

SCIENCE & TECHNOLOGY

49-1418 QA40 2010-21872 CIP

Chernoutsan, A. I. **A concise handbook of mathematics, physics, and engineering sciences**, by A. I. Chernoutsan et al.; ed. by Andrei D. Polyaniin and Alexei I. Chernoutsan. CRC Press, 2011. 1,097p bibl index afp ISBN 143980639X, \$99.95; ISBN 9781439806395, \$99.95

This massive "concise" handbook presents a variety of fundamental formulas and theorems that describe various physical and mathematical phenomena in brief form in three general areas. Part 1, "Mathematics," includes analytical geometry, algebra, differential and integral calculus, ordinary and partial differential equations, transforms, probability theory, etc. Part 2, "Physics," covers molecular physics, thermodynamics, electricity and magnetism, waves, optics, quantum mechanics, atomic physics, etc. The final section, "Elements of Applied and Engineering Sciences," includes dimensional analysis, mechanics, strength of materials, hydromechanics, mass and heat transfer, electrical engineering, and more. The absence of derivations or proofs results in a "cookbook" format of the topics covered, although occasional examples are scattered throughout. Each chapter includes a bibliography, but unfortunately no references are cited for any of the material. The editors and contributors are all Russian academics, mainly in various fields of applied physics, with considerable experience in their respective fields. The nature of the presentation is typical of that of most Russian technical books/papers; i.e., the generalized fundamental descriptions of the topics are emphasized over the practical applications, although a distinct effort has been made to avoid unconventional notation, and many English publications are included in the various bibliographies. **Summing Up:** Recommended. ★★ Upper-division undergraduates and above.—*R. Darby, emeritus, Texas A&M University*

49-1419 [Internet Resource]

MIT World: Distributed Intelligence

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[Visited Aug'11] *MIT World* offers 24/7 open access to more than 800 key video presentations given by MIT faculty and guest speakers since 2001. The site adds and permanently retains 120 videos annually through its weekly publishing schedule. The presentations are full-length lectures, symposia, and panel discussions on various topics related to architecture, the humanities, management, science, sustainability, technology, and more. There are currently 250 videos available for download through *iTunes*. To access the videos, users may conduct basic keyword searches or browse by speakers, who include Nobel laureates and experts from outside MIT. The Explore Ideas section features a cloud/waterfall of words (tags) that users may click on to select videos on a random basis; refreshing the screen changes the words. There are tabs for Most Recent, Most Popular, Editor's Picks, and Upcoming at MIT World.

Each video includes a text summary, a list of related videos, the date and time of the video, information about the speaker and host, and related materials. The sound and visual quality of the videos is good; segmenting of videos is not available. Users may share videos by embedding the link on a Web site or e-mailing the link. Site visitors can register to receive RSS feeds or e-mail notifications of current releases. Many universities offer similar services, such as Yale's *Open Yale Courses* <http://videlectures.net/yale_oyc/> (CH, Jun'08, 45-5706) and the University of California's *UCTV* <<http://www.uctv.tv/>>. Overall, *MIT*

World is an important collection of videos and a good method for preserving and freely sharing knowledge on a wide range of subjects.

Summing Up: Recommended. ★★ Upper-division undergraduates, graduate students, and researchers/faculty.—*M. S. McCullough, Monroe Community College*

49-1420 QC903 2011-5024 CIP

Russell, James S. **The agile city: building well-being and wealth in an era of climate change**. Island Press, 2011. 290p index afp ISBN 9781597267243, \$35.00

This is a book about space and the city—and time, and taxes, and transportation. Land use or misuse in built environments is one focus of this provocative, readable book; the other is sustainable architecture. The issues, as architecture and environmental design writer Russell (*Bloomberg News*) states, can be approached by solutions both "pioneering and quotidian," and in this vein, his common-sense perspective combines practical and sometimes highly idealistic concepts. With an understanding of broad, tangentially related topics like urban ecology, planning, sociology, government, economics, and real estate development, Russell brings new perspectives to entrenched urban problems. In numerous examples of sustainable buildings and communities, both domestic and international, he provides models for reconfiguring the way building/construction is carried out in the US. The language in this book is sometimes poetic, sometimes elliptical and a bit hard to follow, but always thought provoking. Russell poses problems and offers solutions that span oceans and continents, whose large diverse cities may have more in common than exurbs in a given metropolitan region. This reviewer is always on the lookout for a book that will suit his undergraduates in environmental science, and this one comes close. **Summing Up:** Highly recommended. ★★★ All undergraduate students and general readers.—*S. Hammer, Boston University*

49-1421 Q143 2010-53174 CIP

Smith, Justin E. H. **Divine machines: Leibniz and the sciences of life**. Princeton, 2011. 380p bibl index afp ISBN 9780691141787, \$45.00

Leibniz famously wrote: "He who knows me only by my published writings does not know me at all." One of the major benefits of today's Internet-connected age is that people are now able to know thinkers through all of their written work. This flurry of Internet "publication," if it can be called that, of manuscripts has led to a fundamental rethinking of past thinkers' ideas. Into this arena steps Smith (philosophy, Concordia Univ., Montreal, Canada) with his *Divine Machines*. Smith contends that Leibniz was fundamentally a student of what one would now call biology in contradistinction to Cartesian mechanistic physics. Whether indeed this is accurate will be debated for years to come, but Smith has contributed enormously to the debate. And this is what makes philosophy appealing—the contrast of rival ideas in an attempt to ferret out the correct one. Perhaps Smith's interpretation is based too much on modern disputes around biology as a scientific enterprise. Nevertheless, the joy is in the philosophical journey. This is not a text for lay readers, but if one is a serious student of thought, texts like Smith's are a pleasure.

Summing Up: Highly recommended. ★★★ Graduate students and above.—*B. Mitchell, Gibbs College of Boston*

49-1422 [Internet Resource]

Visionlearning

URL: <http://www.visionlearning.com/>

[Visited Aug'11] *Visionlearning* is an open access educational



resource for teachers and students in the science, technology, engineering, and mathematics (STEM) disciplines. Funded by the National Science Foundation, it provides first-class teaching materials that can supplement or substitute for traditional textbooks. Part of *Visionlearning's* mission is to assist teachers in relating scientific processes and scientific inquiry to real-world situations and problems. The site centers on the Library, which is an award-winning collection of peer-reviewed learning modules created by educators and scientists. The About Us section provides background information on all authors and reviewers. Modules are listed under a broad range of categories including Biology, Chemistry, Physics, Trigonometry, and Toxicology and Pharmacology. Interdisciplinary categories such as General Science and Process of Science are also covered. Each category contains text-based modules focusing on specific topics such as plate tectonics or gravity. These modules are detailed, well written, highly focused, and visually appealing. Accompanying each module is an online quiz that scores users' results and provides correct answers upon completion.

The site is well organized and usable; a breadcrumb trail allows for easy backtracking. Menus are simple and uncluttered. The Help section is extensive and includes an option for users to submit questions. One of the most useful features is MyClassroom, which allows teachers to create a space within the site to manage their own course home page and syllabus and incorporate any of the modules into this space. To use the system, teachers must first register online (free). Students must also register at no cost to access their teachers' online classrooms. *Visionlearning* offers an app for iPhone, an accompanying blog focused on issues in science teaching, and a Facebook page, all of which serve to further link users together. **Summing Up:** Highly recommended. ★★★ All undergraduate students, high school students, educators, and general readers.—*S. M. Frey, Indiana State University*

History of Science & Technology

49-1423 BP190 MARC
Freely, John. **Light from the East: how the science of medieval Islam helped to shape the Western world.** I.B. Tauris, 2011. 238p bibl index ISBN 9781848854529, \$28.00

While Europe spent the 6th through the 11th centuries gripped in the Dark Ages, the Islamic world basked in a Golden Age of scholarship in science, particularly astronomy, mathematics, and medicine. Freely (physics and history of science, Bosphorus Univ., Turkey; *Aladdin's Lamp*, CH, Jul'09, 46-6165; *The Grand Turk*, CH, Aug'10, 47-7040) has put together a scholarly but accessible and clear account of how Islamic scholars preserved ancient Greek and Egyptian knowledge while greatly adding to it. He then tells of how Islamic knowledge reached Europe to spark the Renaissance. One of Freely's main points is that the West has forgotten the debt it owes to the Islamic world. This well-documented history of Islamic science, with extensive chapter notes, will be a valuable resource for history of science scholars. The text can also stand alone as a good read for anyone interested in this period of Middle Eastern and European culture. **Summing Up:** Recommended. ★★ Upper-division undergraduates and above; general readers.—*C. G. Wood, formerly, Eastern Maine Community College*

49-1424 Q125 2011-4071 CIP
Kwa, Chunglin. **Styles of knowing: a new history of science from**

ancient times to the present, tr. by David McKay. Pittsburgh, 2011. 366p bibl index afp ISBN 9780822961512 pbk, \$27.95

This book will interest historians of science and philosophers of science, but it has a somewhat misleading title. It is about styles of doing science, and it is a history of those styles—not a general history of science. Alistair Crombie's *Styles of Scientific Thinking in the European Tradition* (CH, Oct'94, 32-0903) provides the six styles Kwa (Univ. of Amsterdam, Netherlands) discusses—deductive, experimental, hypothetical, taxonomic, statistical, and evolutionary—but Kwa's book is not a summary of Crombie's treatise. *Styles of Knowing* is translated from Dutch, and it incidentally provides a welcome introduction to Dutch history of science literature. Kwa accepts the differences between Plato and Aristotle's science without trying to explain it. When writing a 30-page chapter on botanical taxonomy, Kwa did not use *Landmarks of Botanical History* by Edward Greene et al. (1983), which discusses Lobel's classification, prior to Cesalpino's. However, the scope of this work is vast, and the author's mastery of relevant literature is generally good. The bibliography consists of secondary sources only. *Styles* is too abstract to be a good introductory text for history of science courses, but it could be a provocative resource for advanced courses in history of science and philosophy of science. **Summing Up:** Recommended. ★★ Upper-division undergraduates, graduate students, and researchers/faculty.—*F. N. Egerton, emeritus, University of Wisconsin—Parkside*

49-1425 Q173 2011-3484 CIP
Martínez, Alberto A. **Science secrets: the truth about Darwin's finches, Einstein's wife, and other myths.** Pittsburgh, 2011. 324p index afp ISBN 0822944073, \$24.95; ISBN 9780822944072, \$24.95

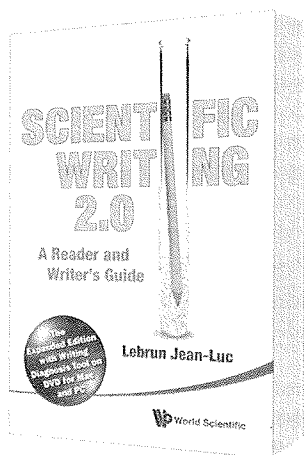
"Layers of conjecture have caked stories about dead scientists like plaster, paint, and acrylic gloss," says Martínez (Univ. of Texas, Austin; *Kinematics*, CH, Dec'09, 47-2063; *Negative Math*, CH, May'06, 43-5332) in his introduction. In this work, he carefully chips away at some venerable myths of science history to find the underlying facts. The fictitious nature of some of these stories is not surprising. Newton's apple just sounds like a myth. And would someone as intelligent as Benjamin Franklin really risk a crispy death by flying a kite in a thunderstorm? Other myths have managed to survive in relative respectability. Darwin's finches still appear in textbooks, despite their negligible role in the formation of his theories. But Martínez is not solely concerned with myth busting—he also wants his readers to understand the truths, both human and scientific, behind these myths. He does not shy away from difficult concepts, explaining such phenomena as Coulomb's experiments with electrostatic force in plain, accessible language. This book combines the best qualities of popular science writing with the thorough documentation that one would expect from a professional historian. **Summing Up:** Highly recommended. ★★★ All academic, general, and professional libraries.—*R. Gilmour, Ithaca College*

49-1426 Q127 2010-22421 CIP
Schäfer, Dagmar. **The crafting of the 10,000 things: knowledge and technology in seventeenth-century China.** Chicago, 2011. 344p bibl index afp ISBN 0226735842, \$45.00; ISBN 9780226735849, \$45.00

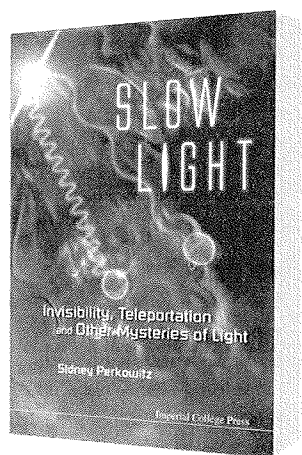
Schäfer (Max Planck Institute for the History of Science, Berlin, Germany) suggests that *Tiangong kaiwu* or *The Works of Heaven and the Inception of Things* (1637), by Song Yingxing, authorizes the study of technology as a scholarly field of inquiry. While she situates Song's documentation of 18 crafts and practical matters within the larger context



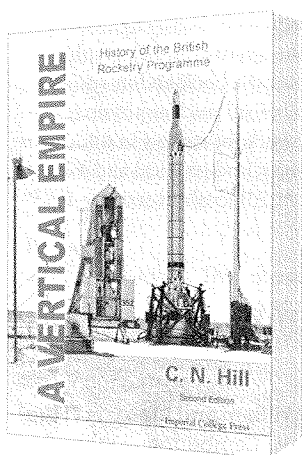
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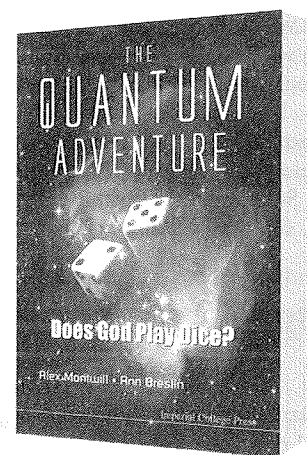
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978-981-4350-60-0(pbk) US\$35



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978-1-84816-795-7 US\$88
978-1-84816-796-4(pbk) US\$45



978-1-84816-647-9 US\$99
978-1-84816-648-6(pbk) US\$45

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of the early modern pursuit of certain knowledge in the sciences and technology, Schäfer remains committed to examining his work and its milieu in their own socioculturally embedded and distinctively Chinese terms. In addition to a comprehensive introduction and an informative epilogue, which examines the physical dissemination and response to *Works of Heaven* from the date of publication to the contemporary era, the volume includes six well-documented chapters. The first three chapters provide the context necessary for understanding Song's work, i.e., his life and philosophical perspectives as well as the sociopolitical realities of the Ming Dynasty. In the final three chapters, Schäfer focuses on Song's epistemology, cosmology, and systematic terminology for presenting "things and affairs." Useful appendixes support the text. An erudite, nuanced, and groundbreaking contribution to the study of science and technology in early modern China. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates and above; general readers.—*H. Doss, Wilbur Wright College, City Colleges of Chicago*

49-1427 Q127 MARC
Science and technology in nineteenth-century Ireland, ed. by Juliana Adelman and Éadaoin Agnew. Four Courts, 2011. 180p index ISBN 9781846822919, \$70.00

Adelman (Trinity College Dublin, UK) has been at the forefront of a recent flurry of scholarship on the history of science in 19th-century Ireland, including writing *Communities of Science in Nineteenth-century Ireland* (2009) and contributing to *Communities of Knowledge in*

Nineteenth-century Ireland, edited by Marc Caball and Clara Cullen (2009). In this volume, she and Agnew (Kingston Univ. London, UK) collected a variety of essays, written primarily by Irish contributors, and organized them in the following sections: "Innovations," "Individuals," and "Institutions." They aimed to emphasize the participation of non-elites in a science and technology that fully engaged with Irish literary and religious culture. For example, Elizabeth Neswald considers the reception of the cold water cure in Cork in the 1840s, while Agnew evaluates science writer Mary Ward. Vandra Costello examines the machinations involved in the decision to open the National Botanic Gardens in Glasnevin on Sundays in 1861, and Sherra Murphy analyzes the rhetoric employed in newspapers to promote Dublin during the British Association for the Advancement of Science meeting in 1857. Overall, a useful contribution to the publisher's "Nineteenth-century Ireland" series. **Summing Up:** Recommended. ★★ Upper-division undergraduates and above; general readers.—*A. K. Ackerberg-Hastings, University of Maryland University College*

49-1428 QC773 2011-6408 CIP
Williams, Hill. Made in Hanford: the bomb that changed the world. Washington State, 2011. 190p bibl index afp ISBN 9780874223071 pbk, \$22.95

"Hometown Boy Makes Good": this hackneyed headline could be applied to the author of this fascinating book. Williams (formerly, *Seattle Times* science writer; *The Restless Northwest*, 2002) is the son of the



editor of the Pasco, Washington, newspaper, near the tiny Washington farm towns which were displaced by the Hanford plutonium plants. The editor, like many others, was sworn to press secrecy, adding to the mystery. The author, never a participant in the project, was a teenager when the plant was begun. Williams based the book on published and unpublished reports plus interviews with many of the participants, and weaves a fascinating story about the effects of the Hanford plants, not only on the Washington countryside, but on the war effort (the Nagasaki bomb), atomic testing, the Pacific Islands and islanders, and the entire world. Sections cover science aspects (very well), engineering, (physical, social, and the bomb itself), and the aftermaths. Biographies of the people involved are included throughout the book and in an epilogue. The Franck Report, written by concerned nuclear physicists, is summarized in an appendix. An interesting work for readers in numerous disciplines including science/technology, history, and political and social sciences. **Summing Up:** Recommended. ★★ All levels/libraries.—*R. E. Bunrock, formerly, University of Maine*

Astronautics & Astronomy

49-1429 QB35 2010-43090 CIP
Becker, Barbara J. **Unravelling starlight: William and Margaret Huggins and the rise of the new astronomy.** Cambridge, 2011. 380p bibl index ISBN 110700229X, \$110.00; ISBN 9781107002296, \$110.00

In an expansion of her doctoral dissertation, science historian Becker (ret., Univ. of California, Irvine) investigates British amateur astronomer William Huggins (1824-1910). The author traces the life and work of Huggins from his beginnings as a self-educated individual in middle-class society to his later becoming president of the Royal Society and achieving knighthood. Huggins, and eventually his widow, carefully protected his priority in developing astronomical spectroscopy through his 1897 essay, "The New Astronomy" (included as an appendix), and attentively responding to rivals. Becker examined unpublished notebooks and correspondence to reexamine Huggins, his failures, and his successes. She details the arguments over priority and science with others of his era, the support he sought from American astronomers for his theories, and the contributions of Margaret, especially concerning the use of photography, to what became their joint (if not totally acknowledged at the time) research. The reader is left with a portrait of a man who was inventive with instrumentation, careful with tedious observations, and fiercely protective of his legacy. The text offers an engaging view of research and controversy in 19th-century science. Nicely illustrated with copious endnotes, this scholarly work is valuable for students or faculty interested in the history of science. **Summing Up:** Recommended. ★★ All academic, general, and professional audiences.—*M.-K. Hemenway, University of Texas at Austin*

49-1430 TL795 M A R C
Harvey, Brian. **Russian space probes: scientific discoveries and future missions,** by Brian Harvey with Olga Zakutnyaya. Springer, 2011. 514p bibl index afp ISBN 9781441981493 pbk, \$44.95; ISBN 9781441981509 e-book, contact publisher for price

This well-researched book begins with a discussion of early Soviet balloon flights, followed by coverage of the Sputnik era and the Soviet lunar, Venus, and Mars probes. Harvey, a prolific author of space exploration books (*The Rebirth of the Russian Space Program*, CH, Dec'07,

45-2002, etc.), and Zakutnyaya, a science journalist, provide good descriptions of numerous Soviet experiments related to space biology and materials science. These include the biology experiments on *Korabl Sputnik*, human experiments on *Vostok* and *Voskhod*, animal experiments (dogs on *Cosmos 110*, turtles around the moon on *Zond*), space science on *Soyuz* and *Salyut*, the orbital materials processing plant on *Salyut 5*, and the extensive results from the *Mir* Space Station and, finally, the International Space Station. The book also contains highly detailed descriptions of the results of the wide-ranging studies of the planet Venus, along with the results of astronomical and astrophysical investigations. Overall, the book provides an excellent account of the extensive scientific results/accomplishments of Soviet space programs. Many are not known, or not well known, to Western scientists, and several discoveries were named by and attributed to Western scientists who were not aware of the original work. An important contribution to the history of space science. **Summing Up:** Highly recommended. ★★★ All readers.—*A. M. Strauss, Vanderbilt University*

