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### The Eras of the Diamond

By Jules Roger Sauer, publ. by Amsterdam Sauer, Rio de Janeiro, Brazil, 2003, price available on request. E-mail: [julesauer@amsterdamsauer.com](mailto:julesauer@amsterdamsauer.com).

The author is an elder statesman of the gem trade who began cutting diamonds in Belo Horizonte, Brazil, in 1941. In this beautifully illustrated book, Mr. Sauer pays tribute to the rich lore of diamonds with a nontechnical approach by someone who has sincerely loved them through the years.

The early chapters focus on the lore of gemstones and ancient myths surrounding rough diamonds (such as one 1243 lapidary work that postulated that brown diamonds were male, and female diamonds were "white and beautiful of color like crystal"). These chapters also include sections on the formation of diamonds and principal deposits worldwide.

The second section, on gem cutting, features an analysis and history of cutting and grading gem diamonds. It offers interesting details on how the art has changed over the centuries, from the European table cuts of the 16th century to the many contemporary cuts.

Indian diamonds, of course, played the predominant role in the early trade. They are mentioned in Sanskrit texts as old as 3,500 years, though some of these early references may actually have been to other gemstones. A millennium later, diamonds were actively traded along the legendary Silk Route—westward through Afghanistan, Persia, Syria,

and Turkey, and finally from Constantinople to Rome, as well as eastward to China.

The author vividly describes India's ancient citadel of Golconda, which was the center of the diamond world during the 16th and 17th centuries. Merchants gathered there to buy and trade gemstones. Among the famous diamonds to come from that region are the 45.52 ct Hope, the 787.5 ct Great Moghul, and the 440 ct Nizam.

At the heart of the book are the chapters on Brazil, which supplanted India's dominance after diamonds were discovered there in the early 18th century by gold prospectors (who did not recognize those crystals as objects of value). The book describes how the ensuing diamond rush overwhelmed European gem markets for a time. The book also provides a portrait of the *garimpeiros*, the independent diggers who form the backbone of the Brazilian diamond industry. It describes the different diamond-producing regions of the country, recounting stories of how famous Brazilian diamonds, such as the 726.8 ct Presidente Vargas, were unearthed. This stone was recovered from the Santo Antonio River in Minas Gerais in 1938 by two such *garimpeiros*, who sold it to a dealer for \$56,000. The diamond eventually found its way to Harry Winston, who reportedly paid \$600,000 for it. At the end of this section is a table listing the notable diamonds found in the country.

The author reviews other producing countries and offers a chapter on De Beers's role in the market. Unfortunately, much of the information in

that chapter is quite outdated. The closing chapters feature reports on the growing popularity of colored diamonds, notes on synthetics and treatments, and an update on prospecting efforts in Brazil.

The author does not delve into great detail in this book, but does offer an attractive overview of diamond production and an insider's look at Brazil's diamond production—which many authors ignore. For that, it's worth a read.

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### Jadeite Jade, A Stone & A Culture

By Chiu Mei Ou Yang, 184 pp., illus., publ. by the Hong Kong Institute of Gemmology, 2003. US\$45.00

A notice in the book's preface should prepare readers for what is to come. The author writes, "Although this book has been edited and corrected many times, this book may still contain some typing mistakes and/or there may be missing phrases." Indeed, this new book in English is littered with hundreds of typos, missing letters, and misspellings that make careful reading a chore. There are even two such errors in the short dedication: "grestest teachers" and "This book is dedicate to them."

There are a number of interesting new photographs of contemporary pieces and a very useful selection of photographs showing some of the many materials carved in China and

sold as jadeite. Unfortunately, the educational value to readers of seeing the many imitations is muted by the author's use of potentially confusing trade names, such as Serpentine "jade," Aventurine "jade," Australian "jade," and even Green Grossular Garnet "jade."

Although China's relationship with nephrite jade (the original Stone of Heaven) has spanned more than 5,000 years, many in modern-day China seem to believe that only jadeite jade is historic, valuable, and worthy of reverence. This book does little to correct such misconceptions. Also, instead of the usually accepted story of China's introduction to jadeite in the 1780s with the arrival of some colorful material as part of a new trade pact, the author describes Chinese traders discovering jadeite pebbles inside Burma—with no historical evidence provided to support this theory.

It is interesting to read how the Chinese classify different types of jadeite cobbles and boulders from secondary deposits. Western dealers and buyers rarely encounter such colorful terms as "New Mine Skinless Stone," "Mountain Stone," "Surface Water Stone," "River Stone," or "Surface Stone," so the author's descriptions here may be helpful.

The author calls dyeing "artificial treatments" and attributes the increased prevalence of treated jade to a growing population of better-paid consumers. I believe she is referring to the population of China. She writes on p. 98, "With the rapid growth of populations and the improvement of economic living standards, people are increasingly in pursuit of a better cultural living standard too. A result has been, a growing demand for the enhancement of the beauty of jadeite jade ornaments, for either enjoyment or appraisal." I believe the author is much too kind to those who dye jadeite, usually without disclosure. In most cases, gem materials are treated primarily to increase their potential sale value, and such is undoubtedly the case with dyed jadeite.

Nevertheless, the section on treatments is well done and should help buyers better understand how jadeite is enhanced today. In my experience, the treatments are many and disclosures are few, so this could be the book's most useful chapter. It certainly should help buyers know what to look for and show specialists how to detect various jadeite treatments.

As a final comment, although there is some useful information in this book, it deserves a better presentation. Before another edition, the entire text should be edited, typographic and grammatical errors removed, and the whole book reviewed by a qualified English text editor. It would be very difficult to recommend this English version in its current state.

