

The nature of its plastid-like DNA, expression of the genome and its physiological role in apicomplex are discussed. Although our knowledge on these two fascinating plastids is still limited, this chapter provides a new dimension to photosynthesis research that needs further attention. The last three chapters describe the responses of the plastid to environmental factors like gravitation, light and oxygen. Palmieri and Kiss describe gravitation responses, Sato and Kadota describe light responses, whereas Logan discusses oxygen responses. Light-induced chloroplast movements mediated by different photoreceptors, and molecular mechanism of the receptors' action, have been reviewed earlier in advanced-level books on plant physiology.

This is the first book in the *Advances in Photosynthesis and Respiration* series (Series Editor, Govindjee) that comprehensively describes the complete story of plastids, including their diversity, origin, evolution, interconversion, different physiological functions, communicating systems with other cellular organelles and their responses to various environmental factors. The chapters covering these areas provide the most recent and relevant information.

A complete 'Table of contents' of this book is available at: <http://www.life.uiuc.edu/govindjee/References/Volume%2023%20By%20Chapter.htm>. Members of the International Society of Photosynthesis Research (website: <http://www.photosynthesisresearch.org/>) receive a 25% discount.

Although the book succeeds in providing a broad view of the structure and function of plastids to students and researchers in chemistry and biology, some of the chapters are specifically designed for advanced students in the fields of photosynthesis, molecular biology, biochemistry and plant physiology. Several chapters are suited for use as textbook materials for courses in plant physiology. We recommend this book to all major libraries.

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Geology of Haryana and Delhi. Jawahar Lal Thussu. Geological Society of India, P.B. No. 1922, Gavipuram PO, Bangalore 560 019. 2006, 191 pp. Price: Rs 250; US\$ 25.

The book under review provides useful compiled information with figures and tables on the subject with a reasonably priced tag. It is part of the ongoing activities of the present publisher to bring out the geology of various states in India as a textbook series.

The book consists of two parts which describes the geology of Haryana and Delhi respectively. Part I consists of 12 chapters in 145 pages. Chapter 1 provides the introductory aspects on Haryana, viz. history, location, climate, industries, geological investigation. Chapters 2 and 3 deal with the geomorphic landforms and geological history of Haryana respectively. It illustrates the region as a vast featureless Indo-Gangetic Plain separated by two contrasting litho-tectonic assemblages embedded in the oldest (Aravallis) and youngest (Himalaya) mountain in India. Chapter 4 describes in detail (in 50 pages – largest chapter in this book) the geology of Haryana. It demonstrates that geologically 95% of Haryana is covered by Quaternary sediments and the rest 5% by Proterozoic rocks. Chapter 5 highlights the palaeontological studies mainly in the Siwalik sediments. Chapter 6 provides the various geophysical techniques employed in Haryana for mineral exploration, basement topography evaluation, engineering–environmental projects, geothermal exploration and other investigations. Chapter 7 deals with mineral resources and their occurrence in Haryana. Tin mineral exploration at Tosham, Bhiwani District, Haryana besides other economic metallic and nonmetallic minerals at various places are also provided. Chapter 8 explains the various geoenvironment evaluations (natural and anthropogenic hazards) with respect to rapid urbanization and industrial growth in Haryana. Chapter 10 accounts for groundwater aspects of Haryana, viz. water chemistry (types of water, ratios, correlation) and origin of salinity (classification, cluster analysis, factor analysis). Chapter 11 deals with drainage migration in the Indo-Gangetic Plain of Punjab–Haryana. Chapter 12 exposes the various problems, gaps and remedial measures with respect to geology, basement configuration, geophysics, salinity, copper and iron mineralization,

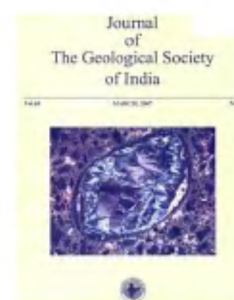
desertification, modification of landforms due to quarrying, urbanization, etc.

Part II of the book consists of nine chapters in 26 pages. It deals with the introduction, physiography, geological investigation, geology, mineral resources, groundwater, geophysical survey and geo-environment evaluation with possible remedies in Delhi.

The information in the book is based on work (unpublished in journals) carried out by mostly Officers of the Geological Survey of India (GSI) in the last few decades. The references cited include mostly unpublished GSI reports. However, as the book is based mostly on unpublished work, the cited references in the book are not generally available for the readers to seek clarification/any enhanced information on the subject matter. Thus the book does not provide the readers with complete information on the subject. A little more care by the author and editor would have helped to avoid spelling and grammatical errors. The book is recommended for the general public as well as specialists interested in the exploration and management of various earth resources, geo-environment monitoring and urban development in the Haryana and Delhi.