49-1431 QB501 M A R C
Lang, Kenneth R. **The Cambridge guide to the solar system.** 2nd ed. Cambridge, 2011. 475p indexes ISBN 0521198577, \$58.00; ISBN 9780521198578, \$58.00

Lang (Tufts Univ.) has prepared a worthy successor to his earlier work (1st ed., CH, Apr'04, 41-4640). The writing is exceptionally lucid, authoritative, and comprehensive. The topics covered will engage novices, but the treatment is complete enough to satisfy many of the needs of experts. The book is thoughtfully illustrated with pictures that are attractive and diagrams that are well designed to illuminate the physical phenomena under discussion. Each chapter opens with a list of essential and/or engaging facts that outline its content, and many chapters conclude with a summary diagram that attempts to give a visual overview of the chapter. The book updates the material from the first edition and includes the early portion of the LCROSS and MESSENGER missions, the launching of *New Horizons* to Pluto, and the many asteroid and comet missions of the last decade. It concludes with a brief discussion of newly discovered exoplanets and what astronomers are learning from them. **Summing Up:** Highly recommended. ★★★ All students, advanced high school and above; researchers/faculty; professionals; general readers.—*J. R. Burciaga, Mount Holyoke College*

49-1432 QB856 2010-33387 CIP
Mackie, Glen. **Multiwavelength atlas of galaxies.** Cambridge, 2011. 256p bibl index ISBN 0521620627, \$145.00; ISBN 9780521620628, \$145.00

This volume will be a nice addition to any reference library, as well as to the personal bookshelves of researchers and graduate students. Its purpose is to illustrate the full breadth of properties seen in galaxies at high resolution, using the latest data in all wavebands. This it does admirably. Mackie (Swinburne Univ. of Technology, Australia) makes use of a restricted, "atlas sample" of 34 galaxies chosen from every class. The author selected these objects for both their proximity to Earth and the amount of data available. The data are of the best quality and the breadth of properties illustrated is tremendous. One could quibble with a few choices; in particular, none of the elliptical galaxies used are of the "nonactive" variety, and the dwarf classes are not fully sampled. However, these are minor issues, especially given the quality of the work and the usefulness of the images in this book. **Summing Up:** Recommended. ★★ Graduate students and above.—*E. S. Perlman, Florida Institute of Technology*



49-1433 QB65 2010-30380 CIP
Mullaney, James. **The Cambridge atlas of Herschel objects**, by James Mullaney and Wil Tirion. Cambridge, 2011. 183p ISBN 0521138175 ring binder, \$35.00; ISBN 9780521138178 ring binder, \$35.00

Experienced observer Mullaney and celestial cartographer Tirion have compiled an excellent observing reference on the nebulous objects that William and Caroline Herschel cataloged two centuries ago. Although they did not know it, the Herschels truly ushered in the modern age of extragalactic astronomy. The atlas begins with a short biography of the Herschels, observing tips, a concise observing list of the best "Herschel showpieces," and useful references. It is spiral bound in a large "night friendly" format, with lightly colored alternate lines in tables to facilitate low-light reading. The bulk of the atlas consists of charts and data tables for all 2,500-plus Herschel objects, organized in declination bands from north polar cap to south, each in order of right ascension. Special charts are provided for the rich fields in Coma and the Magellanic Clouds. The charts are of high quality—similar to those in Tirion's previous sky maps. Many other atlases list deep sky objects, but Mullaney and Tirion claim this is the only one with all the Herschel objects. Any deep-sky observer will want a copy. **Summing Up:** Highly recommended. ★★ Students of all levels and general readers/observers.—*T. D. Oswalt, Florida Institute of Technology*

49-1434 QB466 2010-26629 CIP
Physical processes in circumstellar disks around young stars, ed. by Paulo J. V. Garcia. Chicago, 2011. 422p bibl afp ISBN 9780226282282, \$150.00; ISBN 9780226282299 pbk, \$55.00

This eight-chapter work, with contributions from 14 authors, explores in detail the formation and evolution of disks that surround young stars. This disk material evolves from the interstellar medium and gravitates by accretion into protoplanets and disks. Processes that include gravitation, hydrodynamics, magnetohydrodynamics, magnetic fields, and the processing of dust play significant roles, depending on the evolutionary status of the central stars they surround. Computer models are important to understand these processes, including how long these disks last and how they disperse. The presentation is highly technical, with liberal use of calculus and detailed derivations of fundamental equations that will appeal to experts in this narrow field of astronomical interest. Each chapter ends with an extensive list of technical published papers. Figures and diagrams are small but adequate. Eight pages in color contain a mixture of observations and computer model output. The volume lacks an index and a glossary of acronyms. Though this book will appeal to astrophysicists working in the field and other physical scientists who may gain from reading the introductions and conclusions, it is not appropriate for nonspecialists. **Summing Up:** Recommended. ★★ Researchers, faculty, and professionals.—*W. E. Howard III, formerly, Universities Space Research Association*

49-1435 QB465 2011-411319 MARC
Tennyson, Jonathan. **Astronomical spectroscopy: an introduction to the atomic and molecular physics of astronomical spectra**. 2nd ed. World Scientific, 2011. 223p bibl index ISBN 9789814291965, \$65.00; ISBN 9789814291972 pbk, \$40.00

The spectra of astronomical objects form the basis for understanding the structure and evolution of extrasolar objects, such as stars and galaxies, and assorted exotic objects, such as quasars. Spectra are also the most important tool in understanding the evolution and structure of the universe: cosmology. This book is based on an undergraduate course that

Tennyson taught at University College London, UK. This new edition (1st ed., 2005) can serve as a practical guide for upper-level college students and for researchers whose background in quantum mechanics needs some enrichment. The first two chapters introduce the basic ideas of absorption, emission, Einstein coefficients, and optical depth. Several subsequent chapters are a quick study in the quantum description of hydrogen, helium, and more complex atoms. It would be helpful if the reader has previous exposure to these ideas. The Schrödinger equation is "produced," and examples of wave functions illustrated. Later discussion also includes spectra of nebulae, the effects of magnetic fields, and molecule structure. These contain detailed figures of the spectra and are integrated with the theory. The last chapters address special topics such as rotational and vibrational spectra. The text is clear and readable. A valuable acquisition for academic libraries. **Summing Up:** Highly recommended. ★★ Upper-division undergraduates and above.—*K. L. Schick, emeritus, Union College (NY)*

49-1436 QB581 MARC
Wilkinson, John. **The moon in close-up: a next generation astronomer's guide**. Springer, 2011 (c2010). 310p index afp ISBN 9783642148040 pbk, \$39.95; ISBN 9783642148057 e-book, contact publisher for price

Science instructor/writer Wilkinson does a good job of making the moon accessible to amateur astronomers and beginners, but there are better works for academic audiences. There are also many other books that cover how to observe the moon, such as Gerald North's *Observing the Moon* (2nd ed., CH, Apr'08, 45-4358). Chapter 4 covers basic equipment such as binoculars, various types of telescopes, and the use of CCD cameras. More experienced observers can skip this chapter. The unique feature of this book is chapter 6, "Studying the Moon," with 17 different "Study Areas." Only one chapter has a list of other books for further reading; a listing of books and journal articles for reference or further reading for the other chapters would have been helpful. The index and glossary are well done, and most of the figures are good, but some are not of the highest quality. For example, figure 4.6 has a crude drawing of an eclipse path over the Earth. In addition, another image should have been used on p. 115 to show Baily's beads. Overall, this book might be useful for nonscience undergraduate students taking an introductory astronomy class. **Summing Up:** Optional. ★ Lower-division undergraduates and general readers.—*J. R. Kraus, University of Denver*

Biology

49-1437 [Internet Resource]
Atlas of Living Australia
URL: <http://www.ala.org.au/>

[Visited Aug'11] The *Atlas of Living Australia* (ALA) is a five-year partnership of CSIRO (Australia's national science agency), the government of Australia, and various organizations and museums in the country with biological collections. ALA, created to serve as an accessible resource for comprehensive information on Australian biodiversity, is still under development. Those new to the site can receive assistance by reviewing the Get Started section. The Explore section provides opportunities to browse (e.g., Regions, Map Species, Collections) or search for information on plants or animals. Each species page provides extensive information, including photos, description, nomenclature,



distribution, and links to other relevant information. For example, the information on wattles (genus *Acacia*) is excellent, including content on human usage, evolution, and more. The Share section allows site visitors to contribute photos, data, and comments. Tabbed sections at the top of the main page help users learn about the site and offer contacts for more information. The Tools section provides resources for laypersons and researchers related to collecting and identifying species. Users familiar with the site can register and set up personal profiles.

On first impression, the site seems well organized and easy to navigate, with many interactive features. The Feedback section facilitates a second impression, with the help of users who have spent considerable time on the site. Most are impressed with the atlas, its intellectual integrity, its value as a shared resource, and its scholarly quality. Criticisms focus on functional matters, such as how slowly pages on the site load. Other comments relate to suggested improvements to data sharing. The Feedback section also posts the status of how a suggestion is being addressed. Overall, a useful resource for readers interested in learning more about Australian flora and fauna. **Summing Up:** Recommended. ★★ All levels/libraries.—*T. Johnson, Prescott Valley Public Library*

49-1438

[Internet Resource]

The Cell: An Image Library

URL: <http://cellimagelibrary.org/>

[Visited Aug'11] One of the most difficult concepts to impart to biology students is the critical difference between seeing something and truly observing it. Understanding structure and function in a biological system requires careful scrutiny. The American Society for Cell Biology (ASCB) has eased the path to observation and understanding by creating *The Cell*. This highly interactive site features still images, videos, and animations derived from the recent literature, as well as classic microscopy from earlier studies (matchless TEM images from the work of Don Fawcett are very welcome inclusions). This site offers much more than a mere atlas of microscopic anatomy, however. For each entry, information about the methodology used to create the image is included, as well as information about the featured process and/or cellular component. This additional content, which is extensive and easily searched, provides a rich context for the study of biological structure and process.

Further study of a structure, cell type, or study organism is facilitated by the inclusion of large tabs at the top of each page. A few clicks take readers from a particularly arresting image or video to a fuller presentation of a cell structure or a biological process. Observation, therefore, and not mere identification, is fostered in even a casual perusal of the site. Researchers are encouraged to submit their own images and videos for inclusion in the library, a feature that gives *The Cell* a uniquely interactive flavor. Publication in an ASCB venue is prestigious, so the society's sponsorship of this new site will ensure a steady flow of superb images that document scientists' growing understanding of cell structure and function. Teachers particularly will find this site a rich trove of material for their classes. **Summing Up:** Highly recommended. ★★★ Students of all levels, researchers, and educators.—*S. K. Sommers Smith, Boston University*

49-1439

QL696

2010-36542 CIP

Darwin's finches: readings in the evolution of a scientific paradigm, ed., with commentary, by Kathleen Donohue. Chicago, 2011. 492p bibl afp ISBN 9780226157702, \$120.00; ISBN 9780226157719 pbk, \$45.00

The literature about Darwin, and his finches, is enormous and almost

overwhelming. Donohue (Duke Univ.) has performed an outstanding service by making the finch story reasonably accessible. She approaches the material in a linear fashion, beginning with Darwin's research and culminating in present-day techniques and methodology. This collection points out the importance of observations and conclusions from many years in the past and the continuing significance of the type of studies Darwin conducted. The book is divided into three parts, with an excellent introduction to each. The material is further divided into 12 subsets, also with individual introductions that establish a subset's place in the overall continuum. The result is a volume of literature useful to the casual reader as well as to the researcher seeking a serious in-depth analysis. Darwin himself would be gratified by the attention given to what was never his main focus, but would appreciate the approval given to his work and the continuing exploration of his finches. An interesting anthology for students and scholars ready to be enlightened and sometimes entertained. **Summing Up:** Recommended. ★★ Academic and professional audiences, all levels.—*F. W. You, emeritus, Kenyon College*

49-1440

QH326

2010-35393 CIP

Deamer, David. **First life: discovering the connections between stars, cells, and how life began**. California, 2011. 272p bibl index afp ISBN 9780520258327, \$28.95

Deamer (biomolecular engineering, Univ. of California, Santa Cruz) examines one of the most fundamental precepts of astrobiology: the importance of unraveling the mysteries of how life on Earth originated. Only with a more thorough understanding of this phenomenon will scientists be able to gain a sufficiently universal appreciation of biology to have any hope of detecting extraterrestrial biosignatures. Building on a foundation of organic chemistry and biochemistry (readers need a fundamental knowledge of these subjects to clearly follow the discussions), Deamer considers multiple theories for the origin of prebiotic organic molecules. He places this into the perspective of Earth's early environment and the various mechanisms by which prebiotic chemistry might have led to the formation of complex organic polymers, enzyme catalysts, membrane-bound compartments, primitive metabolic/self-replicating systems, and early cellular life. The author argues in support of a cellular-based model for the origin of life, in which membrane-encapsulated vesicles containing organic macromolecules favored development of increasing biological complexity and ultimately led to the formation of protocells. This intriguing scholarly text offers many fascinating insights into origin-of-life research, and will be a valuable reference work for advanced undergraduate students interested in evolutionary biology, biochemistry, astrobiology, planetary science, and cosmology. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through researchers/faculty.—*D. A. Brass, independent scholar*

49-1441

QH450

2011-696 CIP

Francis, Richard C. **Epigenetics: the ultimate mystery of inheritance**. W.W. Norton, 2011. 234p bibl index ISBN 9780393070057, \$25.95

Epigenetics is broadly defined as the regulation of genetic expression not directly related to the base sequence in DNA itself. Several mechanisms may be involved, most notably the methylation or attachment of methyl groups to DNA or proteins (histones) associated with DNA. Changes in these patterns on chromosomes passed by the respective parents during fertilization account for variations in genetic patterns or diseases in the offspring. Francis (*Why Men Won't Ask for Directions*, CH, Jul'04, 41-6841), trained in neurobiology, provides an absorbing account of the



subject, using real-life examples to illustrate. The book begins with stories of the effects of starvation in the Netherlands during the last year of WW II; long-term effects showed an increased prevalence of obesity among children of mothers who experienced famine during the latter part of the pregnancy. The author proceeds to describe environmental effects on epigenetic changes that resulted from the famine. Much of the book describes phenotypic changes in animals, including humans, and plants, which result from altered extrachromosomal patterns, and the effects on gene regulation. The audience is primarily the lay public, though a basic scientific knowledge of genetics is helpful. Extensive bibliography. **Summing Up:** Recommended. ★★ All undergraduate students and general readers.—*R. Adler, University of Michigan, Dearborn*

49-1442 QP518 2011-4854 CIP
Hames, David. **Biochemistry**, by David Hames and Nigel Hooper. 4th ed. Garland Science, 2011. 473p bibl index ISBN 0415608457 pbk, \$40.00; ISBN 9780415608459 pbk, \$40.00

This brief work (approximately 200,000 words) is less than half the size of a typical biochemistry text (which can be over a half million words), a rarity in these days of textbook bloat. It is a revision of the third edition (2006) and is part of the "BIOS Instant Notes" series. There are no color photos and about one illustration or table per page, yet the book includes all the essentials for introductory courses. The 13 sections, with 3-8 chapters each (total 71), logically lead from macroscopic (cells) to molecular, via amino acids, proteins, enzymes, and nucleic acids (including structure and function), and end with traditional metabolism of carbohydrates, lipids, and nitrogen. Hames and Hooper (both, Univ. of Leeds, UK) intend this book for first-year university students, but it will also provide a core knowledge base for more advanced students. The 5-page list of further readings, 3-page glossary of abbreviations, and 18-page index support the text. Most index terms can be found in a *Wikipedia* article, so information on core concepts can be expanded indefinitely—beyond the coverage provided in any single book. **Summing Up:** Recommended. ★★ All levels of undergraduate students.—*L. C. Davis, Kansas State University*

49-1443 QH541 2010-49408 CIP
Hatcher, Paul. **Biological diversity: exploiters and exploited**, by Paul Hatcher and Nick Battey. Wiley-Blackwell, 2011. 427p bibl index ISBN 9780470778067, \$159.95; ISBN 9780470778074 pbk, \$79.95

Instead of writing a book specifically on biological diversity, Hatcher and Battey (both, Univ. of Reading, UK) provide a unique perspective of humans and their interaction with 19 other species. The authors present these interactions in the context of how humans use certain species (exploited) or how certain species use and rely on humans (exploitive). Part 1, "Exploited," includes chapters on bees, vegetables (legumes), silkworms, and more. Part 2, "Exploiters," covers topics such as mosquitoes and malaria, barnacles, and locusts. The writing is very straightforward, with relevant examples used to illustrate points. In the course of their writing, the authors include historical accounts, modern research findings, and anecdotal evidence to demonstrate interactions. The information is cross-disciplinary, drawing not only from biology and ecology but also from geology, oceanography, sociology, psychology, and other disciplines. This title is appropriate for undergraduate students in many disciplines, including biology. It will also be useful for readers interested in the ways humans interact with other species. **Summing Up:** Recommended. ★★ All readership levels.—*K. R. Thompson, Ozarks Technical Community College*

49-1444 QH332 2010-42481 CIP
The Ideal of nature: debates about biotechnology and the environment, ed. by Gregory E. Kaebnick. Johns Hopkins, 2011. 208p bibl index afp ISBN 9780801898884, \$55.00

In 1973, geneticists Herbert Boyer and Stanley N. Cohen ushered in the era of modern biotechnology. They developed the first successful recombinant DNA technique by introducing genetically engineered DNA molecules into bacteria. Since that momentous event, scientists have produced hundreds of genetically modified organisms commonly used in agricultural and commercial applications. In addition, biotechnology is dramatically changing the outlook of medical therapeutic strategies. However, with these developments come growing concerns about the ethics and safety of biotechnology applications. One particularly contentious issue is the view that biotechnology is unnatural and distorts people's view of nature. This book provides a critical assessment of how the discipline fits into contemporary ethical and moral systems. The authors are not taking a Luddite approach. Rather, they are examining how biotechnology may impact nature and human thinking. Much of the book evaluates past and contemporary views of ethics, morality, and nature. The authors discuss how biotechnology is currently used and abused based on people's various beliefs and justifications. Overall, each chapter builds arguments about the long-term ethical and moral benefits and risks of biotechnology. Ample references accompany each chapter. **Summing Up:** Recommended. ★★ Upper-division undergraduates through professionals; general readers.—*B. R. Shmaefsky, Lone Star College - Kingwood*

49-1445 QH507 2010-26309 CIP
Information and living systems: philosophical and scientific perspectives, ed. by George Terzis and Robert Arp. MIT, 2011. 414p index afp ISBN 0262201747, \$50.00; ISBN 9780262201742, \$50.00

This collection of essays brings some of the analytical tools of information theory to wide-ranging topics in biology including energy coupling, gene regulation, perception, and linguistics. The volume begins with an insightful introduction, followed by 13 chapters divided into three parts. Each chapter contains a full set of references. The editors and authors include internationally recognized experts in biology, philosophy of science, and psychology. The editors had hoped that the work would be "useful not only to fellow researchers, but also to advanced undergraduate students in both science and philosophy and perhaps to any thoughtful person who has been deeply struck by the fact that information is in some sense crucial to our understanding of the difference between living and inanimate matter." This work will certainly be thought provoking and useful for researchers in the field. However, many essays are highly technical and may be challenging for a non-expert reader. **Summing Up:** Recommended. ★★ Graduate students, researchers/faculty, and professionals.—*C. A. Klevickis, James Madison University*

49-1446 QP411 2010-30735 CIP
Korzeniewski, Bernard. **From neurons to self-consciousness: how the brain generates the mind**. Humanity Books, 2011. 193p bibl afp ISBN 1616142278 pbk, \$39.00; ISBN 9781616142278 pbk, \$39.00

The author of this slim volume expresses in the preface the concern that connecting the structure and function of the brain to mind and consciousness of self can become bogged down in details of anatomy and physiology. In his introduction, Korzeniewski (biophysics, Jagiellonian Univ., Poland) contends "that mind and self-consciousness [i.e., consciousness of self] are activities of the functioning of the human brain." Following his minimalist structure/function tenet, he describes



in 60 pages how single nerve cells function, how networks of nerve cells are constructed, and how they combine to provide brain structures/functions. The next 88 pages explore the development of feelings and emotions, the construction of mental images and consciousness of self, and the limitations on human cognition. An interesting chapter on artificial intelligence is also included. Illustration is minimal, with a total of 11 figures. Although there are no references within the text, text notes are organized by chapter in an appendix, along with a list of 29 suggested readings, mostly from *Scientific American* (1992-2004). These readings set a gauge for the range of audience for this book. Those who enjoy reading *Scientific American* will find *From Neurons to Self-Consciousness* of interest.

