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BOOK REVIEWS

Sedimentary Basins of India: Recent Developments

Special Volume No. 12 of the Gondwana Geological Magazine published in the year 2010 by the Gondwana Geological Society, Price Inland Rs. 1500/-, for Foreigners $ 100

The publication of the proceedings of a symposium entitled "Sedimentary Basins of India: Economic potential and future prospects" organized in Nagpur on 22nd and 23rd October, 2010 by the Gondwana Geological Society is a commendable effort. It is published as a special volume of the Gondwana Geological Magazine which has been edited by Dr. Pradeep Kundal and Dr. Anil M. Porphare. It incorporates 43 research papers and 14 abstracts. The research papers cover varied topics ranging from exploration of hydrocarbons to characterization of rice growing soils. The important topics include types of coal seam and their depositional environments and tectonic history, coal seam reservoir characterstics, ground water geology, sedimentology, stratigraphy including sequence stratigraphy, microfacies analysis, remote sensing, geochemistry, Quaternary morphometry, study of Recent sediments, mineral deposits, palaeontological studies, etc. The editors have done an excellent job in handling so many varied topics. However, it would have been better if the papers had been arranged under various thematic groupings.

In the beginning, out of the seven papers, six are on the uranium mineralization by the scientists of the Atomic Mineral Directorate. It is good to have so many papers by the Atomic Mineral Directorate at one place which give us a window to the excellent work being done by the organization. All the papers give very useful information. About other papers, five deal with the coal-bearing horizons. Mendhe *et al.* discuss the coal reservoir characteristics of coal-bed methane in Karanpura coal fields, Jharkhand, whereas S. Sen gives an appraisal of the Indian Bituminous coals of the Lower Gondwana Basins. Misra and Misra discuss the tectonic evolution of different sedimentary basins for the development of hydrocarbon pools along offshore and the oceanic regions of peninsular India. Two papers by Kotha & Sharma, and Srivastava & Mankar describe the trace fossils along with other sedimentary parameters. Three papers by Prathimon *et al.*, Nagendra *et al.* and Chandra Singh *et al.* deal with the chemical aspect of early Cretaceous rocks of Dalmiapuram, Late Cretaceous sediments of Ariyalur and Eocene – Oligocene deposits of Manipur respectively. Eleven papers deal with the different aspects of Quaternary and Recent deposits, of which one by Meshhram deals with the mammalian fauna of Narsinghpur, M.P.

Of other papers which deal with the palaeontology, one describes Precambrian algae and the other deals with the middle Eocene calcareous algae. Only two papers deal with the tectonics; Rana *et al.* summarize the neotectonic activity in the Purana Basins, while Misra and Misra synthesize the tectonic evolution of sedimentary basins. A few papers deal with the stratigraphy including sequence stratigraphy. V.C. Tewari gives an overview of the Lesser Himalayan sedimentary basins, but it is shocking to see omission of the work of J. B. Auden and some other important workers from the list of references, whereas he has cited 28 of his own research papers. It appears that there is a deliberate attempt to promote his own work at the cost of others. This discrepancy should have been addressed at the editorial level.

Overall, the publication is useful for all the workers in the universities and research organizations. In general, the quality of publication is very good except that some figures are not up to the mark and plates in general are of poor quality.

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Applied Micropalaeontology - Special Issue of the Gondwana Geological Magazine 2010, Vol. 25, No. 1, p. 195, edited by Pradeep Kundal and Sumedha K. Humane, publisher Gondwana Geological Society, Nagpur, India.

The Gondwana Geological Society of Nagpur is actively involved in consolidating the knowledge in various fields of Indian geology. In recent years, it has brought out many topical compilations on specialized aspects. One such outcome is on *Applied Micropalaeontology* as a special issue of the Gondwana Geological Magazine, vol. 25(1), incorporating 23 research papers edited by Pradeep Kundal and Sumedha K. Humane. Micropalaeontology is an important sub-discipline of palaeontology which has witnessed global interest for its applied values in biostratigraphy, palaeoecology, palaeoclimate, palaeoenvironmental studies. Several successive publications appeared on micropalaeontology in the past few years. Present volume provides consolidated information of Indian contributions on the subject by leading experts representing several prominent institutions of the country. Various groups of microfossils are being used as proxies in micropalaeontological studies. This volume consists of fifteen original research papers, seven review articles and a paper on application of micropalaeontology in palaeothermometry - a newer addition to the subdiscipline. The volume includes eight papers on foraminifera, five on palynology, two each on pteropods, ostracods and diatoms, one each on thecamoebians, calcareous algae, bryozoa and nannofossils which testifys to the large number of the active research groups in the country and wider applications of these fossils groups.

