

## REVIEWS

*Volcanism*. By Hans-Ulrich Schminke. Berlin: Springer, 2004. 324 pages, 401 figures. \$79.95 cloth.

Volcanology is a scientific field marked with spectacular direct observations. This book comes from a lifetime of volcanological field experience all over the world from a leading professor of volcanology who lectures to students regularly and who explains thoroughly and well. The book is based on the author's lecture materials, and Schminke convinced the publishers to use full-color, high-quality illustrations on every page (except the references and index pages). These figures make this volume exceptionally valuable to students and instructors. The photographs, historic figures, and charts and figures, redrafted in color from published science articles, are done thoughtfully and carefully and will be very widely used. They are the essence of the book because they transmit its content richly. The book consists of 15 chapters that cover a scope similar to that of other volcanology textbooks. It is written for anyone with a basic science background and would be appropriate as a text for an upper-level college class in volcanology. Field photographs are very carefully selected, so that even for famous sites that are frequently visited, Schminke's selected pictures may be the best yet published. The chapters about physical volcanology are especially strikingly illustrated, and photomicrographs throughout are also excellent. Every volcanologist will be pleased. The book communicates volcanology well. It could attract newcomers to this highly interdisciplinary field because the illustrations show brilliantly and clearly observations where creative science input is needed. The price is low in view of the 396 color illustrations. I particularly recommend this volume to those who wish to experience or visualize volcanology.

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*Minerals: Their Constitution and Origin*. By Hans-Rudolf Wenk and Andrei Bulakh. New York: Cambridge University Press, 2004. 646 pages, 389 line diagrams, 77 half-tones, 62 color plates, 20 tables.

Mineralogy is booming in so many directions that teaching is or should be changing drastically. The old track of

learning about hand specimens retains its value for many career mineralogists, but other mineralogists require more physics, chemistry, mathematics, and biology. This text is stated to be an introduction to mineralogy for undergraduate and graduate students in all fields of geology, materials science, and environmental sciences. It aims to focus more tightly on concepts than on existing texts and to minimize nomenclature. In general, the writers meet their goal. Part 1 covers structures, bonding, symmetry, polymorphism, and so on. Part 2 explains x-ray diffraction, optical microscopy, and advanced analytical techniques. Part 3 examines hand specimen identification, phase equilibria, and sedimentary, hydrothermal, metamorphic, and igneous processes. Part 4 covers 200 minerals. Part 5 deals with applied mineralogy (metal deposits, gems, cement, human health) and explores the mineralogy of the evolution of the Earth. Instructors are invited to select from the 35 chapters those that fit their needs. The following comments could be considered in a second edition. The structure diagrams are all in 2-D projection, whereas 3-D would be helpful. The zeolite section omits faujasite, which is the basis of the remarkable increase in the yield of gasoline from petroleum following replacement of amorphous catalysts about 1960. The feldspar section gives relevant features, except the likelihood of surface alteration forming a silica-stable cover, causing quartz and feldspar in granite to weather at similar rates. The section on the moon does not emphasize the remarkable compositions of the minerals. Perhaps emphasis should have been placed on arsenic and mercury poisoning. Turning the pages, I saw no obvious errors in the text, but there are printing errors on the title page and on table 2.2 and various figures and legends—microline, for example. On the whole this text covers the demands of the new mineralogy well. It will be fascinating to see how successful it is in capturing a part of the total market. I suspect that it will do best in programs with heavy concentrations of mineralogy. Instructors at other schools may find the density of material too heavy. Nevertheless, they should welcome the opportunity to upgrade at least part of their course.

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