Summing Up: Recommended. ★★ Upper-division undergraduates and above.—L. A. Meserve, *Bowling Green State University*

49-1447 QH366 2010-28052 CIP
The Major transitions in evolution revisited, ed. by Brett Calcott and Kim Sterelny. MIT, 2011. 319p bibl index afp ISBN 0262015242, \$50.00; ISBN 9780262015240, \$50.00

The late John Maynard Smith and Eörs Szathmáry wrote *The Major Transitions in Evolution* in 1995 (CH, Nov'95, 33-1525). The influence of this book was substantial, and it spawned considerable debate and research in evolutionary biology. Since then, considerable progress has been made on the questions raised by Maynard Smith and Szathmáry. This work, edited by philosophers Calcott and Sterelny (both, Australian National Univ.), revisits major evolutionary transitions in light of new developments in the field. The book spans major themes in evolutionary biology. For example, it provides a critique of the framework by which scientists have examined the history of life, the evolution of cooperation and multicellularity, biological hierarchy and its implications for evolution, multilevel selection theory, differential evolvability of lineages, evolution in prokaryotes, and the origins of multicellularity and specialization. The editors introduce each major section of the book; Szathmáry coauthors the concluding chapter. A must read for biologists interested in major transitions and for philosophical biologists. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals.—R. B. Pratt, *California State University—Bakersfield*

© **49-1448** [Internet Resource]

NBII: Pollinators

URL: <http://www.nbii.gov/portal/server.pt/community/pollinators/222>

[Visited Aug'11] In the winter of 2006-07, an estimated 650,000 bee colonies were lost to an unexplained condition subsequently named colony collapse disorder. Until that time, most people probably gave little thought to the important role that pollinators play in agriculture and ecosystems. Due in large part to the devastating losses of that winter, much research has been conducted on bees in particular and pollinators in general. This website brings together in one place the extensive collection of information from the NBII Pollinators Project; it is actually a subcategory under the Ecological Topics tab of the NBII page (NBII is administered by the US Geological Survey). The site is a very rich resource, offering information for a wide range of users, including educators, gardeners, and biologists involved in research.

It is organized in a typical tripartite fashion. Users can navigate from 12 topic selections, such as Conservation, Pollinator Species, and Research, in the left frame. The References button links to a short list of books, although a couple links are not properly directed. The site also features an excellent digital slide show of bee identification. The Research button links users only to research conducted by USGS scientists. This is

unfortunate, as inclusion of research conducted by scientists not affiliated with USGS would provide a more thorough coverage of the topic. Site graphics are excellent and used judiciously. A search bar is embedded on all pages. When printing, users need to scale down the website in order to fit the content on a standard page, unless landscape orientation is chosen. Additional related resources include *Native Pollinators in Agriculture Project* <<http://www.agpollinators.org/>>, *Pollinator Partnership* <<http://www.pollinator.org/>>, and *The Xerces Society* <<http://www.xerces.org/>> (CH, Jan'11, 48-2681) Web sites. **Summing Up:** Highly recommended.

★★★ All levels/libraries.—C. M. Caretto, *Rochester College*

49-1449 QH361 2010-37299 CIP
Rogers, Alan R. **The evidence for evolution**. Chicago, 2011. 120p bibl index afp ISBN 9780226723822, \$45.00; ISBN 9780226723808 pbk, \$18.00

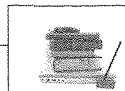
This book should have a ready market; misconceptions about evolution and evolutionary theory are the norm in the US today. Rogers (Univ. of Utah) makes the important point that almost all criticisms of evolutionary theory have the same basis: they are all arguments resulting from personal incredulity. Here, he attempts to relieve some of that incredulity and provide the knowledge needed to understand the evidence. Individual chapters are devoted to many of the most popular misconceptions (e.g., "Do Species Change?," "Does Evolution Make Big Changes?," "Has There Been Enough Time?," etc.). Each chapter outlines the evidence, with citations to the literature as needed. Nearly all these questions arose in Darwin's time and were originally (and effectively) addressed in *On the Origin of Species* (1859). Rogers then summarizes the evidence, old and new, in a paragraph or two. This is an effective strategy to reach someone who is genuinely incredulous and who can examine the evidence reasonably. Sadly, many evolution skeptics have not come to skepticism via reason, and thus reason cannot quell their skepticism.

Summing Up: Recommended. ★★ All readership levels.—D. A. Rintoul, *Kansas State University*

49-1450 QL795 2010-35062 CIP
Rose, Deborah Bird. **Wild dog dreaming: love and extinction**. Virginia, 2011. 168p bibl index afp ISBN 9780813930916, \$29.50; ISBN 9780813931074 e-book, contact publisher for price

This book is part of the "Under the Sign of Nature: Explorations in Ecocriticism" series, which explores interconnections between environmentalism, literature, humanities, and philosophy. Although the dingo is the focal point, the book is not about the wild dog per se. Rather, Rose (Macquarie Univ., Australia), an anthropologist, uses the dingo as a touchstone to explore ethical connectivity between human and nonhuman life. She draws on conversations with Australian Aborigines about dreaming. The Aborigines' dreamtime stories repeated down through time deal with their relationship with life, death, afterlife, kinship with nonhuman life, extinctions under early white settlement, and human efforts to eliminate dingoes, with which Aborigines have a close kinship. According to dreamtime stories, both have shared origins, and thus Aborigines strongly oppose dingo persecutions. Rose has written a well-referenced, wide-ranging, and sometimes abstract dialogue between dreamtime stories and Western existentialist philosophy on life, death, kinship, and dualism with nonhuman life. Without some familiarity with existentialist philosophy and knowledge of dreaming, many readers will find parts of this book difficult to follow. **Summing Up:** Recommended.

★★ Upper-division undergraduates and above.—R. L. Smith, *emeritus*, *West Virginia University*



49-1451 HT241 2010-25749 CIP
The Routledge handbook of urban ecology, ed. by Ian Douglas et al. Routledge, 2011. 664p bibl index ISBN 9780415498135, \$240.00; ISBN 9780203839263 e-book, \$240.00

This valuable collection of essays will provide a benchmark in urban ecology for many years to come. The book is a superb resource for researchers and students who wish to hone in on a topic, learn what there is to know, and perhaps carry on further investigations. The rock-solid science in the text is readable enough to allow this reviewer to assign topics in urban ecology to his non-science-major undergraduates. The volume is particularly useful because the essays pinpoint important issues and frame them empirically. Students can critically read and analyze an essay, design a simple research project, and conduct an experimental foray into their own urban environment. Theory, methodology, and applications are all addressed here, providing a well-constructed framework for further work at the student or professional level. The content is more definitional than predictive, but the energy harnessed in this collection nevertheless allows room for abstracting and testing new ideas about urban landscapes and their interactions with humans, wildlife, plants, and the abiotic environment. The diversity of approaches, topics, and sources included establishes a truly philosophical basis for inquiry into urban ecosystems. **Summing Up:** Essential. ★★★★★ All readership levels.—*S. Hammer, Boston University*

49-1452 QP408 2010-44073 CIP
 Zull, James E. **From brain to mind: using neuroscience to guide change in education**. Stylus Publishing, 2011. 294p index ISBN 9781579224615, \$75.00; ISBN 9781579224622 pbk, \$24.95; ISBN 9781579226060 e-book, \$19.99

From Brain to Mind challenges educators to see what children learn from the perspective of neuroscience, and to see what this perspective provides educators. In this endeavor, Zull (biology and biochemistry, Case Western Reserve Univ.; *The Art of Changing the Brain*, CH, Mar'03, 40-4142) is partly successful, because the book is only partly neuroscience. There is a great deal of information on cognitive, perceptual, and emotional assessment, and in the last chapter, the author theorizes that educators should learn and teach children to use metacognition. He rightly champions Piaget's approach to childhood learning, but Piaget would be very surprised to find himself described as a neuroscientist. Also, buttressed by his neuroscience musings, Zull advocates an approach that many non-neuroscientist educators (starting with Piaget) also advocate—active individual-centered learning. Zull uses the neuroscientist's approach of linking the aspect of behavior (e.g., language, visual perception) to location in the brain, which is perhaps not useful to educators. Still, there are ideas worth pondering here, and the metacognition Zull advocates should lead the reader to work through the chapters and come up with ideas about or approaches to education. **Summing Up:** Recommended. ★★ Academic and professional audiences in biology and education disciplines, all levels.—*J. A. Mather, University of Lethbridge*

Botany

49-1453 SB428 2010-32644 CIP
 Bitner, Richard L. **Designing with conifers: the best choices for year-round interest in your garden**. Timber, 2011. 296p index ISBN 9781604691931, \$34.95

Garden writer and photographer Bitner (*Conifers for Gardens*, CH, Jan'08, 45-2360) has produced an idea book for using conifers in garden design. This book does not have a lot of text, and its strength is in its well-composed and reproduced color images of conifers, both singly and in garden settings. The first chapters are organized by characteristics, such as shapes (spiky, mounding, weeping), colors (green, gold, silver, deciduous with fall color), and use in specific situations (hedges, topiaries, shade, front yards, etc). These contain useful general information as well as alphabetical listings with short descriptions of species and cultivars within the various categories. The book concludes with a detailed case study of the heavily coniferized home gardens of Oregon landscape professionals Cassandra and Bryan Barrett and with some short appendixes on an eclectic assortment of topics such as deer, wet areas, and Christmas trees. Although the volume is targeted at homeowners, Bitner's excellent photography will inspire professional designers as well as armchair gardeners. **Summing Up:** Recommended. ★★ All undergraduate students, professionals/practitioners, and general readers/gardeners.—*G. D. Dreyer, Connecticut College*

49-1454 S417 2010-43987 CIP
 Hersey, Mark D. **My work is that of conservation: an environmental biography of George Washington Carver**. Georgia, 2011. 290p bibl index afp ISBN 9780820330884, \$69.95; ISBN 9780820338705 pbk, \$24.95

This revision of Hersey's dissertation, part of the series "Environmental History and the American South," continues recent efforts to articulate Carver's achievements beyond those most often associated with him, notably the development of applications for such products as the sweet potato and peanut. Following Linda McMurry Edwards's *George Washington Carver* (CH, Feb'82) and Gary Kremer's Carver biography (2011), Hersey (history, Mississippi State) places Carver's early years, his training at Iowa State University, and his work at Tuskegee Institute, along with an excellent discussion of the socioeconomic history of Macon County, Alabama, into a focused context, suggesting that Carver viewed the natural milieu in holistic relationships and systems. This mind-set played significantly in Carver's regional outreach, whether manifested in agricultural bulletins or the well-known Jesup Wagon agricultural extension demonstration service for Alabama's Black Belt. Hersey also notes the relatively minor influence of Carver's public religious leanings and the more complex effects of his fame. Though Hersey's portrait of Carver's influence and place in the history of American conservation and sustainable agriculture is subtle and nuanced, there is no doubt that he has brought to light a much fuller and richer picture of Carver than most readers may have previously encountered. **Summing Up:** Recommended. ★★ Upper-division undergraduates through professionals.—*L. S. Cline, Missouri State University*

49-1455 SB457 M A R C
 Rinaldi, Bianca Maria. **The Chinese garden: garden types for contemporary landscape architecture**. Birkhauser, 2011. 176p bibl index afp ISBN 9783034602228, \$69.95

The author's background is the key to this analysis of gardens in China: Rinaldi (Univ. of Camerino, Italy) is a scholar of landscape architecture. The book's chapters, "Evolution and Topology," "Composition and Effects," "Elements," "Reconfiguring the Chinese Garden," and "Short Portraits of Parks and Gardens," present her views on the rules of distribution, proportions, and relations guiding the use of the material elements in a Chinese garden. The historical approach, with



descriptions of gardens built during several early dynasties and ending in modern times, sets the parameters for understanding function and use. An important insight in this book is embedded in the discussions involving spatial articulation accomplished by scenic views designed to draw the garden visitor into a visual experience. A strength is the discussion of the influence of Chinese garden traditions on contemporary garden and park design. Plants are discussed within the context of elements used in garden construction, but more information in this section would have been helpful. Excellent photographs and plans make an important contribution to this valuable book. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals; two-year technical program students.—*L. G. Kavaljian, California State University, Sacramento*

49-1456 SD413 2010-44444 CIP
Swanson, Frederick H. **The Bitterroot & Mr. Brandborg: clearcutting and the struggle for sustainable forestry in the northern Rockies.** Utah, 2011. 356p bibl index afp ISBN 9781607811015, \$39.95

Swanson (*Dave Rust*, 2007) uses his knowledge of forests and forest management, his excellent understanding of the political environment, and his passion for the natural world to describe yet another instance of the struggle between utilitarianism and environmentalism. This book's 21 chapters cover more than a century's history of the Bitterroots, from 1878 to 2006. Swanson describes how forest managers, using the best science of the day, planned an engineered forest, while Guy Brandborg and others in the northern Rockies knew and felt that what was being done to their forest, the world's forest, was wrong. The community pushed against prevailing science, politics, and ego to redefine sustainability. Brandborg was supervisor of Montana's Bitterroot National Forest from 1935 to 1955; during his retirement, he was actively involved in lobbying for the passage of the National Forest Management Act of 1976, an extremely important piece of legislation. Socially and ecologically defining the sustainable use of forest resources is at the heart of the debate that Swanson so eloquently describes. This case study, so similar in so many ways to other cases across the US and around the world, is a must read for anyone responsible for the management of public resources. **Summing Up:** Highly recommended. ★★★ Lower-division undergraduates through professionals; general readers.—*B. C. McComb, Oregon State University*

49-1457 QK99 M A R C
Williams, Cheryll J. **Medicinal plants in Australia: v.2: Gums, resins, tannin and essential oils.** Rosenberg, 2011. 344p bibl index ISBN 9781877058943, \$69.95

This new volume is an excellent follow-up to the first volume in this series, *Bush Pharmacy* (CH, Apr'11, 48-4482), which is full of historical anecdotes and plant usage information. It offers a fascinating look into the plethora of medically significant genera and species in the Australian bush. Williams, an experienced herbal and nutritional medicine professional, presents a compelling argument for the value and conservation of trees and plants in this region. She reveals how pioneering medical professionals encountered the surprising efficacy of plant compounds in the gum trees, their resins, and other secondary products, such as tannins, and compares them to modern therapies. Williams also illustrates the effectiveness of Australian bush plant compounds for treating viral and fungal infections, and antibiotic-resistant strains of bacteria. In addition to wonderful accounts of bush medicine, this volume is packed full of reference tables. Thus, the layperson can read the book for general information and interest, and

students and professionals can consult the book to obtain biochemical and medical information. **Summing Up:** Highly recommended. ★★★ All academic, general, and professional readers.—*L. Swartzell, Southeast Missouri State University*

49-1458 SB454 2010-50776 CIP
Wilson, Andrew. **Contemporary color in the landscape: top designers, inspiring ideas, new combinations.** Timber, 2011. 280p bibl index ISBN 9780881929966, \$34.95

In this well-written work, Wilson (London College of Garden Design, UK), a British designer, educator, and author, addresses color as an essential element in landscape design. He explains how humans perceive colors, how colors affect feelings and moods, and how they have been used in particular designs. He then provides some principles of designing with color, including the use of shadow and changing natural light, and explains how color can make a space seem larger or smaller, or promote relaxation or social warmth. The author also discusses trends such as more and brighter color, more perennials, fewer shrubs, and the inclusion of hardscape elements in both neutral and vivid colors. According to Wilson, late-20th-century landscape design moved away from functionalism toward a closer relationship with other fine art and design disciplines, with an emphasis on conceptualism, in which an idea underlies a design. Individual chapters discuss contrast, intensity, designing with a restricted palette, and nature-inspired settings. This is a book on design principles and trends, not a how-to book, but the author's teachings on color and the many magnificent photographs will surely inspire readers with new ideas. A useful acquisition for libraries serving both professional designers and the gardening public. **Summing Up:** Recommended. ★★ All readership levels.—*M. Taylor, formerly, University of Colorado Denver*

49-1459 SB466 2010-44565 CIP
Zou, Hui. **A Jesuit garden in Beijing and early modern Chinese culture.** Purdue, 2011. 190p bibl index ISBN 1557535833 pbk, \$39.95; ISBN 9781557535832 pbk, \$39.95

This book is a study in comparative history, East versus West. Zou (Univ. of Florida) begins with a detailed analysis of the history and philosophical underpinnings of Chinese gardens and their representation in paintings and focuses on the Jesuits' very different approach to garden design and its depiction in China in the 17th and 18th centuries. The Jesuits used the realistic if artificial technique of mathematical perspective to create illusions of reality heightened by various devices (e.g., shadows, foreshortening). They incorporated Western contrivances, including labyrinths, fountains, and multistoried buildings, into the "Western garden" that was added to the traditional Chinese gardens of the Old Summer Palace and meant to contrast with the garden landscapes of the Chinese parts of the complex. The only disappointment is that for a work dependent on understanding how Chinese and Jesuit artists rendered landscapes and architecture, there are only three illustrations: a map of the Old Summer Palace on the outskirts of Beijing and two illustrations of landscape scenes, despite the many discussed. Nevertheless, anyone interested in the history of architecture, painting, or comparative cultural studies contrasting the world views of China and modern Europe will find this a novel, instructive work. **Summing Up:** Recommended. ★★ All academic, general, and professional readers.—*J. W. Dauben, CUNY Herbert H. Lehman College*



Zoology

49-1460 QL684 2010-48288 CIP
Birds of Kansas, by Max C. Thompson et al. University Press of Kansas, 2011. 528p bibl index afp ISBN 0700617825, \$39.95; ISBN 9780700617821, \$39.95

Thompson (formerly, Southwestern College) and fellow avian experts have roots deep in Great Plains birding, which becomes evident as soon as one opens this volume. In this superlative treatment of Kansas avifauna, each of the 473 included species is afforded only a single page. Accounts of extinct species are a welcome surprise. Each page provides one high-quality photograph depicting the species. In some cases, pairs are shown, but some show only a male, and a few, only a female. The accounts also contain notes concerning current status in the state, habitat preference, migration dates, and breeding activity in the state (if any). Banding records, along with recoveries, are an added bonus. The authors also mention population trajectories, not only for Kansas, but for the species in general. They includes notes indicating difficulty in identifying closely related species; however, they do not offer identification hints—just words of caution to birders. But this is not a field guide and is not intended to be. It is a beautifully executed state faunal account and is worthy of space in any library with significant ornithological holdings. **Summing Up:** Highly recommended. ★★★ Lower-division undergraduates through professionals; general readers.—*P. K. Lago, University of Mississippi*

49-1461 SB761 2010-48037 CIP
 Ciesla, William M. **Forest entomology: a global perspective**. Wiley, 2011. 400p bibl indexes ISBN 9781444333145, \$129.95

This authoritative, timely work examines the major aspects of forest entomology from an international perspective—so important in a shrinking world where professionals must know the range of pests encountered across the globe, not just locally. Ciesla, a forest entomologist who has served in academic and governmental positions in over 30 countries, is eminently qualified to write this work. It is an attractive book, engagingly and clearly written, suitable for all levels of expertise, and well illustrated with figures, tables, and photographs, many in color. It is scientific but not overly technical, with extensive references (24 pages) providing more detailed information. The first part examines the role of insects in forests, their dynamics, and their effects on the various forest ecosystems, wood, and other forest products. The book covers basic entomology and the major orders and families important in forest ecosystems as well as insect monitoring and integrated pest management, essential in any sustainable forest management program, especially in developing countries. The last half describes important forest insects worldwide, their distribution, hosts, life histories, and economic, social, and ecological impacts. A very thorough subject and taxonomic index and separate host index are helpful for identifying the world's major forest pests. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals.—*D. L. Richter, Michigan Technological University*

49-1462 QL676 2010-52429 CIP
Conservation of tropical birds, by Navjot S. Sodhi et al. Wiley-Blackwell, 2011. 300p bibl index afp ISBN 1444334824, \$129.95; ISBN 9781444334821, \$129.95

Sodhi (National Univ. of Singapore) and colleagues have written a concise but thorough book that reviews a wide breadth of knowledge

about and research on the conservation of tropical birds. It should rank as a major contribution to the field of conservation biology. The ten chapters provide an extraordinary overview of all major topics within this area, including fragmentation effects, extinctions, effects of fire, biotic invasions, harvesting of tropical birds, and more. An introductory chapter and a final chapter provide excellent summaries and outlooks. Chapters titled “Ecological Functions of Birds in the Tropics,” “Climate Change Effects on Tropical Birds,” and “Conservation of Migratory Birds in the Tropics” should be required reading for anyone interested in tropical ornithology. The text is deeply referenced, giving any interested reader direct access to a wide literature. The book is illustrated with useful graphics as well as photographs, and there is a color signature. This work would be very useful in a seminar on tropical conservation issues. Though confined to birds, the issues discussed are pertinent to other taxonomic groups. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals.—*J. C. Kricher, Wheaton College (MA)*

