

canal, Chennai region. The water was rich in nutrients before tsunami, whereas due to invasion of sea water, dilution had occurred after tsunami.

The next Section in the volume - Relief and Rehabilitation includes four articles. C. Venkatachalam in his paper 'Syndrome of the Tsunami (2004) Ravaged Society - A Microscopic View of Nagapattinam, India' discusses about societal issues that have come up due to the tsunami, like loss of leadership, widowhood, debt grip, psychological depression etc., which warrant deeper look to bring them back to normalcy. A citizen's perspective on 26th December 2004 tsunami is presented by T. Dhanapal, documenting the issues like coastal vulnerability, mitigation strategies, media exposition, communication networking and education facilities that a citizen would like to ponder over so as to understand the dimensions of post-tsunami activities and draw lessons that the tragedy had taught us. The paper - 'Partners in action: NGOs in tsunami relief and rehab' by Annie George deals with the roles played by NGOs in relief and rescue operations in response to the tsunami and the effective role played by NCRC-NGO Co-ordination and Research Centre in rehabilitation phase along Nagapattinam coast by creating successful partnership with the government and the public. The paper titled 'The Tsunami Disaster and Tamil Nadu's Response, India' by R. Santhanam narrates the immediate measures taken in search, rescue and relief operations and the rehabilitation programmes and the steps adopted for prevention of epidemics by the Government of Tamil Nadu.

A paper on 'Landslide Triggered Tsunami in Norway' by SM. Ramaswamy and others is the lone paper in the last Section: Tsunami - Fjord Province of Norway. The authors of this paper visited institutions connected with geohazards and tsunami in Norway to learn more about geohazards. In

western Norway, tsunami triggered by landslides occur frequently, and a brief description of the studies being done by institutions like the Norway Geotechnical Institute (N.G.I), International Geohazards Centre (I.G.C) and Norway Geological Survey, for evolving protective, preventive and prediction models is outlined in this short paper.

Interestingly, the volume has two Forewords, one by Kapil Sibal, Minister for Science, Technology and Ocean Development, Government of India and the other by Dr. C. Thangamuthu, Vice-Chancellor, Bharathidasan University, Tiruchirapalli. The volume has been brought out in well designed hard cover and good quality glossy paper, but the editorial quality leaves a lot to be desired. More attention in editorial work should have enhanced the quality of the papers. It is frustrating in many cases to match the symbols/colour codes in the index with those in the poorly produced maps. Typographic and grammatical errors mar the text, probably a price paid for speedy publication. Another drawback of this volume is that there is no paper dealing with tsunami studies in Kerala coast, though the coast, particularly between Kollam and Alapuzha was severely struck by the 26th December 2004 tsunami. With all the above shortcomings, this multi-disciplinary book may be beneficial to students, researchers, professionals and administrators in the field of coastal environment and disaster management. For speedy publication of this volume, the Department of Science and Technology and the Centre for Remote Sensing, Bharathidasan University, Tiruchirapalli are to be congratulated.

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**HIMALAYA (Geological Aspects), 2006, Vol.4, 355p (ISBN 81-89304). Edited by Prof. P.S.Saklani, Satish Serial Publishing House, 403, Express Tower, Commercial Complex, Azadpur, Delhi -110 033, Price: Rs.1995; US\$ 115.**

This book has 19 contributions. In the first paper Jean-Pierre Burg synthesizes sections across the Central Himalaya and the 'Western Himalaya' in Pakistan and concludes that first-order units and second order structures in these sections are different and developed at different time and rates. He further suggests that Karakoram Fault has propagated from transfer/transform fault between an

island arc preserved orogen in the west and an island-arc-subducted orogen further east. In Fig. 2, which shows main structural features of the Himalaya, two symbols given in the map do not tally with those shown in the explanation. The paper omits references to publications of S.V.Srikantia and his associates, which are based on detailed mapping of a vast terrain.

