

CONFERENCE ON ANTARCTICA AND THE SOUTHERN OCEAN IN THE GLOBAL SYSTEM

The 28th symposium of Scientific Committee on Antarctic Research (SCAR) on the above topic and the 16th meeting of Commission of Managers of National Antarctic Programmes was held in the Hanseatic city of Bremen, the chosen 'City of Science', Germany from 25-31 July, 2004. It was for the first time in the forty-six years history of the SCAR that an Open Science Conference was held on the sidelines of SCAR meeting. The symposium was organised by the Alfred Wegener Institute Foundation for Polar and Marine Research (AWI), Bremerhaven, Germany, a premiere research organization of Germany. More than six hundred participants from 34 countries attended the symposium.

The symposium started with the business meetings of the different Standing Scientific Groups (SSG) of SCAR on the 25 July, 2004 afternoon followed by the icebreaker party in the evening at Übersee Museum, Bremen. The formal inauguration of the symposium was held in the Congress Centre, Bremen, on 26th July 2004. In the inaugural address Prof. Dr. Jorn Theide, the current President of the SCAR and the Director of AWI welcomed all the participants to the beautiful city of Bremen. Prof. Dr. Theide gave an outline of the meetings and discussions to be carried out during the next few days. The welcome address was followed by the address of the Federal Minister of Education and Research, Ms. Edelgard Bulmahn, the Chief Guest of the opening ceremony. In her address, she highlighted the achievements of German polar research and the expectations of the government from the polar research community. She also presented the future plans of the German polar research including the acquisition of a new polar research vessel to be operated mainly in the Arctic ocean in order to reduce the workload of RV Polarstern and construction of a new German Antarctic Research Station to be made operational by 2007, the International Polar Year (IPY). She expressed pleasure at the considerable participation of women in the polar research and emphasized the need for more participation of women in this challenging research field. This was followed by the address of the Secretary General of German Research Foundation, Dr. Reinhard Grunwald, who asked for more and more collaborative projects to be undertaken for polar research in view of the requirement of huge investment of money and manpower.

The address was followed by the introduction of four of the five present SCAR research fellows carrying out

research in the Antarctic who talked about their respective research work along with the challenges and difficulties in working in the Antarctic. After this, the COMNAP Chairman addressed the meeting, wherein he emphasised the importance of inputs from the SCAR in formulating the programmes of COMNAP. Bremen Senator of Building, Environment and Transport, Mr. Jens Eckhoff declared the Industrial Exhibition open. In his address, he highlighted the ship building history and importance of Bremen and Bremerhaven as the important seaports. Many companies dealing in polar and general equipments and instruments participated in the industrial exhibition.

A series of keynote addresses were delivered on the first day and in the morning session of second day highlighting the work being carried out, the progress and future plans in the polar regions and Southern Ocean. Dr. E. W. Wolff, British Antarctic Survey gave the first keynote address in which he discussed the advances made in the high resolution climatic history of Antarctica with the recovery of the largest ice core, EPICA Dome C (European Project for Ice Coring in Antarctica at Dome C). He told that with the recovery of this core, the high resolution temperature records for the Antarctic climate are now available up to about 900,000 years before present, almost double the records available before. The significant finding of this project is that though the climatic record for the last 430,000 years compares well with the VOSTOC ice core, but Antarctic temperature during the interglacial periods before 430,000 was lesser than that during the interglacial periods from 430,000 to present. He further noted that the analysis from this core again validate the role of greenhouse gases in the glacial and interglacial periods on earth. He asked the polar research community to come forward for implementation of IPICS (International Partnership in Ice Core Science).

Dr. E. R. Ivins from Jet Propulsion Laboratory, California Institute of Technology, Pasadena presented the advancement made in the Glacio-isostasy in Antarctica. He discussed the need for development of instruments capable of precise measurements of isostatic rebound of Antarctica in the wake of extremely slow rates of rebound measuring up to 2-3 mm/yr as deciphered from the models. Though no secular trend has been observed in the Antarctic rebound, the large scale seasonal differences were noticed. He noted that based on the data from 1980-2000, a mass

balance of 70 Gt/yr has been observed for the Antarctic ice amounting to a sea level rise of 0.1 mm/yr. He also discussed the estimates of Antarctic rebound based on marine and terrestrial glacio-geomorphological signatures of past ice heights and need for more and more sea level and tide fluctuation data along with development of 3D models for precise and better estimates of Antarctic rebound.

Dr A. Brandt, Zoological Museum, University of Hamburg, discussed the findings of the ANDEEP (Antarctic Deep Sea Project). She told that the benthic fauna is highly diverse in the Southern Ocean with many new species that need to be studied in detail. Clear trends were noted in the abundance of series, species richness and biomass from shallow to deep sea. She emphasised the need for more and more studies in this almost unexplored part of the world oceans.

Dr C. Rapley of British Antarctic Survey, Cambridge gave justification and proposed plans for the IPY 2007-2008 (International Polar year). He told that various themes have been selected for intensive activity in the polar regions during IPY. He further asked the polar research community to suggest projects directly related to the polar research, not yet undertaken and with a possibility to be completed over a short period, to be included in the IPY 2007-2008. He informed that the area covered during this period will be from 60° N to North pole, and 60° S to South Pole.

Dr J. W. V. Storey, School of Physics, University of New South Wales, Sydney presented the advantages of setting up the astronomical observatories at Antarctica owing to

the comparatively low winds, clear sky and the plans to set up the world's largest optical telescope measuring 100 m in diameter in Antarctica.

Few more keynote addresses were given followed by the poster and oral presentations. Twenty parallel sessions were organized during the next two days covering different aspects ranging from geology, geophysics, tectonics, palaeoclimatology, biology, astronomy, environmental science of Polar and Southern Ocean research. In all of these sessions it was observed that both polar regions and Southern Ocean need to be studied in detail owing to their advantage of being the best storehouse for past climatic records and regulator of the modern climatic variations respectively.

Indian participation in the conference included Dr N. Khare from National Centre for Antarctic and Ocean Research, Goa, Prof. A. K. Gwal, Barkatullah University, Bhopal, Dr S. Verma, National Geophysical Research Institute, Hyderabad and R. Saraswat from National Institute of Oceanography, Goa, currently at AWI. The SCAR conference came to an end with a reception at the Bremen City Hall.

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PROCEEDINGS OF THE NATIONAL SYMPOSIUM ON APPLIED GEOCHEMISTRY IN EXPLORATION FOR MINERALS AND OIL

Indian Society of Applied Geochemists has brought out the Proceedings of the National Symposium on "Applied Geochemistry in Exploration for Minerals and Oil", held during 10-11 September 2003 at AMD, Hyderabad, as a regular issue of the Journal of Applied Geochemistry v.6, no.2, 2004. The Editors Professor K. Surya Prakash Rao and Dr V. Divakara Rao are to be complimented for bringing out the volume within a short period of about 9 months after the seminar. The present volume includes 26 papers encompassing more than 260 pages of printed material dealing with varied aspects of subjects like exploration for uranium, groundwater, precious metals, oil and gas, and marine minerals, and geological

and geochemical characteristics of various rock formations, environmental geochemistry, geostatistics in mineral exploration etc, though not all the papers directly concern with the subject matter of the seminar. This note attempts to summarise the salient aspects of the volume to the interested reader.

There are three papers dealing with exploration for uranium. The key paper (pp 133-146) by R. M. Sinha of AMD discusses the application of hydrogeochemical surveys in search of concealed uranium mineralisation with two Indian examples. The role of hydrogeochemical methods is particularly significant for us in search of concealed deposits, for larger part of Peninsular India experiences