49-1463 QL638 2010-30264 CIP
 Eilperin, Juliet. **Demon fish: travels through the hidden world of sharks**. Pantheon Books, 2011. 295p bibl index ISBN 9780375425127, \$26.95

Although the title suggests that sharks are evil fish, the book is actually devoted to sharks that are neither good nor evil but important components of marine ecosystems. To prepare for writing this work, science/environment reporter Eilperin (*The Washington Post*) traveled to laboratories in many parts of the world and became acquainted with the people engaged in shark research. As a result, she has been able to provide an up-to-date account of recent research findings that reveal the present status of global shark populations. The populations of large-size sharks have become so decimated that most of the species now exist at 10 percent or less of their unexploited population sizes. The decimation has been primarily caused by overfishing due to the insatiable demand for shark fins for making shark fin soup, a Chinese affectation. The collapse of large-size shark populations has caused trophic cascades affecting ecosystems in many parts of the world. The author reports these and other research findings in an accurate and authoritative manner, making the book valuable to almost all who have an interest in sharks. **Summing Up:** Recommended. ★★ General, academic, and professional readership, all levels.—*J. C. Briggs, emeritus, Oregon State University*

49-1464 QL666 2010-36966 CIP
 Ernst, Carl H. **Venomous reptiles of the United States, Canada, and Northern Mexico: v.1: Heloderma, Micruoides, Micrurus, Pelamis, Agkistrodon, Sistrurus**, by Carl H. Ernst and Evelyn M. Ernst. Johns Hopkins, 2011. 352p bibl index afp ISBN 9780801898754, \$75.00

Painstaking literature research by husband-and-wife team Carl Ernst (emer., George Mason Univ.) and Evelyn Ernst (ret., science teacher/administrator) has resulted in this first volume of a greatly expanded and improved version of Carl Ernst's *Venomous Reptiles of North America* (CH, Jan'93, 30-2675). This volume covers the venomous helodermatid lizards, coral snakes, sea snakes, and ophidians of the genera *Agkistrodon* and *Sistrurus* found in North America north of Mexico's 25th parallel. The book is divided into eight text units, preceded by introductory information and an abbreviations list. The first four sections cover venoms, envenomation, bite treatment, and conservation. Identification and a key to families follow these sections. The final three units cover beaded lizards and Gila monsters, coral snakes, and viperid snakes of the



genera *Aegistron* and *Sistrurus*, respectively. A glossary and index of both common and scientific names complete the book. Line drawings and numerous monochrome and color photographs complement the narrative. This is an authoritative summary of the authors' personal research and more than 3,000 literature sources. It, and the upcoming second volume, will be an excellent resource for professionals in many fields for years to come and a detailed reference book for anyone wishing to know about venomous snakes. **Summing Up:** Highly recommended. ★★ All levels/libraries.—*E. D. Keiser, emeritus, University of Mississippi*

49-1465 QL675 M A R C
Goodfellow, Peter. **Avian architecture: how birds design, engineer & build**, ed. by Mike Hansell. 1st U.S. ed. Princeton, 2011. 160p bibl index ISBN 9780691148496, \$27.95

Respected English ornithologist Goodfellow is author of *The Birds of Saltram* (1971) and *Projects with Birds* (1973), and coauthor of *Shakespeare's Birds* (1983). His *Birds as Builders* (1977) is a forerunner to *Avian Architecture*, which has 8 identical chapter titles, out of 12 total, but builds on the earlier work and is illustrated with all new, excellent color photographs. Thus the content is new even though the book deals with the same subject matter. Numerous attractive, inviting diagrams, sidebars, paintings, and sketches supplement the photographs. The minimal text is tied to this rich, illustrative material, making the book primarily one for browsing, whereas *Birds as Builders* was essentially an expository text that could be read straight through. The bibliography and combined index are helpful, as is the addition of a glossary and list of Web sites. Chapters focus on various types of nests: scrapes, cup-shaped, mud, holes and tunnels, platforms, aquatic, domed, hanging, woven or stitched, mounds, colonies and group nests, courts and bowers, and edible or for food storage. Worldwide in purview—not Eurocentric. **Summing Up:** Highly recommended. ★★ All undergraduate students and general readers.—*H. T. Armistead, formerly, Free Library of Philadelphia*

49-1466 QL677 2010-43277 CIP
Living dinosaurs: the evolutionary history of modern birds, ed. by Gareth Dyke and Gary Kaiser. Wiley-Blackwell, 2011. 422p bibl index ISBN 0470656662, \$129.95; ISBN 9780470656662, \$129.95

The idea that birds are derived from dinosaurs is well over 100 years old, but the details and diversity of specimens for in-depth analysis of the relationship have expanded significantly in the last 30 years. Here, 29 experts provide a very detailed description and analysis of numerous questions about bird origins and diversification. Beginning with papers on the origins of bird characters from their dinosaur contemporaries, various authors examine the birds of the Cretaceous, when much of the early evolution of birds occurred. A second section explores paleontology's contributions to understanding the origin of modern birds, from penguins to passerines. A third section focuses on the development of flight, the avian brain, and genome evolution. The book ends with a careful analysis of the future of bird diversity. Overall, the chapters are thorough with extensive references and numerous illustrations, including many of the new fossil birds from China, morphological character analyses, and cladograms. A separate section of colored plates includes photographs of some of the significant fossils. Useful for ornithologists and paleontologists interested in the origins and evolution of birds, and a landmark for future studies, particularly of the very diverse and numerous perching birds whose interrelationships are a major problem for ornithologists. **Summing Up:** Recommended. ★★ Upper-division undergraduates through professionals.—*D. Bardack, emeritus, University of Illinois at Chicago*

49-1467 QL89 2010-47320 CIP
Nickell, Joe. **Tracking the man-beasts: Sasquatch, vampires, zombies, and more**. Prometheus Books, 2011. 239p bibl index afp ISBN 9781616144159 pbk, \$19.00; ISBN 9781616144166 e-book, \$11.99

In an almost encyclopedic synopsis, this book by paranormal investigator Nickell (*Adventures in Paranormal Investigation*, CH, Mar'08, 45-4082) succinctly, confidently, and often pithily summarizes the history of claimed encounters with man-beast-like monsters from ancient Greece to current times. Chapters are brief summaries of the major types of contemporary, classical, and supernatural man-beasts, including supposed extraterrestrial aliens, ape-men, devil men, harpies, swamp creatures, and zombies. In many cases, Nickell traveled to the original locations of the reports; in all cases, he attributes the creature sightings to misidentification, as with the West Virginia "Mothman," which was most likely a barred owl. He discusses social "contagion," e.g., the "Monkey Man" hysteria in New Delhi, India (2001), and also outright trickery, as with the Cardiff Giant and P. T. Barnum's "Feejee Mermaid." Recurring and effective themes are the evolving nature of iconography—for example, the chupacabra, initially described as a bird-type creature and then a hybrid with limbs, and the standardization of Bigfoot/Sasquatch descriptions from multiple-sized humanoids to large primates. The author also discusses the inherent unreliability and variability of eyewitness accounts such as the 1955 Kelly-Hopkinsville, Kentucky, alien encounter. Overall, a good addition to libraries actively collecting materials related to paranormal activity/creatures. **Summing Up:** Recommended. ★★ General readers, lower-division undergraduates.—*K. D. Winward, Central College*

49-1468 QL785 2010-19753 CIP
Shumaker, Robert W. **Animal tool behavior: the use and manufacture of tools by animals**, by Robert W. Shumaker, Kristina R. Walkup, and Benjamin B. Beck. Rev. and updated ed. Johns Hopkins, 2011. 282p bibl index afp ISBN 0801898536, \$65.00; ISBN 9780801898532, \$65.00

Making and using tools is a definitive characteristic of being human. Thus, reports of tool use by animals, often greeted with skepticism, are newsworthy. This is a much revised version of Beck's 1980 book. Shumaker (Indianapolis Zoo) and Walkup (Drake Univ.) have joined Beck (Great Ape Trust) to provide up-to-date definitions of animal use and manufacture of tools and a "complete catalog" of all cases reported in the literature of tool use. The book covers invertebrates, nonmammalian vertebrates, and primate and nonprimate mammals. The final chapter discusses myths about tool use. Animals use tools in social interactions and for obtaining food. Tool usage in many reports appears accidental or idiosyncratic, while other uses are culturally transmitted through observation and copying, conveying the impression of intelligence and awareness. Tool behaviors discussed include drop, throw, drag, push, bait, beat, dig, and reach. More impressive are composite behaviors: insert and probe. But it is tool manufacture (even shaping), selection, and carrying the tool to work that offer the most impressive examples of problem solving. Many reports are secondhand and/or from animals in captivity, and of doubtful relevance in the wild. Surprisingly, one of the debunked myths is that tool use equates with intelligence. **Summing Up:** Recommended. ★★ Lower-division undergraduates through researchers/faculty; general readers.—*J. Burger, Rutgers, The State University of New Jersey, New Brunswick*



Chemistry

49-1469 QD96 M A R C
Gross, Jürgen H. **Mass spectrometry: a textbook.** 2nd ed. Springer, 2011. 753p bibl index afp ISBN 3642107095, \$129.00; ISBN 9783642107092, \$129.00

The expansive range of topics in mass spectrometry is well surveyed in this large volume. Gross (Heidelberg Univ., Germany) manages extraordinary breadth and adequate depth, delving into classical and current topics in theory, instrumentation, and applications. This work serves as a useful reference for those in the field (with hundreds of references to primary literature), but also functions effectively as a textbook, with "Learning Objectives" for each chapter and several appendixes outlining step-by-step approaches for students to solve problems. Gross writes in a clear, readable style and occasionally inserts his voice to needle (pleasantly and humorously) some foibles unique to the field. This second edition (1st ed., CH, Oct'04, 42-0950) updates existing chapters and adds three new ones (200-plus additional pages in all) that cover important developments, e.g., ETD, proteomics, DART, and DESI ionization. Few others have attempted such a comprehensive work on the topic. However, this compares well to J. Watson and O. Sparkman's *Introduction to Mass Spectrometry* (4th ed., CH, Apr'08, 45-4396) in its coverage, and outshines less detailed (though still worthwhile) works such as E. de Hoffman and V. Stroobant's *Mass Spectrometry* (3rd ed., CH, Apr'08, 43-4389) and C. Herbert and R. Johnstone's *Mass Spectrometry Basics* (CH, Mar'03, 40-4024). **Summing Up:** Recommended. ★★ Upper-division undergraduates and above.—*E. J. Chang, York College*

49-1470 TP155 2010-3431 CIP
Jiménez-González, Concepción. **Green chemistry and engineering: a practical design approach,** by Concepción Jiménez-González and David J. C. Constable. Wiley, 2011. 680p bibl index ISBN 0470170875, \$99.95; ISBN 9780470170878, \$99.95

This work attempts to unite the topics of green chemistry, green engineering, and sustainability. Jiménez-González (GlaxoSmithKline) and Constable (Lockheed Martin; formerly, GlaxoSmithKline) also fold green business practices into the mix. The result is a coherent, single source for those interested in sustainable, environmentally friendly design and manufacturing. Each of the 25 chapters is well referenced and includes a series of end-of-chapter problems. This reviewer especially enjoyed the real-world examples and scenarios employed throughout the text. This would be useful as a primary textbook for an environmental science course on green practices or as a supplemental text for an environmental engineering or environmental chemistry course. It also makes an excellent reference for those working in these areas, as it is the first work to incorporate both green chemistry and engineering and apply them in industrial settings. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals/practitioners.—*S. S. Mason, University of Mount Union*

49-1471 QD453 2010-18380 CIP
Rogers, Donald W. **Concise physical chemistry.** Wiley, 2011. 378p index ISBN 047052264X pbk, \$79.95; ISBN 9780470522646 pbk, \$79.95

Rogers (emer., Long Island Univ.) intends this book to be an appropriate resource for a one-semester physical chemistry course, as well as a useful reference for professionals who need to master aspects of

physical chemistry without having to wade through a standard physical chemistry textbook (newer editions approach or exceed 1,000 pages). In less than 400 pages, the author adequately treats the high points of physical chemistry in a very direct, readable style. A counterbalance for a potential reader is the likelihood that many of the topics in the book are also easily explored through a quick Web search. The advantage here is that the material is presented in a consistent voice using a careful development of the topics. However, the graphics in this black-and-white text are not always well constructed; for example, figure 9.11 contains a two-component phase diagram without labels for the regions of liquid, liquid-vapor, and purely vapors phases. Curiously, the extensive equations in the book are not numbered; this is probably because each chapter is written to be self-contained, thus making equation cross-referencing unnecessary. Nonetheless, this work is a suitable brief survey of physical chemistry. **Summing Up:** Recommended. ★★ Upper-division undergraduates through professionals.—*J. A. Bartz, Kalamazoo College*

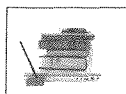
Earth Science

49-1472 TJ163 2010-54016 CIP
Alley, Richard B. **Earth: the operators' manual.** W.W. Norton, 2011. 479p index ISBN 0393081095, \$27.95; ISBN 9780393081091, \$27.95

Earth is the companion book to the PBS documentary of the same name. Alley (geosciences, Pennsylvania State Univ.) combines deep subject knowledge with history, anecdotes, humor, and wit to deliver what is arguably the most entertaining climate change book ever written. His ability to explain complex topics in simple terms (often using historical examples) makes this an informative, but accessible, read. For example, in the chapter titled "Toilets and the Smart Grid," the author compares the challenge of implementing clean energy technologies today to the challenge of waste disposal in 18th-century Europe. In the latter case, the cost of a modernized waste system had immediate impacts. The benefits of climate change mitigation will be harder to assess and will occur more slowly. The book includes other historical analogs to the contemporary climate change problem, leaving the reader cautiously optimistic regarding the possibility of mitigating dangerous climate change. The book also effectively challenges climate change misinformation and demonstrates a strong command of the scientific literature, as evidenced by over 100 pages of notes and references as well as a complete index. **Summing Up:** Highly recommended. ★★★ All readership levels.—*J. Schoof, Southern Illinois University*

49-1473 QE511 2010-41960 CIP
Davies, Geoffrey F. **Mantle convection for geologists.** Cambridge, 2011. 232p bibl index ISBN 9780521198004, \$60.00

In spite of what might be regarded as a rather condescending title, this book by Davies (Australian National Univ.) is loaded with fundamental physics and fluid dynamics that are required to assess assumptions and the perceived processes, misconceptions, and controversies of mantle convection as it relates to geologic evolution of the Earth's crust. The book begins with chapters titled "Why Moving Plates?" and "Solid, Yielding Mantle." A discussion of plate mode and plume mode convection and thermal and geologic perspectives follows. The book ends with chapters titled "Evolution and Tectonics" and "Mantle Chemical Evolution." Essential details of exponential growth and decay, thermal evolution, and chemical evolution are summarized



in helpful appendixes. The volume also includes a useful list of 243 seminal references. This is an outstanding book on a very controversial topic that has afflicted researchers in geophysics and geology for over three decades. It addresses head-on and very clearly, with minimal mathematics, the mantle convection process. There is no book quite like it thus far that deals succinctly and in some depth with this profoundly important subject relative to our planet and, probably, to other planets as well. **Summing Up:** Essential. ★★★★★ Upper-division undergraduates through professionals.—*T. L. T. Grose, emeritus, Colorado School of Mines*

49-1474 GC90 2010-35648 CIP
Davis, Richard A., Jr. **Sea-level change in the Gulf of Mexico.** Texas A&M, 2011. 172p bibl index afp ISBN 1603442243 pbk, \$25.00; ISBN 9781603442244 pbk, \$25.00

Davis (emer., Univ. of South Florida; Harte Research Institute for Gulf of Mexico Studies, Texas A&M), a prominent coastal geologist, examines how and why sea level fluctuated in the past, what sea level is doing currently, and why sea level will continue to rise in the future in the Gulf of Mexico. Davis states, "While arguments continue about the causes of global warming, sea level is rising. About that, there is no question." His scenario of widespread coastal flooding during the 21st century is supported by copious information, clearly presented. Not only will the beaches, barrier islands, and wetlands strung out along the gulf's US shoreline be devastated, but the region's economies, livelihoods, and infrastructure will also collapse. Davis argues compellingly that although these impacts cannot be prevented, they can be alleviated, provided that people begin now to deal realistically with this massive problem. Unfortunately, these mitigation efforts will require huge amounts of money to implement. The text is well written and passionate, and is amply and beautifully illustrated with photographs, maps, and graphs, many in color. Each chapter includes important readings for further study. A valuable resource for anyone interested or invested in the future of the Gulf Coast. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals; general readers.—*P. R. Pinet, Colgate University*

49-1475 QB296 2011-7173 CIP
Ferreiro, Larrie D. **Measure of the Earth: the Enlightenment expedition that reshaped our world.** Basic Books, 2011. 353p index ISBN 9780465017232, \$28.00; ISBN 9780465023455 e-book, contact publisher for price

Bringing the first half of the 18th century to life is a tall order, but historian/naval architect Ferreiro has succeeded. From France and England to the Caribbean and northwest South America, he tracks the progress of the Geodesic Mission to the Equator, intended to measure the actual distance covered by a degree of latitude there. The French Academy of Sciences, which authorized the mission, would then compare that figure to the distance covered by a degree of latitude already measured in France to confirm or refute Newton's assertion that the Earth is flatter at the poles. Ferreiro sets the military and political context of the expedition, primarily comprising French scholars working in a Spanish colony. Using contemporary resources in different languages, he highlights the personalities of the principal researchers and the people with whom they had sustained interactions. Ferreiro provides ample footnotes of his sources, but the narrative is compelling even without consulting them. The expedition experienced delays and funding problems throughout. He is candid about the role of slaves and the nascent activities supporting emancipation of what is now Peru and Ecuador. The expedition succeeded

in its goal and also created a model for later international cooperative scientific ventures. **Summing Up:** Highly recommended. ★★★ All academic, general, and professional readers.—*L. S. Zipp, formerly, State University of New York College at Geneseo*

49-1476 QE514 2010-46377 CIP
Frontiers in geochemistry: contribution of geochemistry to the study of the Earth, ed. by Russell S. Harmon and Andrew Parker. Wiley-Blackwell, 2011. 263p bibl index ISBN 9781405193382, \$150.00; ISBN 9781405193375 pbk, \$89.95

This volume gathers retrospective surveys of fairly standard geochemical topics—mantle, crustal, groundwater, and atmospheric evolution through geologic time, weathering, and stable isotope geochemistry—and "frontiers" surveys on evolving topics: CO₂ sequestration, microbial geochemistry, archaeo/anthropological chemistry, the seemingly inescapable nanoscience, and "urban" geochemistry, which seems to be a natural history of dirt. It arose from the 33rd International Geological Congress held in Norway in 2008. Particularly readable, informative, and even entertaining are the surveys contributed by Heinrich Holland on atmospheric oxygen; Thomas Paces on groundwater; and Philip Bennett and Christopher Omelon on microbial geochemistry. Chapter authors include universally recognized experts. The editing is occasionally questionable (e.g., transposition of labels, misspellings/unusual spellings) but is mostly competent, and as a whole, the work is much better than other edited conference proceedings. The bibliographies are uniformly excellent, but the index is machine compiled and poorly organized. A useful acquisition for academic science libraries. **Summing Up:** Recommended. ★★ Graduate students, researchers/faculty, and professionals.—*T. R. Blackburn, formerly, American Chemical Society*

49-1477 GE42 2010-30958 CIP
Gardiner, Stephen M. **A perfect moral storm: the ethical tragedy of climate change.** Oxford, 2011. 489p bibl index afp ISBN 9780195379440, \$35.00

This book, part of the "Environmental Ethics and Science Policy" series, is hard to gauge. On one hand, it is a comprehensive, thought-provoking, and, in places, innovative book that arguably addresses the largest ethical challenge the world has ever faced or is likely to—bigger and more complex than unharnessed population growth, genocide, religious parochialism, or global war. On the other, it is pedantic, long-winded, and somewhat didactic, which makes reading it a bit like slogging through a PhD thesis. That said, Gardiner (philosophy, Univ. of Washington, Seattle) really knows the climate change political landscape, literature, and science, as well as associated issues and impacts as applied to ethics, decision making, and morality. The author illustrates many points by referring to various game theory scenarios and the moral and ethical dilemmas faced by characters in the popular literature. These, as well as the author's repeated use of the term "perfect storm" to make his case, are useful to some extent but become tiring and distracting after a while, leading the reader to wish that an editor had stepped in to shorten and punch up the text. **Summing Up:** Recommended. ★★ Graduate students, researchers/faculty, and professionals.—*B. Ransom, formerly, University of California, San Diego*