The second paper concludes that the rocks of intermontane Neogene Kargil Basin (N.S. Mathur and K.P. Juyal) represent deposition under varying fluvial environment in semi-arid climate. The Fig.2 of this paper is blurred and a strain on eyes.

S.A.Rashid and K.K.Sharma have provided geochemistry and petrogenesis of granitoid and mafic rocks and attempted a tectono-magmatic evolutionary model of the Kulu-Rampur Window. They still refer to Manikaran, Green Bed and Bhallan as members, which being mappable on regional scale, in conformity with code of stratigraphic nomenclature have long been raised to formational levels. The age of the Larji is shown as <900Ma, which is contradicted by the stromatolites – the only evidence for age deductions in this sequence. Most of their conclusions have already been published elsewhere, references to which have been omitted. The Fig.8 needs 90-degree anti-clockwise rotation. In Fig.10D, a R.N. Thrust is shown, which is not marked in the Fig.1.

Rajinder Kumar, V.K.Singh, G.K.Dinkar in tectonic and geochemical significance of black shale formations of the Kullu Valley assign Middle Proterozoic age to the Katarigali Formation (p.65) and Cambrian age to the Khamrada Formation (p.67), these age assignments have been reversed in the second para of p.67. In fact there is no evidence to suggest a Cambrian age to either of them. Small and capital F have been used for formation loosely. The Fig. 1 is a sort of traverse map, whereas a detailed map of this area exists; assignment of 1a to the Vaikrita in this map is difficult comprehend.

Papers on Lineament Control and seismo-tectonic activity around Dharamsala (Sunil Dhar et al), Microgranular Enclaves in Champawat granitoids (Santosh Kumar and B.N. Singh), Natural Hazards in Utranchal (D.S.Bagri) and Morphotectonic study in Chamoli Garhwal (S.C. Joshi) are routine geological reports and hardly add anything to the existing knowledge. In the last mentioned paper the index of Fig.1 is illegible and Figs 1(a) and (b) do not have any indices, explanations provided at the bottom of Figs.6 and 8 are not readable, Fig.7 does not exist and reproduction of photographs is of poor quality making most of them irrelevant.

Geology of the Garhwal Himalaya by P.S. Saklani is reproduction of his Presidential Address to 1997-1998 Indian Science Congress. It would have been more useful if it were updated. The author in this paper has used the term Jutogh thrust, which is known in the Himachal and unfortunately has not been extended from the known end in the Himachal to the Uttaranchal; he also states that he prefers Chail to Jaunsar. The 'Chail' in the Himachal occupies two levels;

below and also above the *Simla Slates*. The former was found to be stratigraphically above the Shali forming a part of the redefined Simla Group (Basantpur Formation) and the latter along strike merged with well-defined Jaunsar (Auden, 1934, Record G.S.I., 67). Some workers referred to low grade metamorphic rocks with gneisses in the Kullu area also as the Chail; these rocks do not link with the Chail mapped by Pilgrim and West (Memoir G.S.I., 53). Facts speak for themselves.

Geology and Structure of Srinagar (Garhwal) by S.Shekhar, P.S.Saklani, A.M.Bhola draw conclusions, which are similar to those known in the adjoining areas. The geological cross sections in this paper have highly exaggerated vertical scale, which give a distorted idea of structure.

M. Joshi, A.N. Tewari and D.C. Mamgai (Structural History of the Almora nappe around Champawat-Lohaghat) have indicated presence of pre-Tertiary metamorphism, which can have applied aspect.

M. Khule (The reconstruction of Ice age glaciation of the Himalaya and High Asia) brings out some interesting data, according to him the moraines occur as low as 460m asl on the southern flank of the Himalaya and thickness of ice sheet was 1200m in Tibet and 1100-1700m in Karakoram. The references in this paper especially of the author are haphazardly arranged. Being in the inter-glacial period global warming leading to depletion of ice cover in Antarctica and recession of glaciers in the Himalaya is expected, but the alarming rate of warming during last two to three decades is a cause of concern, which has to be tackled at international level by all the countries; the degradation of environment can no longer be tolerated unless we wish to participate in our own extinction.

