about the likely impact and proper safety preparedness for pre-, syn- and post-disaster scenario. Professional geologists and students, if trained, can play a very vital role in educating the masses, by giving rational explanation of the geological processes affecting them and the precautionary measures they should adopt to lessen the impact of calamities. Government and non-government agencies should launch campaigns to educate people and to add in the formal educational system, the approaches and methodologies of social aspects of the subject and harvest the returns in the form of protecting the society from mass devastation. Ways should also be devised to put restriction on the predictions about future events by habitual professionals, which create psychological panic in the masses.

Well goes the saying that 'Where there is a will, there is a way' and if this is practised in right earnest in promoting various programmes related to literacy, AIDS, family planning, etc. why can't we be a winner in launching the 'social geology' campaign?

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A synthesis of sedimentary geochemical processes in and around Carlsberg Ridge

The sedimentary geochemical environment in and around Carlsberg Ridge (CR), Arabian Sea is a subject of study for quite some time; yet there is no conclusive picture to understand the metal enrichment processes in this area. Hydrothermal, hydrogenetic and diagenetic processes were attributed by different workers at various sites, during different studies. There are several observations made in this regard in recent years. From the geochemical and mineralogical studies on ferromanganese oxides from the CR area, Colley *et al.*[1] reported that hydrogenetic process is responsible for the δ-MnO_2 mineralogy and metal enrichment (e.g. Mn, Fe, Ni, Cu, Co) of those oxide deposits. The chemistry and mineralogy of ferromanganese nodules from another site of the CR (ref. 2) indicated some possible mixed hydrothermal–hydrogenetic input for the metal enrichment in those nodules. Shankar *et al.*[3] reported that the CR hydrothermal activity during Holocene epoch could be one of the possible sources for the geochemical variations observed in the surface sediment samples from several locations in the Arabian Sea. The idea of metal enrichment by hydrothermal process was contested by the study of rare earth element (REE) enrichment pattern (Ce/La and La/Yb) in the sediments from CR and adjacent Central Indian Ocean and a normal deep sea metal enrichment process in those sediments was suggested, ruling out the possibility of any hydrothermal contribution[4]. Further, from the occurrence of Pteropods in the sediments from the southern part of the CR, it was suggested that the Pteropod preservation at about 2000–2500 m water depth could have become possible due to an increase in alkalinity in seabed sediments, as a result of some hydrothermal inputs in that area[5].

The interlayer geochemistry of ferromanganese nodules from the south-western CR (SWCR) and the specific mineral–chemical assemblages in those nodules indicated that hydrogenetic and diagenetic processes are responsible for their metal enrichment[6]. Further, study on geochemistry, factor analysis and clay mineral distribution of the sediments from the SWCR indicated their relationship with the associated Fe-Mn nodules[7]. *R*-mode factor analyses of the sediment and nodule geochemical parameters indicated different sources of trace metal supply, including biological, detrital, hydrothermal and authigenic processes. The presence of illite and chlorite in these sediments was linked to the Indus source, while an authigenic origin was proposed for the smectite and kaolinite, through the alteration of the ridge volcanic rocks[6]. Evidences recorded from further study on the geochemistry of calcareous sediments from the SWCR indicated the existence of a deeper lysocline (4700 m) and a deeper calcium carbonate compensation depth (CCD > 5100 m), in this part of the Arabian Sea[8]. It was also observed that the CR sediments are enriched in Mg, Ni, Co and Zn in comparison with the adjacent basinal sediments, while they are depleted mostly in all other elements. Also, the Ni and Zn enrichment in these sediments was linked directly to the biological processes (high surface biological productivity) active in this area[8]. The ferromanganese nodules and crusts (Mn/Fe < 1) with higher cobalt concentration (0.9–1%) and fresh basaltic and calcareous nuclei from the Vityaz fracture zone (at the south-eastern part of CR) are hydrogenetic[9].

