

et al. discuss minerals and major elements in density-separated coal fractions, whereas Kostova et al. study mineralogy, geochemistry and pyrite content of Bulgerian subbituminous coal of Pernik Basin. Mclean and Murray describe sub-surface correlation of Carboniferous coal seams and interseam sediments using palynology. Karayigit et al. discuss coal geology, chemical and petrographical characteristics and implications for coalbed methane development in Sorgun and Sulova Eocene basins, Turkey.

The book is rich in illustrations having 256 figs. and 71 tables. 665 references to coalbed methane and coal geology add to its value. Typographical mistakes are very few. The quality of printing is of high standard. This book will be a source book of information to geologists engaged in exploration of CBM and also others engaged in coal and other conventional hydrocarbon-resources besides teachers and students. The price of the book is beyond capacity of individuals but must find a place as an important reference book in geological libraries.

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**THE NATURE OF DIAMONDS**, George E. Harlow (Ed.), Cambridge University Press, 278p, Price: Paperback Edition £19.95

This book provides a great deal of information about diamonds in a concise manner. Being a dedicated curator in the American Museum of National History, G.E. Harlow, the editor of the book, is well informed about all aspects of this remarkable mineral. He has done an admirable job by inviting experts to write on important aspects of diamonds in simple words, cleverly avoiding technical jargon. The list of contributors includes eminent scientists, prospectors, curators of museums, jewellers, merchants and scholars.

Chapter 1 (G.E. Harlow) deals with the structure, physical and optical properties of diamonds. The nature of colour is discussed in Chapter 2 (E. Firtsch). Unlike most other minerals, colour in diamonds is on account of unusual impurities and colour centres. Band-gap colours due to nitrogen and boron impurities; colour centres related to neutral vacancy (GR centres), distribution of nitrogen atoms around vacant sites ( $N_3$ ,  $H_3$ ,  $H_4$  and N-V centres) and hydrogen-related defects; fluorescence and phosphorescence in diamonds; cause of colour change in 'chartreuse' diamond as well as the strange chameleon diamond; colour due to inclusions; and irradiation and other colour enhancement techniques employed on diamonds have been described. Chapter 3 (M.B. Kirkley) gives an account of the origin of diamonds and earth processes. Occurrence of diamonds from mantle-derived rocks and their characteristic inclusions; use of carbon isotopes in determining ancient harzburgitic diamonds in younger kimberlites and lamproites, eclogitic diamonds in contemporaneous eclogites; finding of diamonds in ultrahigh-pressure (UHP) terranes of Kokchetav massif; and finally diamonds in meteorites and diamonds from the impact of meteorites are described crisply. The chapter also mentions of kimberlite and lamproite craters. Chapter 4 (A.A. Lavinson) narrates diamond sources and their discovery starting from antiquity to 1730, the year upto which India dominated the diamond scene. Brazil's takeover from 1730 to 1870; subsequent South Africa's astounding ascendancy; and more recent discovery of numerous diamond fields in mid- and late-20th century in Russia and Australia are given good coverage. The possible supremacy of Canada in the near future is discussed briefly.

Chapters 5,6,8,9 and 10 deal with diamonds and diamond jewellery from early historic times to the present day. Chapter 7 gives an account of the value of diamonds in English literature. A connoisseur of diamond jewellery would find reading these chapters extremely fascinating.

Chapter 11 (G.E. Harlow) gives a brief account of prospection and mining of diamonds including exploitation of marine deposits. Aspects of diamond cutting and polishing for jewellery as well as for certain specialty products such as dies for drawing wire and microtone blades used in medical biopsy are described. Chapter 12 (J.E. Shingley and T. Moses) provides a guide to identification of natural, synthetic and treated diamonds; various colour and clarity enhancement techniques; and 4-c's for evaluation of diamonds. The last Chapter Ch. 13 (A.T. Collins) synthesises information on application of diamonds in different scientific and commercial fields such as supercomputers, electronic devices and H P anvil cells. Chemical vapour deposits (CVD), the latest evolutionary process in diamond synthesis is described briefly.

Overall, the book provides voluminous up-to-date information on diamonds. It forms a very useful reference book for a beginner who wishes to know all about diamonds. The reader can pursue his study taking the aid of references provided at the end of each chapter. Along with chapters 1 to 4 and 11 to 13 that furnish technical information. Chapters 5 to 10 deal with glamorous aspects making the coverage "complete". Notwithstanding, this well organised meticulously printed book with excellent colour plates and figures, a few unforeseen errors have crept in. 'Type I diamonds' appear to have been wrongly printed as 'Type II diamonds' in line 9, p.21; the captions of colour plates in p.109 and p.111 have been interchanged; 'Dresden green' illustrated in p.112 depicts a beautiful green hue, the same stone in p.41 fails to show that colour. This reasonably priced book is recommended not only for university and technical libraries but also for all those who love diamonds and those dealing in diamonds.

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### **REMOTE SENSING AND PHOTOGRAMMETRY: Principles and Applications**

by M.L. Jhanwar and T.S. Chauhan (1998), Vigyan Prakashan, Nagarion Ka Bas, Jodhpur  
 - 342 002, Vol. I & II, 425p. Rs. 490/- each.

Remote Sensing is a comparatively recent science with tremendous development potential. Concomitant with the advancement in space technology the field of remote sensing also grew in stature and content. India with its indigenous IRS satellite pay loads is in the forefront in this technology. Hence, it is but timely that the authors have come out with text books on this subject catering to the needs of the academic community. It may be remembered that many universities are offering post-graduate courses in Remote Sensing.

While complimenting the authors for their valuable effort in bringing out a text book to serve the needs of the post-graduate students, the books have a number of shortcomings which should invariably be overcome in future editions.

The title of the book should have been "Photogrammetry and Remote Sensing" rather than "Remote Sensing and Photogrammetry" as Photogrammetry is dealt with first. Since the second volume deals only with "Remote Sensing Applications" it would have been more appropriate to have the same title.

While discussing Photogrammetry in Volume-I under mathematical considerations for stereoscopic vision, various definitions like Epipolar axis, Epipoles etc. could have been explained with line drawings, as also "stereoscopic parallax" which is an essential feature of aerial photographs. These are essential as the book addresses the student community. Similarly the formula given for