49-1478 QH76 2010-40364 CIP
Garone, Philip. **The fall and rise of the wetlands of California's Great Central Valley.** California, 2011. 422p bibl index afp ISBN 0520266633, \$39.95; ISBN 9780520266636, \$39.95



California's Great Central Valley extends 430 miles north and south, covering one-third of the state's counties. From colonial times until the late-20th century, there were millions of acres of land available for agriculture. Rainfall, abundant in the northern valley, is sparser toward the south. Over time, the northern regions provided the water demanded by farmers in the southern valley and also needed in some of California's coastal cities. Land reclamation and irrigation projects transformed the landscape, adding 1,400 federal and state dams. But, as historian Garone (California State Univ., Stanislaus) points out, the environmental cost was enormous. A shocking 91 percent of the state's five million acres of permanent and seasonal wetlands disappeared. These changes threatened migratory wildlife and caused land subsidence—and also produced ever-growing demands on the available water supply. Since 1980, policy changes championed by alarmed scientists and sports enthusiasts have opened the eyes of citizens about the issues involved. A number of destructive policies have been reversed, but more needs to be achieved. This volume breaks new ground in its comprehensive coverage. With masterful research, Garone illuminates the devastating effects imposed by intensive agricultural reclamation and irrigation in California. **Summing Up:** Highly recommended. ★★★ All academic, professional, and general readers.—*K. B. Sterling, formerly, Pace University*

49-1479 QH92 2008-25312 CIP
Gulf of Mexico origin, waters, and biota: v. 3: Geology, ed. by Noreen A. Buster and Charles W. Holmes. Texas A&M, 2011. 446p bibl index afp ISBN 1603442901, \$75.00; ISBN 9781603442909, \$75.00

This authoritative multivolume work, part of the "Harte Research Institute for Gulf of Mexico Studies" series, is a major update to *Fishery Bulletin* 89 (1954), edited by Paul Galtsoff. Volumes 1 and 2 are *Biodiversity* (CH, Dec'09, 47-1980) and *Ocean and Coastal Economy*, respectively. Given the recent (2010) events in the Gulf of Mexico, a synthesis of geological knowledge about the region is most useful. The volume consists of six sections with a total of 23 chapters. Each chapter contains a variety of black-and-white and colored maps and graphs. Part 1 deals with the overall geologic history of the area, and includes a well-illustrated chapter on tectonic evolution and an additional three chapters on the Florida platform and the impact of sea-level variations on different time scales. Parts 2, 3, and 4 evaluate various geological aspects of the eastern, northern, and Mexican areas of the gulf. The last two parts are "Coral Reefs" and "Processes," the latter discussing changes in the climate of the last 12,000 years and evaluating evidence for low-oxygen bottom-water conditions over the last 300 years. Three appendixes detail foraminiferal counts from piston cores. An eight-page subject and geographic index supports the text. **Summing Up:** Recommended. ★★ Graduate students, researchers/faculty, and professionals.—*J. T. Andrews, University of Colorado at Boulder*

49-1480 QC981 2011-6614 CIP
The Impact of global warming on Texas, ed. by Jurgen Schmandt, Gerald R. North, and Judith Clarkson. 2nd ed. Texas, 2011. 318p bibl index afp ISBN 9780292723306, \$55.00

In spite of much controversy, global climate change remains an environmental concern attested to by many notable scientists and the Fifth Assessment Report (currently in progress) of the Intergovernmental Panel on Climate Change meeting in 2007, which updated knowledge on the scientific, technical, and socioeconomic aspects of climate change. Texas, like many coastal states, is especially susceptible to the negative impacts of weather changes throughout the world. This new edition (1st ed.,

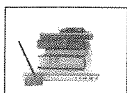
1995) prognosticates the possible future of Texas as global climate change continues unabated. It also explains how citizens can work to reduce anthropogenic influences on the climate. Environmental researchers and policy experts from Texas convey these messages in a collection of essays, beginning with some background on the science of climate change. Contributors then investigate ways climate change could affect areas along the Gulf of Mexico, including the biodiversity, economy, and natural resources of the region. They also explore related policy and sociological issues. The book is well written and presents realistic scenarios. Includes ample references. **Summing Up:** Recommended. ★★ Regional collections serving upper-division undergraduates through professionals and general readers.—*B. R. Shmaefsky, Lone Star College - Kingwood*

49-1481 GE155 2010-42233 CIP
Landscapes and hydrology of the predrainage Everglades, by Christopher W. McVoy et al. University Press of Florida, 2011. 342p bibl index afp DVD ISBN 9780813035352, \$85.00

The goal of this interesting, informative book is to document changes in the Everglades, pre- and postdrainage, from the 1880s to the present. McVoy, a wetland ecologist and soil physicist, and colleagues collected and reviewed a wide range of historical observations and documentation, and concentrated on soils, botany, landscapes, and hydrology of the regions. The study focused on predrainage concepts; changes in drainage and water management due to settlement; and specific landscape examples as suitable guides for restoration. Following an introductory section discussing the extent of the research and some background details, 12 chapters cover sources and methodology, the phases of development and drainage in the Everglades, various types of landscape and vegetation, and predrainage history. The concluding section includes comments on "anthropogenic drainage." A list of references, "Township Survey References," and a detailed index follows the last chapter. A DVD that accompanies the book provides supplementary historical data references for chapters 5-10. Each chapter contains color and black-and-white plates, figures, and tables to support the text. A valuable resource for anyone involved with ecosystem restoration, including engineers, soil scientists, botanists, geomorphologists, and those involved with restoration of similar land areas. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals; general readers.—*S. G. Shetron, emeritus, Michigan Technological University*

49-1482 SD390 2010-48887 CIP
Lukac, Martin. Soil ecology in northern forests: a belowground view of a changing world, by Martin Lukac and Douglas L. Godbold. Cambridge, 2011. 256p bibl index ISBN 9780521886796, \$115.00; ISBN 9780521714211 pbk, \$55.00

This short text devotes a third of its content to soil physical properties, a third to soil chemical and biological properties, and a third to forest response to increased CO₂ and global climate change, exposure to acid rain and heavy metals, and nitrogen saturation. One gets the impression that Lukac (Univ. of Reading, UK) and Godbold (Bangor Univ., UK) wanted to provide a concise description of what a forest soil is, how it functions, and how it responds to environmental damage. While the latter third of the book does a good job of explaining the forest response to environmental insult, the first two-thirds inadequately frame the environment in which that insult occurs. It does not provide a good sense of what a northern forest is and how it differs from other forested environments. The description of soil physical properties is generic and inadequately contrasts forest soil with other soils to demonstrate their



unique properties and hence susceptibility to environmental change. The authors treat mycorrhizal fungi at length and with clarity, but these are not the only organisms in forest soils, so this text gives other macrofauna and microbiota short shrift. **Summing Up:** Recommended. ★★ Graduate students.—*M. S. Coyne, University of Kentucky*

49-1483 GE70 2010-40205 CIP
Saylan, Charles. **The failure of environmental education (and how we can fix it)**, by Charles Saylan and Daniel T. Blumstein. California, 2011. 241p bibl index afp ISBN 9780520265387, \$60.00; ISBN 9780520265394 pbk, \$24.95

Saylan (Ocean Conservation Society) and Blumstein (UCLA; coauthor, *A Primer of Conservation Behavior*, CH, Apr'11, 48-4461) take a candid look at environmental education today. They write in a way that makes the reader feel like he/she is involved in a friendly, if frank, discussion with a couple of friends. The authors go into detail about issues with the education system, politics and policy, and human consumption of resources—all under the umbrella of environmental concern. The fact is that there is a need for environmental education. It is also a fact that there has yet to be an ideal way to address the issue. This book not only explains the need, but also describes the barriers that exist, including how the US government is run, the mind-set that American culture perpetuates, and the burdens placed upon the education system. Finally, the authors provide some honest, attainable, worthy actions everyone can take to move toward improving this situation. This book is well written and well documented, as evidenced by the extensive bibliography. **Summing Up:** Highly recommended. ★★★ All readership levels.—*D. L. King, University of Georgia*

49-1484 TD885 2010-45748 CIP
Victor, David G. **Global warming gridlock: creating more effective strategies for protecting the planet**. Cambridge, 2011. 358p bibl index ISBN 9780521865012, \$40.00

Victor's assessment of global warming justifies Nobel Prize-winning economist Thomas Schelling's endorsement of the book as the best he has seen on the topic in 30 years. Fifteen pages of acknowledgments describe the author's extensive associations with pioneering experts and institutions involved in climate science. An outstanding feature is the author's intense focus on realism in identifying weaknesses in existing international strategies for countering global climate change. Victor (international relations and Pacific studies, Univ. of California, San Diego) offers creative alternatives that could work, rather than just sound good. For example, he argues that grand international agreements with national targets for reducing carbon emissions have too few carrots and not enough sticks to be effective. Instead of top-down approaches, he recommends coordinated, bottom-up groups or clubs with incentivized, enforceable commitments similar to GATT/WTO trade agreements. He doubts that optimistic targets for global greenhouse gas reduction will be met, and urges initiation of quantitative assessments of the effectiveness of geoengineering to offset warming. Unusual among political scientists, Victor avoids technical jargon and focuses on application rather than theory. The text is uninterrupted by references, but is supported by 40 pages of page-indexed notes and 20 pages of carefully selected references. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals.—*F. T. Manheim, George Mason University*

Engineering

49-1485 TN871 2011-8104 MARC
Achenbach, Joel. **A hole at the bottom of the sea: the race to kill the BP oil gusher**. Simon & Schuster, 2011. 276p index ISBN 9781451625349, \$25.99; ISBN 9781451625387 e-book, \$12.99

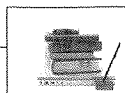
This is a vivid account of the events leading up to and following the worst oil drilling disaster in history, the Gulf of Mexico BP Macondo well blowout on April 20, 2010. It caused the deaths of 11 men, sank the massive drilling rig Deepwater Horizon, polluted hundreds of miles of beaches along the Gulf Coast, closed fishing in tens of thousands of square miles of federal water, and ultimately cost BP 4.9 billion dollars in 2010. Reporter Achenbach (*The Washington Post*) explains the roles key BP engineers and US scientists played in considerable detail, pointedly depicting the culture clash that existed. Well characterized are Thad Allen, Coast Guard commandant (whose motto was "underpromise and overdeliver"), serving as National Incident Commander, and US secretary of energy and Nobel Prize-winner Steven Chu, serving as the chief government scientist. The crisis mode that pervaded the situation is so well developed that one cannot read fast enough to keep up with all the twists, turns, trials, and errors that ensued until September 18, when the well was finally sealed for good. Excellent index. **Summing Up:** Highly recommended. ★★★ All readership levels.—*E. J. Kormondy, chancellor-emeritus, University of Hawaii at Hilo*

49-1486 TP155 2011-4168 CIP
Crowl, Daniel A. **Chemical process safety: fundamentals with applications**, by Daniel A. Crowl and Joseph F. Louvar. 3rd ed. Prentice Hall, 2011. 723p bibl index afp ISBN 9780131382268, \$150.00

This is the third edition (2nd ed., 2002; 1st ed., CH, Sep'90, 28-0310) of a book that is the primary textbook for courses in chemical process safety. It is also very useful as a reference in other courses such as process design, and is a must reference for engineers in the chemical process industries. Crowl (Michigan Technological Univ.) and Louvar (Wayne State Univ.) have updated their book considerably, including new chapters titled "Chemical Reactivity" and "Safety Procedures and Designs" as well as updated references and technical data. The book is very practical in nature, with many examples, a multitude of references, and many end-of-chapter problems for student exercises. It would have been better to place the new chapter on safety procedures, which deals with qualitative methods applicable to initial safety considerations, near the beginning of the book instead of following chapters dealing with the quantitative calculation procedures. Also, the section on fluid mechanics is somewhat outdated; there are more recent methods that are more accurate or more practical than some of those presented, but these are minor objections. The book is well written and clear, and the authors are eminent authorities in this field. **Summing Up:** Recommended. ★★ All academic students and their instructors, and professional engineers.—*R. Darby, emeritus, Texas A&M University*

49-1487 TA190 MARC
De Marco, Alberto. **Project management for facility constructions: a guide for engineers and architects**. Springer, 2011. 189p bibl index afp ISBN 9783642170911, \$99.00

De Marco (Polytechnic Univ. of Turin, Italy) addresses the issues related to managing construction projects, from the vantage point of the performing organization, in 14 chapters. The premise is that the design of



the work has already been completed and that a construction contractor will need to implement the construction. The first 11 chapters deal with strategies in project selection and with handling projects that have been commissioned for implementation. Two chapters focus on managing the contracts that have been awarded to the performing organization. The last three chapters concern probabilistic decision making and scheduling and dealing with risk. The book covers the grouping of projects within the performing organization and the tools used to manage various aspects of those projects, such as planning for people, material, and equipment resources. De Marco also discusses important tools for cost estimating, scheduling, and cost management. This book will be useful for a lower-division undergraduate introductory course in construction management at both two- and four-year colleges. **Summing Up:** Recommended. ★★ All undergraduate students.—*P. F. Radl, formerly, Western Carolina University*

49-1488 TK2945 2010-47695 CIP
Fletcher, Seth. **Bottled lightning: superbatteries, electric cars, and the new lithium economy.** Hill and Wang, 2011. 260p bibl index ISBN 9780809030538, \$26.00

This compelling combination of history, science/technology, and the human drive to control and preserve the environment comes together as popular science writer Fletcher tells the story of lithium batteries. A brief prologue traces the erratic electrification of automobiles with a special focus on the Chevrolet Volt. The first chapter surveys the development of modern electric storage batteries from the static electric charges on amber demonstrated by Thales of Miletus in 600 BCE, through the Leyden jar in the 1740s, the pioneering work of Luigi Galvani and Alessandro Volta, Benjamin Franklin, and Thomas Edison's decade-long effort to replace lead-acid batteries with his high-capacity nickel-iron alkaline battery. Edison's perfection of this battery was offset by Charles Kettering's electric starter, which used a lead-acid battery, eliminating the need to hand crank a gas-powered engine. Although inexpensive gasoline supplies ultimately hibernated electric passenger car development, electric motors were eventually used for trolleys and trains. Much is said about the lightness of lithium atoms, but it is important to recognize that current lithium ore reserves are concentrated in South America and China. Fletcher keeps the thread of electric car development going throughout eleven chapters, with diversions to economics and naysayers' critical comments, using a narrative style that maintains overall interest. **Summing Up:** Highly recommended. ★★★ All readers.—*R. M. Ferguson, emeritus, Eastern Connecticut State University*

49-1489 GE350 2010-30991 CIP
Matlock, Marty D. **Ecological engineering design: restoring and conserving ecosystem services,** by Marty D. Matlock and Robert A. Morgan. Wiley, 2011. 339p bibl index ISBN 9780470345146, \$130.00; ISBN 9780470875742 e-book, contact publisher for price

Matlock (Univ. of Arkansas; senior ecologist and professional engineer) and Morgan (environmental quality manager, Beaver Water District; professional engineer) draw on their respective broad experience and operational engineering expertise to write this book. They define ecological engineering by three axioms: "Everything is connected"; "Everything is changing"; and "We are all in this together." One could describe the vast scope of the subject as "everything on Earth." Covering it in 300-plus pages requires extreme compression. The authors define the book's goals in terms of "sustainable prosperity," a concept analogous to "sustainable development," discussed in the World Commission on Environment Development's 1987 report (*Our Common Future*),

emphasizing design and restoration processes for ecosystem services and guidance on environmentally low-impact development and urban design. They provide examples of global and regional phenomena, extensive lists and classifications, selected equations (e.g., population growth and migration rates), modeled systems, and concise guidance for operational problems. Chapters include "Defining Place: Biomes and Ecoregions," "Ecosystem Control and Feedback Systems," and "Ecosystem Design in Agriculture and Industry." The print is large and clear, but photographs and some diagrams involving shading lack contrast and clarity; selected references follow each chapter. Useful as an introductory text for engineering, and earth and environmental science students. **Summing Up:** Recommended. ★★ Academic students, all levels.—*F. T. Manheim, George Mason University*

49-1490 HD9698 2011-1493 MARC
Nuclear energy development in Asia: problems and prospects, ed. by Xu Yi-chong. Palgrave Macmillan, 2011. 246p bibl index ISBN 9780230240247, \$85.00

This book, part of the "Energy, Climate and the Environment" series, is composed of 11 chapters written by different authors on nuclear energy developments, current and future policy, and major upcoming issues in Asia. It is particularly focused on China, India, Japan, and South Korea. Xu Yi-chong (politics and public policy, Griffith Univ., Australia) has authored several energy-related books (e.g., *The Politics of Nuclear Energy in China*, CH, Jul'11, 48-6549). This title is particularly relevant to her affiliated institution as Australia is one of the providers of uranium to Asian countries (discussed in chapter 10 by Stuart Harris). The book is clearly written and reads easily; no special subject background is needed to follow the text. The proper use of tables makes quantitative comparisons easy to perform. Overall, this is a broad, accurate overview of nuclear energy activities in Asian countries. It will be valuable to energy policy makers, and also nuclear energy activists, researchers, and students, particularly in the area of energy policy. It is one of a very few books on Asian nuclear energy developments, and will be an important acquisition for academic libraries and libraries of management, business, and political institutes/organizations. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals; general readers.—*M. Alam, Massachusetts Institute of Technology*

49-1491 TD196 2010-31301 CIP
Rider, Traci Rose. **Understanding green building materials,** by Traci Rose Rider, Stacy Glass, and Jessica McNaughton; ed. by Karen Levine. W.W. Norton, 2011. 189p index ISBN 9780393733174 pbk, \$24.95

The many materials used in buildings, seen and unseen, are selected based on performance, durability, cost, aesthetics, building codes, familiarity, availability, and other factors. These materials influence whether a building is "green," sustainable with respect to energy, water, environment, and health. This book, a follow-up to Rider's *Understanding Green Building Guidelines* (CH, Feb'10, 47-3186), focuses on the concepts and material properties that promote environmental sustainability. In four introductory chapters, sustainability experts Rider (Trace Collaborative) and Glass and McNaughton (both, CaraGreen) address green building rating systems such as LEED, criteria for material performance, material labeling and certification, and life cycle analysis, a holistic evaluative approach. The next seven chapters, "Structural Materials," "Wall Systems," "Flooring," "Countertops," "Millwork," "Furniture," and "Finishes," provide a descriptive analysis of different material types. The concluding chapter discusses trends. Written in a



conversational, nontechnical tone, the book provides a valuable overview of this fast-changing field. It does not attempt to list the websites that are needed to identify the latest types and sources of green materials. Still, it will be useful to individuals interested in understanding how to select and use better materials in buildings, and how to effectively communicate these choices. **Summing Up:** Recommended. ★★ All students, faculty, and practitioners.—*S. A. Batterman, University of Michigan*

49-1492 TJ211 2010-28053 CIP
Siegwart, Roland. **Introduction to autonomous mobile robots**, by Roland Siegwart, Illah R. Nourbakhsh, and Davide Scaramuzza. 2nd ed. MIT, 2011. 453p bibl index afp ISBN 0262015358, \$60.00; ISBN 9780262015356, \$60.00

The first edition of this textbook (2004) is one of the most used robotics books in this reviewer's academic library for both research and teaching. First edition authors Siegwart (Autonomous Systems Lab, ETH Zurich, Switzerland) and Nourbakhsh (Robotics Institute, Carnegie Mellon Univ.) added a third author, Scaramuzza (ETH Zurich), to this new work. This second edition will now replace the first in this reviewer's library and for his teaching, as it provides greater depth into topics such as image processing and simultaneous localization and mapping (SLAM). Despite the word "introduction" in the title, it is not a book to be used for an undergraduate robotics course. The first three chapters ("Introduction," "Locomotion," and "Mobile Robotic Kinematics") are accessible to students who have taken math and physics. The fourth chapter, "Perception," begins to wade into some more complex topics and starts focusing more on algorithms and less on hardware. The last two chapters, "Mobile Robot Localization" and "Planning and Navigation," introduce new topics, but the material is definitely geared toward a more advanced reader with sufficient background in probability and statistics, and can be used as an introduction to artificial intelligence. **Summing Up:** Recommended. ★★ Advanced upper-division undergraduates, graduate students, and professionals working in unmanned systems research.—*R. S. Stansbury, Embry-Riddle Aeronautical University*

Health Sciences

49-1493 RA441 2010-52990 CIP
Africa: a practical guide for global health workers, ed. by Laurel A. Spielberg and Lisa V. Adams. Dartmouth College, 2011. 287p bibl index afp ISBN 9781584659761 pbk, \$24.95; ISBN 9781611680188 e-book, contact publisher for price

After a brief introduction to humanitarianism, health, and health systems in Africa and a list of practical tips for those making a first trip to Africa (such as a packing list and information about acquiring vaccines and visas), the bulk of this book consists of profiles of six countries (Ghana, Botswana, South Africa, Rwanda, Tanzania, Uganda) and one region (the Maghreb: Algeria, Morocco, and Tunisia). Each of these chapters consists of an overview of the history, culture, and health systems of the country; a summary of key current health issues; and several pages of development indicators culled from United Nations agency reports. The contributors include a mix of medical students, global health researchers, and senior professionals with work or volunteer experience in Africa. **Summing Up:** Recommended. ★★ Upper-division undergraduates, graduate students, researchers, and professionals/practitioners.—*K. H. Jacobsen, George Mason University*

49-1494

[Internet Resource]

Agency for Healthcare Research and Quality (AHRQ)

URL: <http://www.ahrq.gov/>

[Revisited Aug'11] This Web site has changed considerably since its last review (CH, Jun'06, 43-5919), but the AHRQ continues to strive to "improve the quality, safety and efficiency of healthcare for all Americans." As one of 12 US Department of Health and Human Services agencies, the AHRQ has expanded its coverage of health-care-related subjects. Available resources remain both impressive and plentiful. These include clinical information, evidence reports, news information, grant information, surveys, health information technology, complete scientific studies, original research reports (full text), and information on priority populations (e.g., minorities, children). The redesigned site includes podcasts, RSS feeds, *Twitter* updates, a *YouTube* channel, and a *Facebook* presence. A particularly useful tool is the Comparative Effectiveness section, with the goal of offering the "best possible information about treatment choices." These resources provide comparisons of certain medical treatments, allowing patients to assess a variety of treatment programs for different diseases via, e.g., reading materials, an audio version of documents, and printable PDFs. If the guides compare medicinal products, they include a price table of the different drugs available.