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Special Issue on Kimberlite and Related Rocks of India. Fareeduddin and M. S. Rao (Guest Editors). Geological Society of India, No. 63, 12th Cross, P.B. No. 1922, Gavipuram, Bangalore 560 019. Vol. 69, 2007, 261 pp. Price: Rs 20.

The special issue under review comprises papers presented at a Group Discussion on Kimberlites and Related Rocks of India organized by the Geological Society of

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India, Bangalore during 22–25 November 2005.

B. P. Radhakrishna, the former long-time Editor and author of many illuminating and masterly editorials, has contributed the very first article in this issue entitled 'Diamond exploration in India: Retrospect and prospect'. He notes that though many International Kimberlite Conferences have been held in different parts of the world since 1979, regrettably, there is hardly any reference to India. Kimberlites and other related rocks, which have been proved to be the source rocks of diamonds, are an extremely interesting group of rocks and their study extends to a whole range of specialist fields extending from planetary studies of celestial objects in outer space, to material tapped from the deepest parts of the earth's mantle. All the modern advances in the sister sciences of physics and chemistry have been freely utilized in gaining a better understanding of the genesis of this unique rock-type.

The first of the papers gathered in this special issue is an historical review of diamond exploration, commencing from the Vedic period when alluvial diamonds were first discovered by early man in the river gravels of India. A brief summary is furnished of the observations of travellers who were attracted to India by its wealth. Systematic surveys however commenced only with the organization of the Geological Survey of India in 1951. A broad survey of the current trends in research and identification of possible unconventional sources is indicated.

The introductory paper is immediately followed by a review of the status of lamproites and kimberlites of India by Barbara Scott-Smith, a well-known authority in the field of kimberlite research. It is an excellent review which was originally published in the journal, *Neues Jahrbuch fuer Mineralogie, Abhandlungen* and not available in many of the libraries in India. The paper is reproduced here and the author has kindly added a few extra para-

graphs as an Addendum, bringing the status of our knowledge up to date.

Fareeduddin and his colleagues have presented a set of photographs, illustrative of the textural variations in Indian kimberlites, lamproites and lamprophyres along with a brief description of each photomicrograph.

Roger H. Mitchell, a well-known authority on kimberlites who has enriched geological literature, emphasized the need for rational classification based on the fundamental character of the melt and not bulk rock geochemistry. He has extended his analyses to lamprophyres, a widely distributed hypabyssal rock type in India with his insightful study.

T. K. Rau has made a special study of the Panna diamond belt, one of the earliest known productive regions of India. A review of the work on Majhgawan pipe, the only pipe in India, has recently been provided by Chalapathi Rao, while the important point to be noted in the review is the extent of the diamond-bearing sediments in the Rewa Sandstone of the Proterozoic Vindhyan Group. An aeromagnetic study of the area is presented by Rajendra Sharma and his co-workers.

Bastar craton is most promising of all the Indian cratons from the point of view of occurrence of diamonds. While Chalapathi Rao and others have now furnished evidence in support of a Palaeozoic age of the Kodomali pipe (491 m.y.), Datta Mainkar and Bernd Lehmann have furnished the geochemistry of the Behradih pipe rocks. Bernd Lehmann and others have reported possible Neoproterozoic age around 620 m.y. of titanite in the Tokapal, Bhejripadar group of pipe rocks. These are the first group of diamondiferous pipe rocks of younger age than the majority of kimberlite pipes so far known in India.

Kaminsky, a prolific writer, who has contributed to our knowledge about the diamond deposits of the Siberian platform in Russia and one who deals specially with unconventional sources of diamond, has presented an article broad-

ening our vision and concentrating attention and efforts in the identification of source rocks other than those formed at mantle depths.

D. K. Paul and his group have provided information on the geochemistry of a group of lamproites fringing the northern part of the Cuddpah Basin, which lies closest to the gravel beds of the Krishna Basin.

Work on the location of new pipes on the basis of stream sediment sampling is continuing and several papers are included in this volume. Chellani describes a new find of diamond-bearing pipes in the Chattisgarj–Bastar craton.

Lamprophyres are now being considered as possible source rocks of diamonds. Nambiar has presented an account of the lamprophyre rocks of NE India.

While research on producing diamonds under laboratory conditions is being pursued with vigour, the Mineralogical Laboratory at Manasagangotri, Mysore, under the leadership of Byrappa and Basavalingu is continuing experiments on the production of gems under high pressure conditions. Basavalingu and Byrappa, who are now concentrating their attention with assistance of Japanese collaborators, at producing fine diamond crystals in a hydrothermal environment, have furnished details of this new study which is bound to be of interest in understanding the genesis of diamond.

Finally, B. P. Radhakrishna, the doyen among geologists of India, has expressed his hope that this issue will provoke new thinking and identification of new fields of research on diamonds. Such new research is bound to provide an additional database on kimberlites in India. Collective work of a large number of researchers in India and abroad will prove to be of value and can thus provide guidance for planning a purposeful diamond exploration in the future so that India can regain some of its lost glory in the field.

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