

Goa 2003

The Annual General Meeting of the Society was held this year at Goa on 5th November 2003 in the picturesque setting of the National Centre for Antarctic and Ocean Research (NCAOR). Goa with a hoary past and endowed with rare scenic beauty is bounded by the Terekhol river to the north, the *Sahyadri* mountains to the east, the Karwar district of Karnataka to the south and the Arabian Sea to the west. Thus, the eastern part of Goa is hilly forming the central part of the *Sahyadri* range. The major west flowing rivers of Mandovi, Zuari, Terekhol, Chapora and Betul enhance the scenic beauty of the island of Goa. The well known beaches of Goa at Calangute, Colra and Vagator attract large tourist influx into the State from all parts of India and abroad.



National Centre for Antarctic and Ocean Research (NCAOR), Goa.

Amidst this picturesque setting a three-day National Seminar on Antarctic Geoscience, Ocean- • Atmospheric Interaction and Palaeoclimatology was held along with the Annual General Meeting.

The meeting was inaugurated by Sri Kidar Nath Sahani, Governor of Goa. The President of the Society, Dr. B.P. Radhakrishna, who had planned to attend the meeting could not do so due to indisposition.

In his Presidential address which was read out by Prof. R. Vaidyanadhan, Vice-President of the Society, Dr. Radhakrishna while thanking the Governor for graciously agreeing to inaugurate the Annual Session said:

"The Geological Society of India is 45 years old - five years short of its Golden Jubilee. It was started in the year 1958 at Bangalore with the primary object of promoting advanced study and research in all branches of Indian geology. The first twenty-five years were devoted to building its membership and establishing a reputation for its Journal. Since 1984, in order to lay more emphasis on its all India character the Society started meeting in different parts of India. For the first time it is holding its sessions in your city, known the world over for its scenic beauty. The

Geology and Mineral Resources of this part of India are no less significant. The State has specialized in highly mechanized mining and marketing of iron ore and has surpassed the rest of India in this field. While this is indeed creditable, export of ore in raw state betrays the primitive state of economy. Making use of the ore to produce metal is more important than exporting raw ore. The Society earnestly hopes that the most intelligent and industrious people of the State will give attention to production of high value ferro-alloys".

The Government of India, anticipating the future potential and the importance of both oceanic and Antarctic studies, very wisely decided on the establishment of the National Institute of Oceanography (NIO) and more recently the National Centre of Antarctic and Ocean Research (NCAOR) at Goa. He recalled that "Research work of a high order is being carried out at both these centers and the Geological Society of India is proud to count amongst its Fellows several active researchers in the field of ocean sciences and Antarctic Research".

The National Centre for Antarctic and Ocean Research under the Department of Ocean Development (DOD) has done a commendable job of organizing this National Seminar, where invited lectures by senior scientists from almost all the important agencies of the country involved in the Antarctic and Ocean studies were delivered. The National Institute of Oceanography, Geological Survey of India, India Meteorological Department, National Geophysical Research Institute, Wadia Institute of Himalayan Geology, Indian Space Research Organisation, Birbal Sahni Institute of Paleobotany, India Institute of Tropical Meteorology, National Physical Laboratory, Indian Institute of Geomagnetism, Physical Research Laboratory, IIT's and Universities were represented at the Seminar. Thus, a unique opportunity was afforded to all the participants, to get acquainted with each other and obtain a comprehensive view of the ongoing research programmes and the present status of our knowledge in these two vital areas of scientific endeavour.

The Study of Monsoons

The well being of a large section of the people of India and South Asia is dependent on the monsoon, which in turn is controlled largely by changes in the oceanic temperatures. He particularly laid stress on the study of palaeoclimate and all related aspects during the last 10,000 years and of its crucial importance. Oceanographers' greatest contribution in the coming years should be on studies on the variations of climate on a global scale and weather forecasting on long-term as well as short-term basis. Dynamic ocean-atmosphere models have to be evolved for a more dependable monsoon prediction.

In the same context, the study of Antarctica gains added importance in understanding global warming, sea-level rise and ozone depletion. It is heartening to note that Indian scientists are also in the forefront of such studies of great relevance to mankind.