Some guides provide patients with a list of helpful questions they can ask physicians. The State Snapshots section provides annual information on the progress of the nation's states on specific health care quality measures. Users may select states from a map and view certain health conditions (such as asthma and diabetes) by prevalence of their occurrence. Users may browse, using an A-Z index; search by keyword; and arrange for e-mailed updates. Many resources are also available in Spanish. The main page is a little busy, but in general the almost-overwhelming amount of information is well organized. This resource will benefit patients, consumers, researchers, and all health care providers. **Summing Up:** Highly recommended. ★★★ Upper-level undergraduates and above; general readers.—*E. S. Danowitz, Delaware County Community College Library*

49-1495 R729 2010-41490 CIP
Barken, Frederick M. **Out of practice: fighting for primary care medicine in America**. ILR Press, 2011. 244p bibl index afp ISBN 9780801449765, \$26.95

After more than 20 years, Barken (Ithaca College) left family/primary care practice. He discusses the "crisis" in primary care, drawing on both research and personal experiences in developing his argument. Barken notes that a number of factors are dramatically reducing the number of primary care physicians in the United States at a time when an aging population is demanding more primary care. This phenomenon is part of a shift in medical practice, which is moving away from relationally based care to specialist, efficiency-based care. These changes are driven by an overly market-oriented model of care. The personal relationship to a physician is important to most patients, and this volume describes patients' dissatisfaction with these changes. This book makes clear that changes in medical practice also are leading to a decline in the quality of care, eliminating primary care physicians who know their patients' histories and who coordinate the medications and treatments received from specialists. Barken ends with a description of future medical care if the trend is not reversed, and with a set of prescriptions for reversing this trend, including changes in malpractice laws and incentives for attracting



residents into primary care. **Summing Up:** Recommended. ★★ Lower-division undergraduates through professionals/practitioners; general readers.—*C. L. Kammer, The College of Wooster*

49-1496 R850 2010-54555 CIP
Designing and conducting gender, sex & health research, ed. by John L. Oliffe and Lorraine J. Greaves. SAGE Publications, 2012. 257p bibl index afp ISBN 141298243X pbk, \$65.95; ISBN 9781412982436 pbk, \$65.95

Oliffe and Greaves (both, Univ. of British Columbia) offer a work with chapters that address design, methods, and dissemination of gender, sex, and health research. The volume is a product of a Canadian research team, NEXUS, that studied the social context of health behavior from 2003 to 2009. Its organization is traditional, with four parts titled "Context and Concepts," "Design," "Sex and Gender Research," and "Policy, Process, and Products." Within this framework the contributors emphasize the critical importance of incorporating sex and gender into the design, data collection, data analyses, and translation/transmission of health research. Of particular value are the chapters that describe research methods and dissemination activities by using empirical examples of health studies designed to account for issues of sex and gender. This volume makes important contributions to the health research literature in its coverage of the ethics of incorporating sex and gender into health research; the diffusion of knowledge into policy, practice, and intervention; and nontypical research designs and methods such as analysis of visual artifacts, secondary data analysis, and content/discourse analysis. **Summing Up:** Highly recommended. ★★★ Upper-level undergraduates and above.—*P. Lefler, Bluegrass Community & Technical College*

49-1497 R723 2010-47204 CIP
 Dubler, Nancy Neveloff. **Bioethics mediation: a guide to shaping shared solutions**, by Nancy Neveloff Dubler and Carol B. Liebman. Rev. and expanded ed. Vanderbilt, 2011. 320p bibl index afp ISBN 9780826517715, \$79.99; ISBN 9780826517722 pbk, \$34.95

This revised edition by Dubler (emer., Albert Einstein College of Medicine) and Liebman (Columbia Law School) retains many of the strengths of the earlier edition (1st ed., CH, Nov'04, 42-1593). It offers compelling arguments for considering mediation, pays attention to power differentials, and clearly describes mediation techniques. In addition, the authors have strengthened this edition with a clearer framework for bioethical mediation and added both updated scenarios and research-based sections on the use of chart notes and role-playing. These extensive revisions make for a volume that is worth careful consideration for those new to bioethical mediation and for those already familiar with Dubler and Liebman's earlier work. Although the authors write specifically for health care ethics consultants and bioethics committees, the book is of much broader interest and utility. The role-playing, scenarios, and transcripts are pedagogically strong for use in formal and informal educational settings. This is a valuable book for all health care providers who want to understand and resolve bioethical concerns and for faculty who teach bioethics. **Summing Up:** Highly recommended. ★★★ Graduate students through professionals/practitioners.—*M. D. Lagerwey, Western Michigan University*

49-1498 RA418 2010-34211 CIP
Enhancing human capacities, ed. by Julian Savulescu, Ruud ter Meulen, and Guy Kahane. Wiley-Blackwell, 2011. 557p bibl index afp ISBN 9781405195812, \$99.95

In this comprehensive collection leading scholars discuss the ethical and practical questions raised by the latest developments in biotechnologies. The articles are rich in details on prospective enhancements of physical, cognitive, mood, and moral capacities. Ethicists clarify the fundamental issue of which enhancements to human capacities should be pursued by asking what human enhancement means, and how it contrasts with normal human nature. The discussions suggest a consensus view that embraces various attempts to enhance human capacities—provided, however, that the innovators and the policy decision makers proceed with caution, assessing the risks and benefits. Both the hopes and fears associated with applying new biotechnologies to alter human capacities may be exaggerated. Beneath the examination of particular cases—whether they involve drugs used to enhance intelligence or athletic performance, or genetic engineering to counter disease and increase life span—loom questions concerning the ultimate aims in enhancing both the well-being of individual lives and the welfare of collective humanity. This volume is appropriate for all who wish to reflect seriously on the prospects for enhancing human capacities. References in the articles range widely over the literature in bioscience and philosophy. Comprehensive index included. **Summing Up:** Recommended. ★★ Lower-level undergraduates and above; general readers.—*H. C. Byerly, emeritus, University of Arizona*

49-1499 RA395 Can. CIP
 Fierlbeck, Katherine. **Health care in Canada: a citizen's guide to policy and politics**. Toronto, 2011. 382p bibl index ISBN 9781442640030, \$85.00; ISBN 9781442609839 pbk, \$37.95

This excellent volume features important, accessible, accurate, and well-reasoned material to assist readers in understanding the Canadian health care system, as well as other similar systems. Besides providing current information, it is sensitive to the nuances of what goes into making public policy: policy choices, constraints, strategies, values, costs, trade-offs, institutions, and interests. Fierlbeck (political science, Dalhousie Univ.) is clear about the complexity of such systems and their resistance to change. The audience for this volume is at times unclear. The first six chapters provide excellent summaries, for the general reader, of the Canadian system and its political, legal, and structural aspects. Following these is a 50-page chapter on drug policy, which is interesting for an expert but highly complex and detailed. Also included are three chapters on similar systems in Europe and the United States, for comparison. *Health Care in Canada* features good charts, detailed explanations, and a superb bibliography and glossary. It is a very important, up-to-date resource for all who are interested in the Canadian system, comparative systems, and the details of health policy and politics. **Summing Up:** Highly recommended. ★★★ Upper-level undergraduates and above.—*P. LeClerc, St. Lawrence University*

49-1500 RC489 2010-8255 CIP
 Junge, Maxine Borowsky. **The modern history of art therapy in the United States**. Charles C. Thomas, 2010. 341p bibl indexes ISBN 9780398079406, \$73.95; ISBN 9780398079413 pbk, \$53.95

Junge (emer., Loyola Marymount Univ., Los Angeles), herself a noted art therapist, presents a new version of her 1994 work, with Paige Asawa, titled *A History of Art Therapy in the United States*. Divided into four parts that include study questions, this new volume is organized chronologically. It begins with influences on the formation of art therapy as a profession and then looks at important art therapists and developments decade by decade. Poorly sourced, with an overreliance



on *Wikipedia* (CH, Mar'06, 43-3736), the book manages to be both too broad and too narrow. Junge begins each section with a sweeping look at historical events of a decade, but in most instances fails to tie these events in with art therapy. Then, conversely, the author delves into the narrowest of details. For instance, the minutiae about the formation of the American Art Therapy Association is considerable. More focus on art therapy itself and less on the clashing personalities of prominent art therapists would have made this a stronger work. **Summing Up:** Optional. ★ Upper-level undergraduates, graduate students, and professionals.—*M. L. Zafron, University at Buffalo*

49-1501 RA418 2010-42464 CIP
Jutel, Annemarie Goldstein. **Putting a name to it: diagnosis in contemporary society.** Johns Hopkins, 2011. 175p bibl index afp ISBN 9781421400679, \$45.00

What's in a name? When it comes to illness and disease, the appellation is everything—a label, a diagnosis of what is wrong, and possibly an understanding of prognosis. In this slim volume, Jutel (sociology, Victoria University of Wellington, NZ) explores the sociology of diagnosis. The book begins with a chapter on the principles of classification and the process of social framing. Following is a discussion of two specific diagnoses: overweight and fetal death. The next two chapters investigate diagnosis in the doctor-patient relationship. Chapter 5 describes the way that nonmedical sources promote diagnoses, and chapter 6 reviews the technologies of diagnosis. Finally, a conclusion summarizes the issues from the preceding chapters into a model for studying diagnosis. Placing the taxonomy of medicine within a critical perspective provides instrumental insights into how one comes to understand the many categories of health, illness, sickness, and disease. By focusing on the process of diagnostic determination, the author promotes the initial development of a theoretical platform for sociological study. Written in an academic style, this volume will benefit readers ranging from undergraduates to faculty. It will be an important resource for health care professionals, especially those in the social sciences.

Summing Up: Recommended. ★★ Lower-level undergraduates and above; general readers.—*J. D. Campbell, University of Missouri—Columbia*

49-1502 RC553 M A R C
Kalyva, Efrosini. **Autism: educational and therapeutic approaches.** SAGE Publications, 2011. 185p bibl index afp ISBN 9780857024886, \$115.00

Autism is of increasing concern for families, schools, and professionals because more and more children are identified as having the disorder. Kalyva (City College, Thessaloniki, Greece) describes the currently used treatment approaches to autism-spectrum disorders (ASD) and the procedures and efficacy of each. She also discusses the scientific research related to each approach, presenting the material in easy-to-understand terminology. The author not only looks at scientifically proven therapies, but also provides detailed information about treatments without adequate, scientifically proven effectiveness. Throughout the book, a "Question for Discussion" is presented to allow critical thinking about the material. A valuable source of information on children with ASD, this book could serve as a supplemental textbook at the university level. Parents and caregivers of children with ASD will find it an accessible resource for making decisions regarding treatment. **Summing Up:** Highly recommended. ★★★

Upper-division undergraduates through faculty and professionals; general readers.—*C. M. Thornton, Elmira College*

49-1503

[Internet Resource]

National Center for Health Statistics

URL: <http://www.cdc.gov/nchs/>

[Revisited Aug'11] The National Center for Health Statistics (NCHS), a partner of the Centers for Disease Control and Prevention, is the largest US provider of health-related statistics. The usability of this Web site (previously reviewed, CH, Mar'06, 43-4062) continues to improve. Although the home page looks busy, it provides access to an abundance of information, with the most frequently used items in the center of the page. FastStats provides statistics by topic. What's New displays important topical headlines, e.g., "Women More Likely than Men to Use Internet to Find Health Information." The Tools and Resources section offers links ranging from Health Data Interactive to Injury Data and Resources to VitalStats. An A-Z bar at the top provides easy access to the full content of the site. The left navigation bar links to surveys, data, and publications. NCHS for You has portals to information specifically of interest to librarians, older Americans, and survey participants. The NCHS Top 10 links to the most used resources. On this attractive site, the various light shades of green go well with the white background and blue links. Useful Web tools, available in the top right corner, include the option to change text size, receive e-mail or RSS updates, or access sharing and bookmarking links. Overall, this is a pleasing site that gives easy access to valuable, authoritative information.

Summing Up: Highly recommended. ★★★ Lower-level undergraduates through professionals/practitioners; general audience.—*B. C. Thomsett-Scott, University of North Texas*

49-1504 QH332 2010-35404 CIP
Petersen, Alan. **The politics of bioethics.** Routledge, 2011. 168p bibl index afp (Routledge studies in science, technology, and society, 14) ISBN 9780415990066, \$95.00; ISBN 9780203830338 e-book, contact publisher for price

Assumptions about progress, autonomy, and beneficence frame most thinking and writing about bioethics, but few titles explore who benefits from those assumptions. Petersen (Univ. of Plymouth, UK) uses sociological theory to explore the politics and sociology of bioethics, looking at whose voices are left out of the current debates and why. He considers how current writing on progress creates and manages expectations for entities such as corporations and universities that want to use such expectations to gain a portion of limited research funding. This volume incorporates, as a case study, biobanks, which collect data about a huge number of individuals across time in order to track the emergence of diseases in populations. Petersen uses the case of biobanks to assess people's commitment to bioethical discussion, and to determine whose concerns are emphasized in such discussions. He argues that a new bioethical framework with more social input earlier in the process of technology development, and greater attention to issues of distribution, will make bioethics more responsive to ordinary citizens' concerns. With its emphasis on the "blindspots" of current models, this work should prove thought-provoking to advanced students of ethics and medicine. **Summing Up:** Recommended. ★★ Graduate students through professionals/practitioners.—*A. W. Klink, Duke University*

49-1505 QH588 M A R C
Stem cells: scientific facts and fiction, by Christine Mummery et al.; ed. by the author. Academic Press, 2011. 312p index ISBN 0123815355 pbk, \$79.95; ISBN 9780123815354 pbk, \$79.95

In this updated volume, originally published in Dutch (2006),



Mummery (Leiden Univ., The Netherlands) et al. achieve their goal to “provide a state of the art overview of the scientific facts and to highlight the science fiction” surrounding stem cells. Written in clear language, this book presents sufficient basic information about cell biology, cellular function, and embryology to equip readers to understand most of the text, which focuses on stem cells and their potential uses in disease treatment, cloning, and drug discovery. Numerous high-quality photographs and illustrations distinguish this title from other similar, recent publications; images depict subjects ranging from researchers and brave patients, to laboratory equipment and procedures, to micrographs of various types of cells and tissues. Additional desirable features include current case studies and an introduction to the International Society of Stem Cell Research (ISSCR). Also of note is a chapter titled “Stem Cell Tourism,” which explains the differences between commercial treatments and standard clinical practice. The “Legal and Intellectual Property Issues Associated with Stem Cells” chapter further addresses ISSCR guidelines, describes companies and alliances that fund extensive stem cell research, and explains differing approaches in Europe and the US to patents for laboratory methods and biological materials. **Summing Up:** Recommended. ★★ Lower- and upper-level undergraduates, general readers.—*F. G. Shrode, Utah State University*

49-1506 RM301 2010-53573 CIP
Stockwell, Brent R. **The quest for the cure: the science and stories behind the next generation of medicines.** Columbia, 2011. 265p index afp ISBN 9780231152129, \$27.95; ISBN 9780231525527 e-book, contact publisher for price

The telling of scientific discoveries too rarely places the personalities and scientific state of the art into a historical perspective. In *Quest for the Cure*, Stockwell (biological sciences and chemistry, Columbia Univ.) manages to combine these elements to explain the events and technologies important in the progression of pharmaceutical research and development. Many of the stories are simply not conveyed in any textbooks that students would use today. The book is well organized and includes many interesting, clever analogies to explain what can be complicated scientific problems. It also adds stories personal to the author, including his role in the founding of CombinatoRx, a company with a goal of discovering useful drug combinations. This chapter illustrates vividly how a company founded on a great idea and backed by investors can still find success difficult to achieve. The book is written for nonscientists, so the development of point(s) discussed in each chapter can be too lengthy for a more advanced reader. Overall, it strikes a balance of pessimism (too few “druggable” proteins in the human genome) with optimism (a myriad of significant protein-protein interactions to target). **Summing Up:** Recommended. ★★ All levels/libraries.—*P. W. Baures, University of Tulsa*

49-1507 [Internet Resource]
Substance Abuse and Mental Health Services Administration (SAMHSA)
URL: <http://www.samhsa.gov/>

[Revisited Aug'11] Established in 1992, SAMHSA has the mission “to reduce the impact of substance abuse and mental illness on America’s communities.” Currently focused on eight strategic initiatives, SAMHSA aims to coordinate effective substance abuse and mental health services, make research available, and provide data for policy making. This graphically pleasing site (previous review, CH, Dec'07, 45-2071) is a trove of authoritative information for two main audiences—researchers

and the public. The links to the eight initiatives feature descriptions, resources, and data on many SAMHSA-funded programs. Coverage includes recovery support, military families’ problems, child welfare, and health reform. A search box is available, and navigation is quick; however, the content is so vast that one may need to try several approaches to find specific information. Top-level tabs on the home page generally lead to agency-centered information. Users should not overlook the Publications tab, which leads to hundreds of electronic and print publications, categorized by tabs with hover menus.