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### **Pegmatology: Pegmatite Mineralogy, Petrology and Petrogenesis**

*By William "Skip" Simmons, Karen L. Webber, Alexander U. Falster, and James W. Niamoff, 176 pp., illus., publ. by Rubellite Press, New Orleans, LA, 2003. US\$47.50*

"Pegmatites are among the most fascinating of all igneous rock types." So say the authors of this welcome tome, and I—having spent my entire professional career intrigued by these dramatic deposits—could not agree more. Pegmatites are characterized, at least in part, by very coarse crystalline texture; indeed, some of the largest crystals known have been found in pegmatites. Some types of pegmatites also contain a diverse suite of rare minerals, including gem materials such as tourmaline, aquamarine, kunzite, topaz, and spessartine.

There have been many recent advances in the scientific understanding of pegmatites, but this is the first contemporary book on the topic. To gain a reasonable perspective on the nature of pegmatites, it was heretofore necessary to comb the geologic

literature for relevant scientific papers, assimilate all the information, weigh the interpretations of a variety of researchers, and integrate it all into a cohesive package. The authors of *Pegmatology* have done all that, and the result is an authoritative and very readable publication.

This book grew out of a guidebook written for the Maine Pegmatite Workshop, first held in May 2002. In the authors' words, "This book is not intended for the professional mineralogist or petrologist, but does contain a sufficiently comprehensive coverage that the serious reader can develop a thorough understanding of pegmatite mineralogy and genesis." In recognition of their intended audience, namely miners and serious mineral collectors interested in learning more about pegmatites, the authors have endeavored to limit scientific jargon to that necessary to explain clearly the mineralogical and geologic concepts and processes. In general, they have succeeded well, although readers with little or no background in geology and mineralogy will probably find themselves a bit lost at times. At the other extreme, the authors' disclaimer notwithstanding, professional mineralogists and petrologists will find this book a great place to start getting up to speed on recent advances in the study of pegmatites.

Chapter one provides a brief overview of what a pegmatite is and how pegmatites are classified. Chapter two explains key geologic and mineralogical concepts (e.g., plate tectonics, the composition of the earth's crust, the atomic structure of minerals, and the rock cycle) that are essential to the subsequent explanation of pegmatite formation. Chapters three through eight take the reader through the genesis of pegmatites: magmatic differentiation, origin of magmas, plate tectonic setting for magma generation, granite to pegmatite, zonation of pegmatites, and pocket formation.

Chapter nine, by far the book's largest, is titled Pegmatite Mineralogy. It describes the most important and/or scientifically significant pegmatite

minerals. The descriptions, for the most part, focus on those aspects of the minerals that pertain to their occurrence in pegmatites. Although the treatment is very uneven, with some minerals or mineral groups receiving much more attention than others, this approach was followed because of the special insights that certain minerals provide. Still, it does seem a bit lopsided to devote 18 pages to the tourmaline group and just one paragraph to topaz.

The last six chapters pick up where the first eight left off. They cover classification of pegmatites, pocket indicators, volatiles in pegmatites, cooling and crystallization of pegmatites, petrogenic indicators, and geophysical and geochemical exploration methods. I must admit that I don't quite understand the rationale for separating the last six chapters from the first eight (with the mineral descriptions in between). After reading the first eight chapters, I thought there were a few aspects of pegmatite formation that the authors had neglected. Of course, I came across these later in the book, but not until I had spent some time worrying about why they hadn't been addressed. Perhaps the authors would consider placing the Pegmatite Mineralogy chapter last in subsequent editions.

The book concludes with a list of references and an appendix. I sometimes skip right to the reference list to get a quick gauge of how thorough, comprehensive, and authoritative a publication is; *Pegmatology* passed this test with flying colors. The appendix includes several pages on basic crystallography, a periodic table, a list of elements with crustal abundances, and a diagram showing igneous rock classification. The authors apparently found these resources useful while teaching the pegmatite workshop. Two additions that I would recommend in future editions are an index and a glossary of terms.

I have a few final words concerning the overall presentation. First, except for a few typos, the text is

remarkably error free. Second, the text is liberally illustrated with well-chosen photos, diagrams, and tables; however, the overall quality of these illustrations could be much better. Last, little is said of the fascinating history of pegmatite study, and the addition of a chapter on this topic would add flavor to the book and put the modern studies into better context.

This book may not be for everyone, but certainly anyone with an interest in pegmatites and the wonderful diversity of minerals and gems that come from these remarkable deposits should not be without it.

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## OTHER BOOKS RECEIVED

**At the Bench: An Illustrated Guide to Working with Gold & Silver.** By Gregg Todd and Greg Gilman, 116 pp., illus., publ. by MJS/AJM Press, Providence, RI, 2002, US\$28.50.\* More than a guide to working with these two metals, *At the Bench* is an essential resource for every bench jeweler. The 8.5 × 11 in. soft cover begins with a section on Bench Preparation and Practices that covers critical safety matters, discusses proper tools and accessories, and offers suggestions to maximize workflow. The next chapter addresses take-in procedures, giving useful tips about visual inspection and communication between jeweler and customer.

The bulk of the book provides comprehensive instruction on a range of repair and fabrication processes, from basics like dovetail sizing and pavé setting to more complex tasks like fabricating silver filigree and repoussé. More than 200 detailed photos accompany the step-by-step directions. A chapter on The Do's and Don'ts for Polishing Success gives necessary attention to one of the bench jeweler's least desirable tasks. The book closes with a section called

Bench Resources that highlights some of the industry's leading suppliers and educators.

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*\*This book is available for purchase through the GIA Bookstore, 5345 Armada Drive, Carlsbad, CA 92008. Telephone: (800) 421-7250, ext. 4200; outside the U.S. (760) 603-4200. Fax: (760) 603-4266.*