REE distribution pattern in the surficial calcareous sediments from the SWCR area indicated that the total REE content in these sediments is inversely related to their calcium carbonate content and the REE show a strong positive correlation with Al + Fe + K + Mg + Na, suggesting the combined association of REE with clays and Fe-Mn oxides and also a hydrogenetic contribution of REE to these sediments[10].

From the above information on the geochemical sedimentation processes active in the CR and adjacent areas, it appears that hydrogenetic sedimentation process is most predominant among all other processes active in this region. Future research on sedimentary environment of the CR area should consider palaeoceanographic aspects of ridge sediments through long sediment cores, to understand the past geochemical processes and depositional conditions that prevailed in this area and their relevance to the present sedimentary processes, if any.

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NEWS

Curtain raiser to the forthcoming Third World Academy of Sciences' 8th General Conference in New Delhi

India is the venue for the forthcoming Third World Academy of Sciences' (TWAS) 8th General Conference and the 7th General Meeting of the Third World Network of Scientific Organizations (TWNSO). The meeting is scheduled to be held during 27–31 October 2001 in New Delhi. The TWAS has currently as President, Chintamani Nagesa Ramachandra Rao, who is a founding fellow of TWAS and a distinguished solid state chemist.

TWAS was founded in 1983 by a group of eminent scientists under the leadership of the late Nobel Laureate Abdus Salam. It was, however, officially launched in 1985 with its headquarters in the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy. In May 2001, its membership stood at 588 from 76 countries (62 of which belong to the developing world). Fellows are elected from amongst scientists who are citizens of developing countries and Associate Fellows, from citizens of industrialized countries who have originated from developing countries, else have distinguished themselves to the cause of Third World science.

TWAS in its mission of 'promoting scientific excellence and capacities in the South for science-led development' has since its inception, nurtured a high-level of scientific research tempo in the Third World. The TWAS has an agenda of five key activities. These are:

Capacity building for research: Grants of up to US$ 10,000 are given to young scientists from developing countries in the fields of biology, chemistry, mathematics and physics. Out of a total of 106 research grants awarded in the year 2000, the break-up by region is as follows: Africa/Arab nations: 23, Asia/Pacific: 41, Latin America/Caribbean: 42. In the period 1985–2000 out of 1434 research grants awarded, the region-wise distribution was as follows: Africa/Arab nations: 356, Asia/Pacific: 484, Latin America/Caribbean: 594. The overall distribution of research funding for all regions with respect to the different scientific fields is – biology: 666; chemistry: 240; mathematics: 108, and physics: 420.

TWAS, in its 'capacity building for research', also helps laboratories in developing countries augment their research efforts by purchasing spare-parts for scientific equipment, so as to help scientists perform experiments with minimal interruption. Since 1986, ICTP/TWAS Donation Programme has distributed books, journals, etc. from donors to institutions in developing countries. Through this programme, entire libraries and collections belonging to private or institutional donors have been shipped.

Fellowship and associateship: TWAS has the following schemes:

South–South fellowship: These fellowships help to promote mutual interaction between scientists in developing countries. Most of them are tenable for a period of 1–3 months, however, in the case of some countries in the Third World, visits up to one year are possible. In the period 1986–2000, region-wise break-up of fellowships awarded is: Africa/Arab nations: 122; Asia/Pacific: 212 and Latin America/Caribbean: 214.

Joint associate membership scheme: There are 88 centres of excellence from 21 Third World countries who participate in this scheme. Through this scheme, an associate appointed for three years can visit a centre twice for research collaboration.

Meetings and lectures

Support for international scientific meetings: Financial assistance is rendered for organizing meetings and conferences, related to topics of interest to the Third World. These meetings serve to promote regional and international cooperation for nurturing science in the developing countries. In the year 2000, a total of 43 such scientific meetings have been supported by TWAS. In the period 1986–2000, out of a total of 574 meetings assisted, 139 were in Africa/Arab nations region, 211 in the Asia/Pacific region and 224 in the Latin America/Caribbean region. Grants are offered in all areas of natural sciences, except physics and