Three sections—Issues, Conditions and Disorders; Substances; and Treatment, Prevention, and Recovery—lead to consumer-oriented sources (often free), including online PDFs and print resources. One subdivision under Publications, titled Professional and Research topics, likewise leads to a wealth of online sources for the audience indicated. SAMHSA’s “integrated data strategy” is evident in the Data, Outcomes, and Quality section, which links to data sources including the Center for Behavioral Health Statistics and Quality; national surveys; state-level data; data sets; and other statistical reports. Information under the top-level Grants tab is very current; a section elsewhere, labeled Laws and Regulations, was updated nine months ago. This resource should be a landing site for students in social work, public health, counseling/mental health, behavioral health policy, and the health professions generally. **Summing Up:** Recommended. ★★ Lower-level undergraduates and above; general audience.—*M. K. Hartung, Florida Gulf Coast University*

49-1508 R726 2010-45874 CIP
Twelve breaths a minute: end-of-life essays, ed. by Lee Gutkind. Southern Methodist, 2011. 267p afp ISBN 9780870745713, \$23.95

Gutkind has assembled provocative stories about promoting a good death from the voices of those who have witnessed death. The essays are primarily written by professional caregivers. As they pour out their reminiscences of dying patients, these caregivers express feelings of helplessness, guilt, and sorrow, but also pride and gratitude. “We all want that high of knowing we changed the course of things, that we had power over death just once.” Most of the essays portray what is wrong with medical care at the end of life. As the book indicates, “death in the hospital is troubling for everyone involved” and often “contrary to the public’s sense of a peaceful death.” Contributors discuss whether the increasing use of technology to prolong life (but not necessarily quality of life) is a blessing or a curse. And they indicate that nursing homes often end up as laboratories “for cultivating suffering,” particularly for the increasing elderly population. Health professionals’ training has been lacking in fostering the “knowledge, skills and attitudes to care well for the dying patient” and especially “considerations of empathy, humility, compassion, respect and integrity.” This volume shows the need for discussions that will lead to a better understanding of what to do when no easy solutions are available. **Summing Up:** Recommended. ★★ All levels.—*L. K. Strodman, University of Michigan*

49-1509 RA566 2010-3248 MARC
Urban health: combating disparities with local data, [ed.] by Steven Whitman, Ami M. Shah, and Maureen R. Benjamins. Oxford, 2011. 380p bibl index afp ISBN 0199731195, \$69.95; ISBN 9780199731190, \$69.95

This book has a very broad title but a very, very narrow focus. It consists of a series of community public health case studies conducted by the Sinai Urban Health Institute, the research arm of the Sinai Health System of Chicago. The case studies were conducted in eight



disadvantaged Chicago communities within the service area of the health system. Unfortunately, this book suffers from a number of major problems. It is poorly researched, edited, and written. For example, the contributors fail to discuss other programs or similar case studies conducted in Chicago and other cities. They fail to discuss important past studies such as those conducted by researchers at Jane Addams's Hull House. They also do not discuss Chicago's rich sociological and public health history. Additionally, the chapters do not relate well to one another, and the first and last chapters tell the reader very little. The book also contains a number of factual errors. In summary, this book appears to be a rather large and poorly written advertisement for the Sinai Urban Health Institute. **Summing Up:** Not recommended.—*R. M. Mullner, University of Illinois at Chicago*

49-1510 RC276 2010-18126 CIP
Wailoo, Keith. **How cancer crossed the color line.** Oxford, 2011. 251p bibl index afp ISBN 9780195170177, \$27.95

Wailoo (Princeton) looks at an important aspect of the social history of cancer—the evolution of its perception and social meaning as a disease selective for race. As he carefully discusses, the color line was not the only marker that characterized theories of susceptibility and impact when it came to cancer—gender being especially important, and class being not far behind—but race does have a distinctive, perhaps unique role in the construction of the meaning of cancer in 20th- and early-21st-century American history. The popular imagination, the medical research/treatment establishment, and an expanding public health apparatus all engaged in this construction. The results are complex and not always obvious, as Wailoo explains. While some aspects of this story appear as incongruities between stereotypes and clinical or epidemiological reality, in other cases the very nature of epidemiological knowledge and scientific knowledge is called into question. In this sense Wailoo has written both a history and an important theoretical work. **Summing Up:** Highly recommended. ★★★ Lower-division undergraduates and above; general readers.—*J. H. Barker, Converse College*

Information & Computer Science

49-1511 TA167 2010-38955 CIP
Boy, Guy A. **The handbook of human-machine interaction: a human-centered design approach.** Ashgate, 2011. 455p bibl index ISBN 9780754675808, \$124.95

It is a challenge to create quality hardware with a good human-to-machine interface; the device can easily fail without this essential component. Similarly, editing a book that involves the contributions of more than 30 authors and maintaining a continuity of style and terminology presents formidable challenges. In this case, Boy (Florida Institute for Human and Machine Cognition) meets these challenges. The result is a well-organized book, composed of 20 chapters divided into three parts, that presents the state of the art in human-machine interaction. Part 1, "Analysis" (six chapters), presents the foundational elements of human-machine interaction. Part 2, "Design" (seven chapters), addresses the fundamental approaches to designing human-to-device interfaces. The final part, "Evaluation" (seven chapters), includes chapters on user experiences and chapters focusing on particular important examples of well-designed and implemented interfaces. Each chapter has a separate set of references, and the book

is tied together with an excellent index that does a good job assisting the reader in cross-referencing between the chapters. In all, an excellent snapshot of the current status of this important topic. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals.—*J. Beidler, University of Scranton*

© **49-1512**

[Internet Resource]

Cprogramming.com

URL: <http://www.cprogramming.com/>

[Visited Aug'11] *Cprogramming.com*, established in 1996, is managed by Alex Allain, a software engineer with prior C programming teaching experience. He collaborates with other contributors to regularly update the site. *Cprogramming.com* includes step-by-step beginner tutorials for C and C++ as well as advanced tutorials. The 18 C and nearly 30 C++ beginner tutorials cover introductory and intermediate programming topics, including variables, program flow, trees, and, in the case of C++, principles of object-oriented programming. Though the treatment of C/C++ programming concepts is perhaps briefer than that found in a standard programming book, discussions are clear and include examples. Users can go through the tutorials and take quizzes provided for many, but not all, of the beginner tutorials. Each lesson has a printable version, allowing users to go through the lesson without viewing advertisements.

There are articles on advanced topics (e.g., data structures, heaps, and bubble sort), related tutorials (e.g., game and graphics programming), and support topics (e.g., debugging and memory management). The advanced topics and tutorials do not include sequential navigation, but links to related topics are included when applicable. The Language Syntax Reference and Function Lookup sections are useful, but the Glossary had no content at the time of this review. Social networking features are available, and users can find forums to ask and answer questions and receive e-mail updates when new content is posted. The site also offers fee-based expert assistance. Compared to other free sites for learning C/C++ available at this time, *Cprogramming.com* has fewer obtrusive ads, clear and concise lessons, and more advanced and related topics. Overall, a useful resource for beginners comfortable with working through online tutorials and those who want to review or extend their knowledge of these languages. **Summing Up:** Recommended. ★★ Students of all levels and professionals/practitioners.—*J. L. Waterhouse, University of Illinois Springfield*

49-1513 GV1469 2011-5062 CIP
Dillon, Roberto. **The golden age of video games: the birth of a multi-billion dollar industry.** CRC Press, 2011. 183p bibl index afp ISBN 1439873232 pbk, \$39.95; ISBN 9781439873236 pbk, \$39.95

Tomes such as Tristan Donovan's *Replay* (2010) and Steven Kent's *The Ultimate History of Video Games* (2001) have attempted to comprehensively cover the gamut of gaming's past. This work excels because game designer Dillon (DigiPen Institute of Technology, Singapore) concisely highlights in a mere 170 pages the groundbreaking games, personalities, companies, and hardware during what he considers "the golden age of video games" between 1977 and 1993. Because of this focus, the book does lack some of the breadth and depth found in other, larger volumes. The author also inexplicably relegates the topics of retro game collecting and, more significantly, portable gaming to brief appendixes. The latter especially deserves more coverage because of its influence on the mobile gaming space of today. Nevertheless, those looking for insight into the formative years of the game industry will be well served. **Summing Up:** Recommended. ★★ All students in game-



development-related programs, researchers/faculty, and professionals/practitioners; general audiences.—*A. Chen, Cogswell Polytechnical College*

49-1514 QA76 2011-9334 CIP
Game development tools, ed. by Marwan Y. Ansari. CRC Press, 2011. 327p index ISBN 9781568814322, \$49.95

Although the title suggests that this book discusses a range of topics related to game development, it is actually about very specific and focused tools useful in the creation of complex digital games. The volume, edited by software engineer Ansari, is divided into three parts and 22 chapters. The chapters, all written by different authors who are experts in their fields, often utilize extremely technical language and presuppose advanced knowledge of the material under discussion. Content ranges from how to create and manage reusable assets for games to ways to optimize code, graphics, and sound assets for smoother deployment. Aside from two or three chapters, which are written in language appropriate to advanced undergraduates, the bulk of the text would be more appropriate for graduate students working on game applications or for professionals in the game industry seeking to expand their skill sets. Another potential drawback for academic use is that the instructions are specific to individual software packages and thus not generalizable to other products with similar functionality. The individual topics are very thoroughly and clearly explained with high-quality graphics. This is a good resource for experienced game designers seeking to optimize game development pipelines. **Summing Up:** Recommended. ★★ Graduate students, researchers/faculty, and professionals/practitioners.—*E. Bertozzi, Long Island University*

49-1515 QA76 2010-48440 MARC
Human attention in digital environments, ed. by Claudia Roda. Cambridge, 2011. 323p bibl indexes ISBN 9780521765657, \$99.00

For those developing digital systems, human attention and methods for maximizing human attention are vital. Attention-aware systems are designed to try to overcome attention barriers and increase human attentional processes. Here, editor Roda (American Univ. of Paris, France) has carefully assembled a collection of 12 chapters spanning the fields of human-computer interaction, cognitive psychology, and neuroscience. Written by an international, interdisciplinary selection of researchers, including John Sweller, the creator of cognitive load theory, this title addresses theoretical and empirical perspectives on attention and issues related to the design of digital systems. The book is organized into three sections. The first provides the concepts that underlie human attention, the second explores theory and software tools beneficial to the design of digital systems, and the third presents samples of individual applications that maximize human attention. This volume provides an effective overview of the topic, including its theoretical foundations and design considerations. Useful for advanced students, specifically those with concentrations in human-computer interaction or cognitive psychology. **Summing Up:** Highly recommended. ★★★ Graduate students and above.—*D. D. Tritt, University of South Carolina Aiken*

49-1516 [Internet Resource]
Information Resources Management Association
URL: <http://www.irma-international.org/>

[Visited Aug'11] The Information Resources Management Association (IRMA) is an international organization whose primary goal is to expand the "overall knowledge and understanding of effective information resource management in the early 21st century and beyond."

IRMA launched its new Web site in May 2011. Searching is powered by IGI Global's InfoSci-onDemand. A key feature is open access to 2,000 research papers from IRMA's past conferences for free download. A search within the Open Access section will give the user access to these free proceedings. Searches on the site as a whole, which covers such subject areas as information science, business, and technology among others, will also return abstracts and page previews of proceedings, book chapters, and journal articles. Most of the results retrieved are from a few publishers, primarily from IGI Global, one of IRMA's site sponsors. The non-open-access results prompt the user to pay for full access.

Instructors who want to send students to a resource that limits results to subject areas within a particular course's focus might find this site to be a good resource. It also might be just as useful to send students to *Google Scholar*. Every item this reviewer found in this resource was also available in full text or in abstract form with the same number of preview pages through *Google Scholar*. However, the IRMA site does have some benefits over *Google Scholar*. The interface has a cleaner layout, and IRMA has implemented facets that allow searchers to limit by year, author, and other key types of metadata following an initial search. In addition, the site's discussion forum allows users to share ideas and discuss a wide range of topics related to information management/technology. **Summing Up:** Recommended. ★★ Graduate students, researchers/faculty, and professionals.—*S. A. Patton, Delta State University*

49-1517 QA267 M A R C
Maruoka, Akira. **Concise guide to computation theory**. Springer, 2011. 298p bibl index afp ISBN 9780857295347, \$69.95

Computability theory is a major achievement of the 20th century. It answers grand philosophical questions related to the limits of logic and the difference between "truth" and "proof," and it also lays the foundation for digital computers, the defining technology of current times. The centrality of this theory suggests that it should be a required part of any undergraduate curriculum, but it is currently required only for computer science students. This work could certainly serve as a text for an undergraduate computer science course, and it might also be considered for presenting these essential modern ideas to students in other majors. Maruoka (Ishinomaki Senshu Univ., Japan) covers the bare essentials: some mathematical background, formal grammars and the Chomsky hierarchy, Turing machines and the undecidability of the halting problem, time complexity, Boolean circuits, and NP-completeness. Some topics had to be omitted from this brief work. For example, other models of computation and other complexity classes are missing. There seem to be no lapses in this easy-to-read English rendition, which was translated from Japanese. Further, well-thought-out diagrams highlight important concepts and help elucidate proofs. An ideal text for a one-term course introducing computation theory to either majors or nonmajors; also appropriate for undergraduate self-study. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates through professionals.—*P. Cull, Oregon State University*

49-1518 HD66 2011-1898 CIP
Moyer, Christopher M. **Building applications in the cloud: concepts, patterns, and projects**. Addison-Wesley, 2011. 326p index afp ISBN 0321720202 pbk, \$39.99 ISBN 9780321720207 pbk, \$39.99

The title of this book makes one expect that experienced programmer/cloud developer Moyer (vice president of technology, Newstex) will treat the topic of cloud computing in a very general sense. However, as the reader inspects the book's content, he/she will notice that it is very specifically



oriented toward deploying applications within the Amazon Web Services cloud. This is not necessarily a bad thing, as Amazon's services provide one of the best examples of cloud computing. The book offers a good introduction related to the history of economic factors that have driven information technology toward cloud computing. The author then describes software as a service, and how cloud computing is used to host such software. He explains all the important considerations, including virtual machine CPU and memory, storage of several different kinds, load balancing, work queues, and clusters. People who would like to use Amazon's services will be quite pleased with the examples and details provided. Numerous code examples and diagrams explain concepts clearly. The book also contains a useful index. Overall, a helpful resource for anyone who would like to deploy an application in the cloud, especially the Amazon cloud. **Summing Up:** Recommended. ★★ Upper-division undergraduates through professionals/practitioners, two-year technical program students, and general readers.—*F. H. Wild III, University of Rhode Island*

49-1519 QA76 2010-40560 CIP
Tucker, Warwick. **Validated numerics: a short introduction to rigorous computations.** Princeton, 2011. 138p bibl index afp ISBN 0691147817, \$45.00; ISBN 9780691147819, \$45.00

Some very basic mathematical structures (particularly the field of real numbers) admit no faithful implementation on real-world computers. While mathematics students learn that round-off errors can render naïve computer numerics unreliable (traditional numerical analysis quantifies this), fundamental conceptual differences separating abstract and computer arithmetic may still hold surprises (e.g., computer arithmetic failure for standard associative laws). This concise but critical examination of computer arithmetic (as manufacturers build it in) thus holds great pedagogical value. Tucker (Uppsala Univ., Sweden) builds on this foundation and turns to methods for users to program numerical calculations using intervals instead of numbers, thereby obtaining unquestionably rigorous results. Many a reader will foresee the broad lines of this, but delicate and unexpected subtleties arise, and certain ingenious techniques turn out to give much better results than do obvious approaches. This short introduction to a burgeoning field confines itself to thus redoing basic one-variable calculus topics: root location by Newton's method, optimization, differentiation, quadrature, and some ordinary differential equations. Beyond obvious practical value, this material offers students an excellent opportunity to revisit and rethink some crucial, fundamental college mathematics. **Summing Up:** Recommended. ★★ Upper-division undergraduates through professionals.—*D. V. Feldman, University of New Hampshire*

Mathematics

49-1520 QA150 M A R C
Allan, Graham R. **Introduction to Banach spaces and algebras,** ed. by H. Garth Dales. Oxford, 2011. 371p bibl index afp (Oxford graduate texts in mathematics, 20) ISBN 9780199206537, \$125.95; ISBN 9780199206544 pbk, \$62.50

The late Allan (Univ. of Cambridge, UK) published a host of important research papers concerning Banach algebras, especially during the 1970s, and advised at least 20 doctoral students at Cambridge. Over a period of decades, he compiled the polished teaching notes in his specialty that form the basis for this text, but sadly he did not live to see its completion

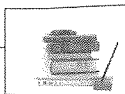
by Dales (Univ. of Leeds, UK), who actually contributed 40 percent of the material without assuming formal coauthorship. Several dozen excellent works, many by world-class mathematicians, already exist to carry students into the field of functional analysis. Aside from many small nuances, a few key features characterize this new entry: no assumption of prior knowledge of Lebesgue integration; substantial emphasis on Banach algebras and their modules (representations); a self-contained introduction to the theory of several complex variables leading to the holomorphic functional calculus; relative brevity; and total lack of emphasis on numerical analysis, PDEs, quantum mechanics, economics, or any other applications. Highly readable prose reflects the experience and expertise of Allan and Dales, and thoughtful organization and visual design make reading a pleasure. Excellent as a bridge to graduate study. **Summing Up:** Highly recommended. ★★★ Advanced upper-division undergraduates and graduate students.—*D. V. Feldman, University of New Hampshire*

49-1521 QA298 2010-50137 CIP
Dunn, William. **Exploring Monte Carlo methods,** by William L. Dunn and J. Kenneth Shultis. Elsevier, 2012. 384p bibl index ISBN 9780444515759, \$121.00

Monte Carlo methods are numerical approximation methods to compute the value of expressions that are too complex to determine in other ways. Most often, these expressions are definite integrals. A classic example is to throw pins at a grid at random, count the number of lines the pins intersect, and use the results to approximate the number pi. This book is an introductory text to these methods. After reviewing the history of the method, Dunn and Shultis (both, mechanical and nuclear engineering, Kansas State Univ.) review the two quintessential theorems from probability theory that make Monte Carlo methods mathematically sound: the law of large numbers and the central limit theorem. In the main part of the book, the authors discuss applications of Monte Carlo methods in various situations and the precision level of the methods. Radiation transport is thoroughly covered. The 75-page appendix is a useful collection of all the theoretical facts (probability theorems and distributions) needed to fully understand the text and of available software packages. The examples are well chosen. There are not too many exercises (about ten per chapter), and none come with full solutions. **Summing Up:** Recommended. ★★ Upper-division undergraduates, graduate students, and researchers/faculty.—*M. Bona, University of Florida*

49-1522 QA184 M A R C
Macdonald, Alan. **Linear and geometric algebra.** CreateSpace, 2011 (c2010). 204p index ISBN 1453854932 pbk, \$30.00; ISBN 9781453854938 pbk, \$30.00

Most mathematics textbooks fill a need or perhaps present content in a better way. This work fits this claim but in an unusual manner. First, a portion of this text could support a linear algebra course but with a special pedagogical approach. Macdonald (emer., Luther College) focuses on conceptual aspects of linear algebra and purposely omits the standard computational algorithms, such as computing matrix inverses, using row reduction, evaluating determinants, and computing eigenvalues. Given the current ready access to technology that can do these computations, this omission is quite refreshing. Second, revealing his true motivation, the author introduces geometrical algebra as a natural component of an introductory linear algebra course. He argues that this integration is both natural and mathematically appropriate: geometrical algebra extends linear algebra's focus on algebraically manipulating vectors as one-dimensional entities to algebraically manipulating multivectors as higher-dimensional



entities. In this context, the combined linear and geometric algebra becomes a necessary, powerful tool or language within physics, computer science, and engineering. Overall, the text and problems are interesting but challenging. The book would be a useful course resource only if an instructor intends to give full attention to the geometrical algebra.