Electromagnetic imaging of the Himalaya (G. Gupta and Gokarn) substantiates what was so obvious by the work of geoscientists of the ONGC.

Surinder Singh has presented a synthesis of east, west and upper Siang district of Arunachal Pradesh, which highlights the lacunae in the existing knowledge. There are, however, a few lapses in his presentation too, there are no details of explanation to his Fig. 1, Fig. 8 is so badly reproduced that it does not show any features clearly. The Tuting and Tiding do not figure in the stratigraphic table. Reasons for using Dalbuing and Yinkiong, when both represent same time slot (Lower to Middle Eocene) is not discussed. Best compilations originate from those who have first hand knowledge of regional geology. Having spent so many years mapping in Arunachal, Singh is most competent to compile and synthesize the geology of the Arunachal. It is hoped that instead of

writing on small areas he produces an updated monograph of this little known area.

Paper on "Muth Quartzite" (P.K. Dasgupta) is a Rip Van Winkle's version. The author does not seem to be aware of works by Kumar et al. (Jour. Pal. Soc. India, 1977), Memoir, G.S.I 1998, Vol. 124, and several seminal publications of Erich Dragnits (Vienna University) and his associates. Modern sedimentology is absolutely field oriented based on bedding features with little component of granulometry, which is the main basis in Dasgupta's paper.

S. Ibotombi and M.P. Singh have analyzed the drainage system of Manipur and implication on tectonic evolution of the Indo-Myanmar ranges. This paper is verbose, if summarized to half its length it would have been more effective.

Trace element contamination in Loktak Lake of Manipur (O. Geeta Devi, R.A.S. Kushwaha, M. Okendro) indicates high percentage of mercury as compared to other lakes of India and the authors attribute it to use of insecticide/pesticides by farmers living along the periphery of the lake and also due to activity of anaerobic micro-organism dwelling in the lake. A definite answer by analyzing the soil of the agricultural fields is required before any remedial action can be implemented.

Y. Liu et al. have discussed geological aspects of the Eastern Himalaya (mainly Tibetan part) and implication of zircon SHRIMP ages, they find several similarities with

eastern and Central Himalaya including the equivalent of STDF. They also indicate presence 500Ma metamorphism. Our experience after mapping vast areas in the Western and Eastern Himalaya is that what is called as STDF is decoupling of the Tethyan rocks and its floor of the crystalline rock; at places the Tethyan sequence has slid back, in other places it has moved forward and still in others no dislocation has taken place (e.g. Tandi sequence). The significance of the STDF has been over-emphasized.

Morphometric analysis for mass wasting study (K. Kumar) is another routine study with no innovation. In the Fig. 1 the Simla Group has been spelt as Shimla, Blaini as Blani, Red Shale as Shal, the formations mentioned in this figure are haphazardly arranged, also the colour scheme is confusing.

Prof. Saklani has edited several books and it certainly cannot be the last. It is fervently hoped that his next publication will be more rigorously reviewed and edited.

The younger scientists before catering to books should hone their paper-writing skill should submit their papers to reputed journals where rigorous scrutiny takes place. It will be an education, which will prepare them for better future performance and eliminate slipshod mistakes which otherwise creep in the printed.

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## GEOSCIED-V: PROMOTING GEOSCIENCE EDUCATION WORLDWIDE

GeoSciEd is an International Conference held every three years. The fifth in the series will be held in Bayreuth, Germany during 18-21 September, 2006. Further details can be found at: <http://www.bgi.uni-bayreuth.de/-geoscienced5/index.php?action=index>

The International Geoscience Education Organisation (IGEO) has some funds available to sponsor delegates who would not otherwise be able to attend. Application format may be obtained from: [rshankar\\_1@yahoo.com](mailto:rshankar_1@yahoo.com).

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