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Joule, John A. Heterocyclic Chemistry (Book Review)

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to students taking courses in fishery biology, marine biology, and natural resource management. The volume includes a complete list of references and a useful index. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates and graduate students.—*J. C. Briggs, emeritus, Oregon State University*

Chemistry

48-3286 QD162 2009-54365 CIP

Fisher, David E. **Much ado about (practically) nothing: a history of the noble gases.** Oxford, 2010. 264p index afp ISBN 9780195393965, $24.95

The subtitle of this book by Fisher (emer., geological science and cosmochemistry, Univ. of Miami) is misleading. It is not so much a history of the noble gases—helium, neon, argon, krypton, xenon, and radon—as a personal memoir of the author's career in using them as radiogenic tracers to research questions involving the history of the solar system, the composition of Earth's mantle, and the origins of meteorites. The author also relays, perhaps in too much detail, issues with his colleagues and elders at Cornell and Brookhaven. The book covers some history of science topics very commonly written about, for example, Rutherford and Marsden's discovery of the nuclear nature of atoms, with well-known quotes from major scientists of the late-19th and early-20th centuries, in layperson's terms. There is not a word about the chemical behavior of the "noble" gases, because it is not relevant to Fisher's viewpoint. The book would have benefitted from better editing to correct errors. For example, "petrologist" is not a synonym for "petroleum geologist," and it was Harold (Hap) McSween, not McSweeny, who suggested that SNC meteorites came from Mars. **Summing Up:** Optional. ★ Lower-division undergraduates and general readers.—*T. R. Blackburn, formerly, American Chemical Society*

48-3287 QC879 MARC

Holloway, Ann M. **Atmospheric chemistry,** by Ann M. Holloway and Richard P. Wayne. Royal Society of Chemistry, 2010. 271p bibl index afp ISBN 9781847558077, $59.95

This interesting, well-written book covers the chemistry of the stratosphere, particularly with relevance to ozone and the several catalytic destruction cycles. Holloway (Univ. of Oxford, UK) and Wayne (emer., Univ. of Oxford, UK; *Chemistry of Atmospheres*, 3rd ed., 2000, 2nd ed., CH, Feb'92, 29-3358) clearly discuss the chemistry of the free troposphere and the chemistry of photochemical smog with suitable caveats concerning the importance of atmospheric physics. This reviewer might have included a little more mathematics in the text—for instance, a derivation of the photochemical stationary state equation for photochemical ozone. The final chapter, "Man's Adverse Influences on the Atmosphere," explores such topics as acid rain, pollution, and climate change. The work is very readable and thoroughly researched. Aside from some very minor issues with word usage in the text, *Atmospheric Chemistry* is high on this reviewer's list of books to suggest to anyone interested in a broad, evenhanded introduction to this field of study. **Summing Up:** Highly recommended. ★★★ All levels/libraries.—*D. H. Stedman, University of Denver*

48-3288 QD400 2009-28759 CIP

Joule, John A. **Heterocyclic chemistry,** by John A. Joule and Keith Mills. 5th ed. Wiley-Blackwell, 2010. 689p bibl index ISBN 1405193654, ; ISBN 1405133007, ISBN 9781405193658, $195.00; ISBN 9781405133005, pbk $59.95

This rather large work by Joule (emer., Univ. of Manchester, UK) and Mills (consultant; formerly, GlaxoSmithKline, UK) is at its heart a compendium of the synthesis and reactions of the major classes of heterocycles. Additional materials cover applications of heterocycles in medicine and biochemistry. Each of the 33 sections contains a large number of reactions that are well diagrammed, with color used to highlight the structural changes. All material is well referenced (more than 4,000 citations throughout the volume), and the references appear to be up-to-date. The work seems most valuable as a resource for researchers in the area, especially the detailed discussions that classify specific reactions. However, the series of chapters introducing each class of heterocycles, as well as the end-of-chapter exercises, also make the work useful for advanced undergraduate and graduate-level courses. The fifth edition (4th ed., 2001; 1st ed., 1972) adds more ancillary material and updates the older content found in previous versions. **Summing Up:** Recommended. ★★ Chemistry collections serving upper-division undergraduates and above.—*J. H. Glans, Sacred Heart University*

48-3289 QD248 2009-25749 CIP

Rocke, Alan J. **Image and reality: Kekulé, Kopp, and the scientific imagination.** Chicago, 2010. 375p bibl index afp ISBN 0226723321, $45.00; ISBN 9780226723327, $45.00

Of all the sciences, chemistry is extensively visual in its communication and learning. Concepts of atoms, molecules, and chemical structure are both abstract and graphic, and are unique to chemical information. About 150 years ago, a group of chemist visionaries revolutionized these concepts, supplanting the previous stark symbolism. Rocke (Case Western Reserve Univ.; *Nationalizing Science*, CH, Oct'01, 39-0910; *The Quiet Revolution*, CH, May'94, 31-4923) focuses primarily on August Kekulé, who studied chemical bonding and structure. Other chemists did not believe his (in)famous "dream" (in his words, "reverie") about the ring structure of benzene and similar molecules. However, the concept as well as the inspiration were found to be true (the latter demonstrated by this book's author). Several current articles have revealed a continuing widespread interest in (day) dreaming and visualization. Dream or daydream, it does not matter. Kekulé's vision has greatly benefited the sciences. Students and teachers alike are indebted to Kekulé and other pioneering visionaries who have made communication, teaching, and learning about chemistry—from the chalkboard to the computer screen—much more accessible and understandable. This work will be especially interesting to students and teachers of chemistry, science history, psychology, cognition, and communication. **Summing Up:** Highly recommended. ★★★ All collections.—*R. E. Buntrock, formerly, University of Maine*

Earth Science

48-3290 GC1018 2010-2005 CIP

Agardy, Tundi. **Ocean zoning: making marine management more effective.** Earthscan Publications Ltd., 2010. 220p bibl index afp ISBN 1844078221, $85.00; ISBN 9781844078226, $85.00

Many management strategies designed to sustain ocean resources indefinitely have foundered on the rocks of economic pressures, social