Summing Up: Recommended. ★★ Lower-division undergraduates through professionals.—*J. Johnson, Western Washington University*

49-1523 QA151 M A R C
Stedall, Jacqueline. **From Cardano's great art to Lagrange's reflections: filling a gap in the history of algebra.** European Mathematical Society, 2011. 224p bibl index afp ISBN 9783037190920, \$88.00

Stedall (The Queen's College, Univ. of Oxford, UK) provides a thoroughly engaging book that bridges the gap between 16th- and 17th-century methods of solving equations and what is now dubbed modern or abstract algebra. Though the published works of Cardano elaborated techniques for solving cubic and quartic equations, they lacked a general approach that would lend itself to answering questions about higher-order equations. Stedall leads the reader through advances in algebra that gave rise to the more general theory of equations. Later writers failed to recognize that the ideas of the mathematicians of the 16th and 17th centuries led to the advances that allowed Lagrange to make important insights into a more unified approach in algebra. The author provides generous examples of the actual mathematical techniques developed throughout this period. The book is organized into three sections: "From Cardano to Newton," "From Newton to Lagrange," and "After Lagrange." The one chapter in this last section is the shortest and touches on the beginning of group theory. This wonderful book offers a much-needed guide through the early study of equations, a period of study that provided the fertile basis for Lagrange's important seminal ideas. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates, graduate students, and researchers/faculty.—*R. L. Pour, formerly, Emory and Henry College*

49-1524 QH323 2011-925563 M A R C
Stewart, Ian. **Mathematics of life.** Basic Books, 2011. 358p bibl index ISBN 9780465022380, \$27.99; ISBN 9780465024407 e-book, contact publisher for price

The hallmark traits of clarity and thought-provoking content are as evident in *The Mathematics of Life* as in the author's other writings, but the added bonus of the interrelationship with biology makes this book all the more noteworthy. To defend his view that mathematics is serving as the sixth revolution in the life sciences, Stewart (emer., Warwick Univ., UK) consistently provides links to the previous five revolutions. For example, tree diagrams are related to biological classifications, and other mathematical notions are tied to the microscope, evolution, genetics, and the structure of DNA. Stewart also relates mathematics and modeling to a host of other considerations to expose this sixth revolution. He naturally includes the anticipated consideration of the Fibonacci sequence's connection to plant growth and the link between Platonic solids and the structure of viruses. In addition, he discusses networks as connected to slime molds, cyclical competition between species, knot theory as tied to skin and fur patterns, and the chaotic behavior of epidemics. Interested readers who are not mathematics devotees will still find the book highly informative and readable, given that the work avoids formulas while illustrating math's emerging role in the field of biology. **Summing Up:** Highly recommended. ★★★ General and academic readers, all levels.—*N. W. Schillow, Lehigh Carbon Community College*

49-1525 QA166 2010-24611 CIP
Terras, Audrey. **Zeta functions of graphs: a stroll through the garden.** Cambridge, 2011. 239p bibl index ISBN 0521113679, \$65.00; ISBN 9780521113670, \$65.00

When mathematicians chat informally, they spontaneously frame their ideas in punchy, entertaining ways. But when they put these same ideas in writing, certain issues of decorum usually intervene—just as when a musician (other than Chopin) writes down an improvisation, the personal touch disappears. Terras (Univ. of California, San Diego) writes mathematics the way Chopin writes mazurkas! She really tells a story and even seems to hear the questions her readers want to ask. When Riemann invented his zeta function to study the distribution of the prime numbers, he made a connection so profound and productive that now mathematicians (and lately physicists) seek out variations wherever possible. "Graph" here means some points connected by some edges, and primes find an analogue in the form of certain closed paths along those edges. Zeta functions, algebraic gadgets, synthesize the answers to all questions of the form, "How many prime paths have length L ?" but they actually turn out equal to the reciprocals of (finite) polynomials. Very mysterious classical objects of number theory (and many juicy unsolved problems) have analogues in this new context, which lends itself to experimental, computational approaches, so one expects ideas to travel in both directions. A very friendly book about cutting-edge mathematics! **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates and above.—*D. V. Feldman, University of New Hampshire*

Physics

49-1526 QC303 M A R C
Chen, Francis F. **An indispensable truth: how fusion power can save the planet.** Springer, 2011. 433p bibl index afp ISBN 1441978194, \$49.95; ISBN 9781441978196, \$49.95

The "indispensable truth" is that Chen (emer., UCLA) has written what may well be recognized as the definitive retrospective on the promise of endless supplies of cheap, clean nuclear energy from fusion, offering the prospect of realizing the promise at last. But is it true? Now in the autumn of a long, successful career that began when Lyman Spitzer's stellarator was all the rage, this erudite elder statesman of plasma physics says this time it is different, and this 400-page opus makes readers want to believe him. It is stylishly written, designed, and illustrated to appeal to general readers, yet it offers lessons Spitzer's peers can learn from. In effect, it is two books in one. First, it is the general story of climate change and the need for renewable, sustainable, alternative energy strategies in the face of the convenience of fossil fuels; second, it is the story of fusion energy—how it works, what it can deliver, and why it is important and perhaps the best and greenest way of meeting world energy needs. Consummate teacher/researcher that he is, Chen is in his comfort zone as he tells his story, and the indispensable truth is that it is just that—indispensable! **Summing Up:** Highly recommended. ★★★ All levels/libraries.—*L. W. Fine, Columbia University*

49-1527 QC174 2010-46924 CIP
Deep beauty: understanding the quantum world through mathematical innovation, ed. by Hans Halvorson. Cambridge, 2011. 471p bibl index ISBN 1107005701, \$99.00; ISBN 9781107005709, \$99.00

This collection of 12 papers by various authors looks at how novel ideas



in mathematics might give insight into quantum mechanics. The topics discussed are diverse and highly technical. The few articles that focus more on philosophy than mathematics still would require a strong mathematics background since the authors cover some high-level mathematics. The premise of the text is that by looking at how novel mathematics might apply to quantum physics, one might find insights into the fundamentals of physics. This is not to say that the authors expect to see new physics with these applications. Rather, these considerations might show new avenues for research or provide new ways of understanding the complexities of quantum theory. The papers are broken up into three main groupings focusing on category theory, operator algebra, and philosophical topics. Papers include "Topos Methods in the Foundations of Physics," "The Physical Interpretation of Daseinisation," "Einstein Meets von Neumann: Locality and Operational Independence in Algebraic Quantum Theory," and "The Strong Free Will Problem." **Summing Up:** Recommended.

★★ Graduate students and researchers in mathematics and physics.—*E. Kincanon, Gonzaga University*

49-1528 QC15 2010-53415 CIP
Kaiser, David. **How the hippies saved physics: science, counterculture, and the quantum revival.** W.W. Norton, 2011. 372p bibl index ISBN 0393076369, \$26.95; ISBN 9780393076363, \$26.95

In the mid-1970s, a group of maverick young physicists gathered at Berkeley to discuss their ideas that were, at the time, well outside the thinking of mainstream physics. The "Fundamental Fysics Group" was deeply involved in psychedelic drugs, Eastern mysticism, and all other aspects of the hippie culture that surrounded them. Despite all odds, the group came up with breakthrough ideas such as resurrecting the all-but-forgotten Bell's theorem to introduce the concept of quantum entanglement, and quantum encryption that is at the heart of all new information systems being developed today. With books such as F. Capra's *The Tao of Physics* (5th ed., 2010; 1st ed., CH, Jun'76) and G. Zukav's *The Dancing Wu Li Masters* (1979), these individuals reached audiences far outside the physics community. Today the group and its members are largely forgotten; however, as Kaiser (MIT) points out, they should be credited with changing the worldview of how physics, and indeed the nature of all physical reality, should be considered. This entertaining, worthwhile read is as much about the nature of society at the dawn of the New Age as it is about quantum physics. Chapter notes and an extensive bibliography will aid serious scholars of the era. **Summing Up:** Recommended. ★★ Academic and general readers, all levels.—*C. G. Wood, formerly, Eastern Maine Community College*

49-1529 QC754 2010-47290 CIP
Livingston, James D. **Rising force: the magic of magnetic levitation.** Harvard, 2011. 271p bibl index afp ISBN 0674055357, \$27.95; ISBN 9780674055353, \$27.95

Rising Force is an excellent introduction to the science of magnetic levitation. Physicist Livingston (*Driving Force*, CH, Nov'96, 34-1609) starts off by giving a brief history of how levitation has been used in literature and on stage. This is followed by a very good description of the forces in the universe and how magnetic forces fit into this scheme. The author then defines what he means by magnetic levitation (maglev) as a balance of forces. He clearly explains what stability is, how important it is to maglev, and how the six degrees of freedom (three linear and three rotational) must be controlled to achieve successful magnetic levitation. The rest of the book explores the various implementations of maglev; for example, in toys, which have piqued the interest of scientists, as well

as in frogs ("flying frogs") and sumo wrestlers, both of which have led to a better understanding of some fundamental science and material properties. The book includes a significant amount of discussion on maglev transportation and current development activities. Livingston refers to many Web sites but does not include their addresses. This is the only drawback to this useful work. **Summing Up:** Highly recommended. ★★ General readers and lower-division undergraduates.—*D. B. Mason, Albright College*

49-1530 QC174 MARC
Mohrhoff, Ulrich. **The world according to quantum mechanics: why the laws of physics make perfect sense after all.** World Scientific, 2011. 298p bibl index ISBN 9814293377, \$81.00; ISBN 9789814293372, \$81.00

This volume looks in many ways like a quantum mechanics textbook; it has lots of mathematics, a small sampling of problems (some with answers or hints), and many standard topics. However, the focus is on the subtitle, in particular an approach to the philosophically troubling distinction between the mathematically continuous evolution of a quantum system before a measurement and the discontinuous change that is a measurement (the so-called measurement problem). Mohrhoff (Sri Aurobindo International Centre of Education, India) varies the usual sequence of topics and within that sequence builds up a holistic interpretation of the process of measuring a quantum system. The text does not emphasize computational results, so it would not serve well as a stand-alone textbook for an introductory course, particularly because the treatment of the supporting mathematics is brief and dense. It does, however, provide a potentially useful alternative framework that can complement such a textbook and help either the novice or the experienced reader think more carefully about the relationship between quantum mechanics and the macroscopic world. **Summing Up:** Recommended. ★★ Upper-division undergraduates through researchers/faculty.—*D. B. Moss, formerly, Boston University*

49-1531 [Internet Resource]
Physics for the 21st Century
URL: <http://www.learner.org/resources/series213.html>

[Visited Aug'11] *Physics for the 21st Century* is an online course created by the Science Media Group at the Harvard-Smithsonian Center for Astrophysics and funded by Annenberg Media. The course is designed to help educators present contemporary perspectives of advanced physics subjects through a series of 11 half-hour video units. Each unit contains interviews with two expert physics researchers, and is accompanied by selective graphics, interactive labs, and a guide for facilitators/instructors. Course units cover a wide range of content in sections titled Subatomic Particles and Forces, New Physics at the Intermediate Scale (topics related to quantum physics), and Cosmology and Beyond. The videos and accompanying course materials are high quality, engaging, and informative, and help to introduce important areas of physics advances into the classroom.

The site also features a brief glossary of terms, organized alphabetically and by corresponding instructional unit. Site content in a variety of formats is distributed free through the Web. Users can purchase the entire series on DVD and a print copy of the facilitator's guide; information on permissions and licensing information is posted on the site. The video sets and related activities are excellent resources for rainy day lectures and will surely engage students interested in exploring the most important unanswered questions being investigated today in various areas of



contemporary physics. **Summing Up:** Recommended. ★★ Lower- and upper-division undergraduates, advanced high school students and their teachers, and general readers.—*I. D. Gordon, Brock University*

Sports & Recreation

49-1532 GV863 2010-51941 CIP
Alexander, Charles C. **Turbulent seasons: baseball in 1890-1891.** Southern Methodist, 2011. 232p bibl index afp ISBN 9780870745720, \$24.95

For almost 30 years Alexander (emer., history, Ohio Univ.) has been writing well-researched, accessible books on baseball; his works include *Breaking the Slump: Baseball in the Depression Era* (CH, Dec'02, 40-2230) and such biographies as *Spoke: A Biography of Tris Speaker* (CH, Apr'08, 45-4447), *Rogers Hornsby* (CH, Mar'96, 33-3976), *John McGraw* (1988), and *Ty Cobb* (CH, Jul'84). All this is to say that he is perfectly suited to take on two of the most frustrating, confusing, and exciting years in baseball history and make sense of what happened and why it is important. In this admirable book, he discusses the revolt of the players, the ill-fated Players' League, and the birth of the professional baseball structure that still exists today. It is a story of conflict between labor and management, team owners and the press, and fans and players. Alexander covers each aspect, but in the process he never loses sight of the game that was played on the field and the athletes who played it. Like much of the rest of America during this period, baseball experienced "turbulent seasons," and everything about the game seemed in flux. This book explores the games that were played inside and outside the lines. **Summing Up:** Recommended. ★★ Lower- and upper-division undergraduates; general readers.—*R. W. Roberts, Purdue University*

49-1533 GV711 2010-2569 CIP
The Ethics of sports coaching, ed. by Alun R. Hardman and Carwyn Jones. Routledge, 2011. 222p bibl index ISBN 9780415557740, \$145.00; ISBN 9780415557757 pbk, \$49.95; ISBN 9780203868447 e-book, \$47.95

This addition to the "Ethics and Sport" series examines the moral complexities of contemporary sports coaching. The contributors are established international scholars with experience in coaching and sport at exceptionally high levels of competence. Hardman and Jones (both, Univ. of Wales Institute, Cardiff) provide an insightful introduction and explain the overall book structure and purpose, arguing that sports coaching is, indeed, a moral endeavor. Organized in four sections, the book begins with essays dedicated to exploring the nature of coaching itself before moving, in part 2, to an examination of the character of the coach. For example, in their essay, "Becoming a Good Coach: Coaching and Phronesis, Øyvind Standal and Liv Hemmestad effectively illustrate what it means to be a "good coach." The final sections address specific coaching populations (i.e., youth sports, Paralympic sports) and specific coaching contexts. This is an illuminating collection. **Summing Up:** Recommended. ★★ Upper-division undergraduates through faculty and professionals.—*D. R. Hochstetler, Pennsylvania State University, Lehigh Valley*

49-1534 GV706 2010-13224 CIP
Sport and migration: borders, boundaries and crossings, ed. by Joseph Maguire and Mark Falcous. Routledge, 2011. 315p bibl index

ISBN 9780415498333, \$155.00; ISBN 9780415498340 pbk, \$49.95; ISBN 9780203877319 e-book, \$49.95

The sports world has finally caught up to the real world in understanding the total essence of "globalization" as it directly impacts all manner of sports, from individual sports like road running and track and field to the granddaddy of them all, soccer. While sport scholars have begun to pay attention to the globalizing nature of sports, most of this research has been about the expansion of competitions, as these are no longer confined to the large nation-states. One finds competitive sporting activities even in the United Arab Emirates, Cuba, and China. However, at all levels of sport, starting in the US with intercollegiate sports up through the professional leagues, the migration of athletic talent has grown exponentially in the last two decades. Editor Maguire and his colleagues (25 authors of 18 chapters) have been telling society this for years, but they say it best here. The global international migration of athletic talent is the new "sports world." **Summing Up:** Highly recommended. ★★ Upper-division undergraduates, graduate students, professionals.—*E. Smith, Wake Forest University*

49-1535 GV880 2011-2716 CIP
Surdam, David George. **Wins, losses, and empty seats: how baseball outlasted the Great Depression.** Nebraska, 2011. 417p bibl index afp ISBN 9780803234826, \$45.00

In a careful, comprehensive, methodical manner that would make Hercule Poirot or Sherlock Holmes proud, Surdam (economics, Univ. of Northern Iowa) investigates how the national pastime fared in the Depression decade of the 1930s and how Major League Baseball, then a 16-team league, adjusted to dire circumstances in the overall economy. The book's major sections examine the level and nature of the industry's profits in terms of attendance and revenues versus players' salaries and other expenses; the on-field realities of competitive balance and player movement among teams; and innovations and tinkering to cope with the downturn in employment and income, such as revenue-sharing schemes, the manipulation of schedules to get more attractive matchups at key junctures, night games, ladies' days, and radio broadcasts. A 50-page appendix of data tables, 50 pages of annotated notes and references, and a bibliography complement the narrative. These are the major "wins." The prose style is the "loss," detracting from a solid piece of scholarship and reducing the book's likely audience to scholars and those who adore this narrow slice of American history. **Summing Up:** Recommended. ★★ Upper-division undergraduates through faculty.—*A. R. Sanderson, University of Chicago*

49-1536 GV865 2010-28479 CIP
Taylor, Frederick E. **The runmakers: a new way to rate baseball players.** Johns Hopkins, 2011. 252p index afp ISBN 9781421400105, \$24.95

Most baseball statistical analysts believe that "traditional" measures of player performance—batting average, runs batted in, and so on—are lacking. Sabermetricians—i.e., those seeking objective truth and knowledge about baseball—have searched for a model that gives proper credit for player contributions to run scoring. Consider this scenario: batter number one reaches first on a walk, batter number two hits a double (putting runners on second and third), then batter number three grounds into a fielder's choice and the run scores. In traditional stats, the first batter gets R, the third gets an RBI, and the second gets nothing. Nontraditional models attempt to apportion credit to all three players. In Taylor's model, the key measure is "bases per plate appearance" (BPPA).



He gives an estimate of the number of “bases earned” for teams and batters, giving one-for-one for events such as singles, doubles, triples, and home runs, and additional points for advancing runners already on base. With reference to the last of these, Taylor makes different assumptions for different eras of baseball history and different batting-order slots. This is a compelling model. **Summing Up:** Recommended. ★★ Lower- and upper-division undergraduates; researchers; professionals; general readers.—*J. T. Saccoman, Seton Hall University*

49-1537 GV857 2011-1488 CIP
Thorpe, Holly. **Snowboarding bodies in theory and practice.** Palgrave Macmillan, 2011. 313p bibl index ISBN 9780230579446, \$90.00

A specialist in the sociology of sport, Thorpe (sport and leisure studies, Univ. of Waikato, New Zealand) devoted seven years to an extensive investigation of the worldwide occurrence and prevalence of snowboarding and the culture that has developed from it. Here she presents the results of that study. Looking at the history of snowboarding and its current context, she considers snowboarding as a sport and as it intersects with lifestyle, gender relations, travel, industry, and media. Each chapter offers a different theoretical viewpoint—for example, cultural studies, feminism, and Pierre Bourdieu’s theory of embodiment. Blending theory and research, this book understands snowboarding as both sport and an artifact of physical culture. The volume will serve those interested in cultural and feminist studies as well as sports. **Summing Up:** Recommended. ★★ Upper-division undergraduates, graduate students, general readers.—*M. E. Beagle, Berea College*

49-1538 GV1132 2010-49889 CIP
Waltzer, Jim. **The battle of the century: Dempsey, Carpentier, and the birth of modern promotion.** Praeger, 2011. 238p bibl index afp ISBN 9780313382444, \$44.95; ISBN 9780313382451 e-book, contact publisher for price

“I don’t know nothing that you don’t know, but if you want to hear it again, all right.” So began Ring Lardner’s short story “The Battle of the Century,” a tale that skirts so close to the truth that it almost should be classified as nonfiction. The 1921 heavyweight title bout between champion Jack Dempsey and French challenger Georges Carpentier is not remembered as a great fight. Indeed, it was a classic mismatch between a great title holder and a run-of-the-mill challenger, and it did not last four complete rounds. The memorable aspect of the contest was George “Tex” Rickard’s promotional accomplishments. Though the bout was miles away from actually being “the fight of the century,” Rickard made the public believe that it was that important, and in so doing forged modern promotional techniques. Waltzer traces how Rickard worked his magic in an age when ballyhoo was becoming the order of the day. Although the author devotes most of the book to the background of Rickard and the fighters, he closely follows the evolution of the fight and shows how it fit into the culture of the 1920s. The story is not new, but it never seems to get old. **Summing Up:** Recommended. ★★ Lower- and upper-division undergraduates; general readers.—*R. W. Roberts, Purdue University*

SOCIAL & BEHAVIORAL SCIENCES

49-1539 LD7501 2010-21520 CIP
Khan, Shamus Rahman. **Privilege: the making of an adolescent elite at St. Paul’s School.** Princeton, 2011. 232p bibl index afp ISBN 9780691145280, \$29.95

Returning to his alma mater as faculty member and ethnographer, Khan (sociology, Columbia) offers an incisive study of the formation of a new, meritocratic elite. Despite the school’s commitment to shaping a more open society with respect to race and gender, the author finds a disturbing unwillingness (within the school and among US elites more generally) to confront issues of class. Annual per-pupil expenditures that exceed \$80,000—such as at this school or any comparable highly endowed, highly selective institution—arguably help to preserve social hierarchies while making them less visible. Refreshingly free of jargon, the book moves easily from sociological theory to memorable vignettes of individual actors in a particular historical context. Khan’s portrayal of the processes whereby students learn to physically incarnate a sense of cosmopolitan ease is especially insightful. His interactions with students in the classroom and characterization of academic learning overall are likewise provocative. The author may overemphasize the uniqueness of St. Paul’s, or at least he leaves relatively unexplored the degree to which his findings are more broadly suggestive. Of utility and wide appeal to a range of academics, Khan’s study is consistently engaging and of potentially enduring value. **Summing Up:** Highly recommended. ★★ All levels/libraries.—*A. D. Mullen, Westmont College*

49-1540 JC330 2010-278547 MARC
Lachmann, Richard. **States and power.** Polity, 2010. 234p bibl index ISBN 9780745645384, \$69.95; ISBN 9780745645391 pbk, \$22.95

Sociologist Lachmann (SUNY, Albany), focusing on the rise of the West and its worldwide impact, touches upon a wide range of issues, such as the rise of nation-states, relationships between the state and the development of capitalism, the emergence and development of citizenship, democracy and welfare states, mass movements and state breakdown, and the possible future of this world. Initially, this book appeared to be an undergraduate textbook because its language is very accessible and requires little background to understand, but it turned out to be much more than that. Though the book’s theoretical framework is based on the author’s well-known elite conflict theory on early modern European historical development, it contains tons of new insights reflecting Lachmann’s many years of teaching, research, and creative thinking. Some arguments can be contested, but as a whole, the book is a mini-classic. It will remain indispensable for those who are interested in the history and future of the nation-state and the international system. **Summing Up:** Essential. ★★ All levels/libraries.—*D. Zhao, University of Chicago*

49-1541 HV741 2010-42774 CIP
Pearson, Susan J. **The rights of the defenseless: protecting animals and children in Gilded Age America.** Chicago, 2011. 260p index ISBN 9780226652016, \$45.00

Historian Pearson (Northwestern Univ.) uses the perceived helplessness of animals and children to explain the intellectual and cultural motivations of protectionism during the Gilded Age. His insightful examination of private charities being endowed with public power brings a new dimension to the relationship between agencies