New Concepts and Advancements in Earth Science

The advent of the Plate Tectonic Theory involving the formation of new crust at the mid-ocean ridges and its absorption in the mantle at the subduction zones has given rise to the concept of a dynamic earth, of moving continents and their collision providing the force required in the formation of high plateaus and lofty mountain ranges. Oceanographic studies have a great deal to contribute to the tracing the history of the continents, mountain ranges and sedimentary basins.

Oceans - the Treasure Chest of the Future

Dr. Radhakrishna pointed out that "Mankind during the last two hundred years has almost depleted the easily available mineral resources on land and is looking to the oceans for meeting its growing needs. The future well being of mankind depends largely on the resources from the oceans. The oil and gas potential of the offshore region is well known. India has a vast coastline still to be explored. Manganese nodules in the sea-floor can provide the much needed metals like iron, manganese, copper, cobalt and nickel.

Gas hydrates are a newly discovered resource and the chances of striking abundant quantities of this resource along with the Indian coastline appears bright. Salt and sea-food industries are too well known to be mentioned. These are flourishing industries along the coastline of India".

Geopolitical Implications of Ocean and Antarctic Studies

It may be appropriate at this juncture to recall the important role played by India during the negotiations leading to the United Nations Convention of the Law of the Sea and in framing the guidelines for an equitable sea bed mining regime under the International Seabed Authority. India consistently upheld the interests of the developing world in the drafting of the relevant documents. Geopolitical dimensions of Antarctic and ocean science were also touched upon during the course of the Seminar, placing our scientific endeavours in the larger perspective of global power politics. The Antarctic Treaty of 1961 and the Madrid Protocol to the Antarctic Treaty on Environmental Protection of 1991 reflect the evolving interface between science and geopolitics in the Antarctic and the Southern oceans.

Popularisation of Earth Sciences

Apart from promoting advanced research in all branches of geology, the Geological Society of India wishes to place special emphasis on popularization of science. Thanks to the generous



Shri Kidar Nath Sahani, Governor of Goa releasing the popular science booklet - "*Story of the Oceans*". Others on the dias (L to R) Prof. R. Vaidyanadhan, Dr. H.K. Gupta and Dr. P.C. Pandey.

assistance provided by the Department of Ocean Development, it has been possible to bring out the first number on the "*Story of the Oceans*". The booklet was formally released by Shri Kidar Nath Sahani, Governor of Goa. Shri Sahani in his thought-provoking and erudite address recounted the wisdom of our ancients in appreciating the intricate interrelationship between the sun, the oceans and the land surface in determining the fate of human existence - nay of all life on this fragile planet.

Fostering Young Researchers

The Geological Society of India is particularly keen to encourage young researchers in the country by providing a platform to come forward and present results of their ongoing research to a wider audience at the Annual Conventions held in different parts of the country. The last day of the Seminar was devoted to presentation of details of ongoing research by Fellows of the Society. Young researchers from academic institutions and research centers came forward to present results of their research on a wide range of topics. It is hoped that many more will utilize this opportunity in the years to come and prepare themselves well in advance for the Annual Convention of the Society.

A Word of Thanks

The three day programme in Goa culminating in the Annual General Meeting of the Society was organized in a very efficient and splendid fashion by Dr. P.C. Pandey, Director, NCAOR and all his colleagues. Participants had the unique opportunity, in addition, to visit the Oceanographic Research Vessel ORV *Sugar Kanya* and its modern scientific facilities under the backdrop of the crimson red sunset of the Arabian Sea. A cultural programme on one of the evenings reflecting the legendary Goan love for music, dance and rhythm allowed the participants to relax on the lawns of the NCAOR after the day's deliberations.

It is a matter of great satisfaction that Dr. Harsh Kumar Gupta, a distinguished earth scientist, is heading the Department of Ocean Development. His invitation to the Society to hold its Annual Convention at NCAOR at Goa has given the Fellows of the Society an opportunity to interact and develop new perspectives in furtherance of their own scientific pursuits. We are beholden to him and his efficient team for all the arrangements and hospitality extended at Goa that has made the sojourn memorable.

The Prospect

Future agenda of work for oceanographers and Antarctic researchers are as limitless as the oceans and as expansive as the Antarctic continent. This calls for a multi-disciplinary effort on the part of scientists. In this challenging task, the Geological Society of India is ever willing to provide a common platform for governmental and non-governmental organizations, academic and research institutions, international bodies and individuals to frequently get together, exchange views, establish new approaches and publish their results for the advancement of earth science in the service of mankind.

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