many districts and the mineralogical deposits found in the Andhra areas lying on the borders of the Mysore State. In his paper on "Metalliferous Minerals" Dr. M. S. Krishnan dealt with the occurrence of metallic ores in several districts in the Province. Dr. C. Mahadevan communicated a paper on the "Minerals of the Andhra Desa" in which he suggested that a careful geological survey and prospecting for minerals in this area would yield fruitful results. The vast possibilities for the development of the ceramic industries were stressed by Dr. G. Gopala Rao. The raw materials such as red burning clay, fireclays and deposits of graphite which occur in the Andhra area in abundance form the basic materials for the manufacture of structural ceramics, refractories, crucibles, etc. Dr. Rao also gave an account of a survey of raw materials for fine ceramics carried out by him and displayed some articles made by him in the Andhra University.

On the Electrical side, Mr. A. R. N. Rao read a paper on the "Resources and Development of Power in Northern Circars" and indicated the rapid progress being made in

the generation and distribution of electric power by means of charts and figures. He also made some valuable suggestions for the economic use of power in industries, and for the planned development of a network of industries in the country. Mr. D. Seethapathi Rao dealt with the possibility of hydroelectric power development in the Andhra Northern Circars. Mr. S. S. Moorthy Rao in his instructive paper on the "Wireless Engineering Developments applicable in the Andhra area" indicated the urgent necessity for the installation of a wireless communication and a wireless Broadcasting Station in the Andhra Province. Illustrating by means of lantern slides what has been achieved in the Posts and Telegraphs Department of the Government of India, he further indicated the vast possibilities of manufacturing wireless component parts with the raw materials available in the Andhra area.

Dr. T. R. Seshadri gave a detailed account of the "Resources for Organic Chemical Industries" under three main headings: (1) agricultural, (2) forest products and (3) marine products. He also presented the results of the investigations carried out by his co-workers and himself in the Andhra University in the various branches of Chemical industry, such as (1) vegetable drugs and insecticides, (2) fruits, (3) wood distillation and power alcohol, (4) dyes and tans, (5) paper, (6) oils and soaps and (7) gums, resins and wax. Mr. C. Venkata Rao also read a paper on the "Paint and Varnish Materials of Andhra Desa".

In view of the importance of the subject-matter dealt with in the symposium and the many valuable and constructive suggestions put forward by the authors, it is proposed to publish the Proceedings shortly.

*Public Lectures.*— Three general addresses were given during the session. On 28th December Sir C. V. Raman delivered an illustrated lecture on "Structural Colours". On 29th December, Dr. Herre, Professor of Zoology, Stanford University, gave a very fascinating talk on "Fishes and Fisheries". On 30th December, Dr. K. S. Krishnan, F.R.S., discoursed on "Magnetic and Other Properties of Graphite Crystals".

*Socials and Excursions.*—During the session the Fellows and Delegates were entertained at Tea by the Reception Committee, the Pro-Chancellor and the Research Students' Association. An enjoyable excursion to the Vizag Harbour was also included in the programme.

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## BOARD OF SCIENTIFIC AND INDUSTRIAL RESEARCH

AN important decision taken at the meeting of the Board of Scientific and Industrial Research, held at Calcutta on 9-10 January 1941, relates to the constitution of an Industrial Research Utilisation Committee, to be composed mainly of industrialists. The Commerce Member to the Government of India will be the Chairman of the Committee which is "to advise the Government regarding the best means of utilising the result of researches, which have proved commercially possible. It will also advise the Government regarding the terms on which the results of these investigations, the patent rights of which are vested in the Government, could be handed over either to existing industrial concerns or to new concerns which might have to be created".

The Hon'ble Sir A. Ramaswami Mudaliar, who presided over the meeting, in his opening speech congratulated, on behalf of the Board, the recipients of Honours in the new year who included Lala Sri. Ram and Dr. Bhatnagar (both knighted) and Mr. Pillay, the Secretary of the Board, who had been awarded O.B.E. He remarked that it was exactly nine months since the Board had been constituted and that some of the results of the researches and investigation were now beginning to come in. The Director of Industrial Development and some of the members of the staff had achieved results of practical interest to industrialists and the stage had been reached when their exploitation had to be considered. He announced that the Government had decided to constitute an *Industrial Research Utilisation Committee* to assess the commercial worthiness of these researches and encourage their industrial exploitation.