Foraminfera are the most important microfossil group used in palaeoclimate studies and has received maximum attention in the volume. Topics such as estimation of palaeothermometry through micropalaeontological studies (*Shaoo* and *Saraswati*), benthic foraminifers' biodiversity (*Singh* and *Rai*) and palaeoclimatic changes, and effect of Indian Ocean tsunami of December 2004 on the distribution of inner-shelf foraminifera among the benthic foraminifera of the coastal stretch of the Cuddalore and Nagapattinam (*Gandhi* et al.) are covered. *Nigam* has demonstrated the application of foraminifera in understanding and resolving the various contentious issues in Marine Archaeology. His studies have shown a new scope of micropalaeontology for future. Several proxies are used in deciphering palaeoclimate. *Kumar* et al. have discussed about the relationship between sediment characteristics and benthic foraminiferal populations of Gulf of Mannar, off Tuticorin. From the Tuticorin area, *Rao* et al. have documented Recent benthic foraminifera found in diverse ecological setting and also provided a check list of all the species recovered and identified. *Rajashekhar*, while reviewing the published data on foraminifera from the various formations of Cretaceous age of India, has shown their application in understanding sea-level changes, neotectonic activity, reworking of foraminifera, subsurface geology, depositional environment, climate and use in pollution estimation. *Venkatachalapathy* and *Whiso* have presented an account of foraminiferal assemblage and palaeoecology of the Eocene succession in the Dillai Parbat area of Assam.

A paper by *Nagamadhu* et al. provides an account of the palynological assemblage of the Lower Gondwana coal succession of the Chintalpudi sub-basin of the Sattupalli area of Godawari and discusses palaeoclimate of the area during the deposition of the sediments. *Sarkar* has presented the palynological assemblage of the Kathgodam area of the Lower Siwalik. Palynozonation suggested by him indicates low-land rainforest under warm, humid climate during sedimentation in the older horizon, and the younger horizons represent deposition under much drier and cooler climate. Study by *Sabina* et al. analyzes twelve samples from the Umrer coalfield of the Wardha Basin and recorded palynoassemblage for deducing the palaeoenvironment. The Lametaghat section is an important section in Indian Geology which has, quite often, provided material to debate. Study of the coal band noted in the recently excavated trench has drawn attention of the research workers. *Samanta* et al. have studied the coal band which is sandwiched between the Precambrian Bijawar Gneiss and the Late Cretaceous Green Sand of the Lameta Formation to decipher its age through palynological composition and have suggested that it belongs to the Jabalpur Formation of the Gondwana Supergroup. The coal streaks that occur in the lower part of the overlying Lameta Formation in this section are most likely to be reworked from underlying coal band. Another paper on palynological study of the Jabalpur and Lameta formations by *Dogra* et al. provides the age constraints and environment of deposition of both these formations. They have suggested that the Jabalpur Formation is of Tithonian-Neocomian age, whereas the Lameta Formation is Maastrichtian in age.

Bhattacharjee has presented results of a detailed study on the Quaternary Pteropods in North Andaman Sea. Conclusions, drawn in terms of degree of preservation of pteropod tests, its numerical abundance and dissolution indices at various water depths, are utilized to determine the Aragonite Compensation Depth in the area. A paper by *Singh* and *Singh* shows potential of Pteropods in the reconstruction of the Quaternary climate and Oceanographic history of the Arabian Sea. A new age constraint based on ostracod assemblage has been provided by *Khosla* et al. for the Lameta Formation. They have assigned a late Maastrichtian age for the Lameta Formation of the Pisdura Nand-Dongargaon Basin in Chandrapur District. *Ganesan* and *Hussain* have given a detailed account of the Recent benthic ostracods recorded from Tamiraparani estuary near Tuticorin. The entire biocoenosis suggests shallow, warm and tropical water habitat. *Mohan* et al. have summarized the application of diatoms in deciphering the past climate changes. *Humane* et al. have presented a detailed account of diatoms of pre- and post-monsoon seasons found in Vena River in Nagpur and discussed their environmental implications.

Farooqui shows the potential of thecamoebians as a proxy for monitoring palaeoecology using modern field database from marine and fresh water settings. *Kundal* provides an overview of the fossil calcareous algae and highlights their biostratigraphic, palaeobiogeographic and palaeoenvironmental significance with examples. *Sonar* et al. have presented the usefulness of bryozoan skeletons in the interpretations of Holocene palaeoecological aspects of west coast of Maharastra and Goa. *Rai* and *Abha* have enumerated applications of calcareous nannofossils in biostratigraphy and reconstructions of palaeoenvironment.

The Gondwana Geological Society has carved a niche for itself in bringing out special issues of its journal on different aspects of Indian Geology and the present issue is also the part of the same series. Efforts of the editors are commendable for bringing together the experts of so diverse aspects and completing the project in a designed time-frame. Except a few photo-plates, printing quality is good. Authors of three review papers missed citing any of their work in the reference lists which is rather intriguing. The special issue will certainly find a place in all the geoscience libraries.

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OBITUARY

Prof. D.A. Rasheed
(1923-2010)

Prof. Dastagir Abdul Rasheed, a distinguished teacher and a well-known micropaleontologist, passed away on 7th November, 2010 (Sunday) at his residence in Indira Nagar, Chennai. He was born in 1923 in Mysore. He had a distinguished career and obtained B.Sc. and M.Sc. Degrees from the Universiy of Mysore, Karnataka. He worked on the Recent Foraminifera from the Coral Sea, Papua, New Guinea, and obtained the Doctorate Degree of the University of London in 1958. He has guided several Ph.D. scholars and his students have occupied various coveted positions in National organizations and Universities. To his credit, he has a number of publications in peer-reviewed Indian and foreign journals. He was the Convener of the VII Indian Colloquium on Micropaleontology and Stratigraphy held at University of Madras during 1978. He served as the Head of the Department of Geology, University of Madras, for a period of 18 years from 1966 to 1984. He has delivered several invited talks. His contribution towards the growth of Indian Micropaleontology is worth mentioning.

May his soul rest in peace.

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