BOOK REVIEWS

Vic Baker, BOOK REVIEW EDITOR

J. B. AUDEN: A CENTENARY TRIBUTE. *B.P. Radhakrishna, ed., 2003. Geological Society of India Memoir 56 (Geological Society of India, Post Box 1922, Gavipuram, Bangalore, 560019, India), 332 p. Soft Cover, $45. (Distribution in North America: GeoPlanet Resources, P.O. Box 526239, Salt Lake City, Utah 84152-6230, USA).*

Several years ago, when I was writing a biography of the Swiss/Himalayan geologist, Augusto Gansser, I asked him who his hero was among the geologists who had worked in the Himalayas. Gansser (himself a giant of Himalayan geology) simply said, "John Auden." Later, B. P. Radhakrishan, President of the Geological Society of India, kindly wrote me that the Society intended to publish a volume as a tribute to John Auden. It is a delight to see that this volume has been published. The volume includes a detailed biography of John Auden by Radhakrishna, his family life by Anita Money (Auden's daughter), and a collection of eight geologic papers by Auden published from 1933 through 1981. These classic paper include: "On the Age of Certain Himalayan Granites" (1933); "Vindhyan Sedimentation in the Son Valley, Mirzapur District" (1933); "The Geology of the Krol Belt" (1934); "Traverses in the Himalaya" (1935); "The Structure of the Himalaya in Garhwal" (1937); "The Bearing of Geology on Multipurpose Projects" (1951); "Geological Report on the Seismicity of Parts of Western India, Including Maharashtra" (1969); and "India's Former Crustal Neighbours" (1981).

The history of geology in British India is a fascinating and significant part of the history of world geology, and deserves more research. The Geological Survey of India, established in Calcutta in 1851, is one of the oldest geologic surveys, and geologists working for the this institution during the second half of the nineteenth and the first half of the twentieth centuries not only mapped a great part of Asia, but also contributed to the development of the science of geology, including the concepts of Gondwanaland, Tethys, isostasy, inverted metamorphism, and continental collision.

John Bicknell Auden was born at York, U.K., in 1903. He went to Cambridge to study geology, graduated in 1926, and straightway joined the Geological Survey of India (GSI) at Calcutta. The first two years, Auden worked on the geology of coal fields near Calcutta. However, it was during 1928–39 that his field work in the Himalayan regions of the Punjab, Garhwal, Kumaon, Sikkim, and Nepal brought him prestige as an original contributor to our understanding of the tectonic evolution of the highest and youngest mountain range on Earth. His papers were published in the *Memoirs* (if they were full articles) and in the *Records* (if they were brief reports) of the GSI. His maps, cross-sections, descriptions, and interpretations have retained, to this day, a modern geologic tone partly because his papers helped to shape the modern understanding of the Himalayas.

For example, his 1934 paper on the "Geology of the Krol Belt" remains a cornerstone of the stratigraphy and structure of this part of the Lesser Himalaya in north India, and subsequent studies by numerous other geologists have mainly refined Auden's descriptions. We owe the first designation of an orogen-scale thrust fault, which has brought the Higher Himalayan high grade metamorphic rocks atop the Lesser Himalayan low grade sediments, to Auden's 1935 paper

("Traverses in the Himalaya"). This thrust fault was called the Main Central Thrust by Gansser in 1939. The first sentence in his 1935 paper—"It is realized that there is often danger in early generalization from incomplete observations such as are made on traverses"—is typical of Auden as a careful observer and cautious interpreter. Twain's famous quote that in science "one gets such wholesome return of conjectures out of such trifling investment of fact" would hardly apply to Auden.

World War II (1939–45) brought an end to Auden's Himalayan work. During the war he was a pilot and a mineral surveyor in India. In 1940 Auden married to Shiela Bonnerjee, a granddaughter of W. C. Bonnerjee, the founding president of the Indian National Congress, which led India to its freedom from British rule. After his two daughters (Anita in 1941 and Rita in 1942) were born, Auden had to retain two households, one at Calcutta and the other in London for the sake of the girls' education. In 1947, India got its independence and Auden got his doctorate degree from Cambridge. In 1949, Auden acted as the last British Director of the GSI, for only two months (M. S. Krishnan became the first Indian Director of the Survey). In 1953, Auden took premature retirement from the GSI and was the last British geologist to leave that wonderful institution. For the next two decades, Auden worked as a geologist for organizations such the United Nations Food and Agriculture Organization and visited several other Asian countries, including Korea, Sri Lanka, Nepal, Afghanistan, Iran, and Turkey. For these projects, Auden applied his geologic skills to construction engineering, and his 1951 speech ("The Bearing of Geology on Multipurpose Projects") at the Indian Science Congress in Bangalore epitomizes this phase of his career.

Auden's last publication ("India's former crustal neighbours") was actually a lecture he delivered in 1981, when he was awarded the D. N. Wadia Medal of the Indian National Science Academy. Wadia, an eminent Indian geologist, was Auden's senior colleague at the GSI, and they had co-authored several papers. In this lecture, Auden remarked that plate tectonic reconstructions of India stop in the Cretaceous, but we know a lot more about India. On the basis of correlations from Tethyan strata, Auden placed Iran and Arabia as India's northwestern neighbours during the Early Paleozoic.

Auden's bibliography (pages 45–46) lists 33 articles, reports and book reviews he published on the Himalayas and India. By today's standards of "publish or perish," this number of publications seems to be modest. However, the originality and impact of his scientific work was indeed admirable. Auden was one of the greatest geologists who have set their eyes on the Himalayas. Auden died in 1991 in London, and to honor his wishes, his ashes were immersed in the Ganges waters which originate in Garhwal, a region of the High Himalaya he had mapped in his youth.

The year 2003 was the centenary anniversary of Auden's birth, and the Geological Society of India should be commended on bringing out this fascinating *Memoir* to celebrate the great life and works of a humble geologist. (There are only two photographs of Auden in the volume. His photos were "for passport purposes," as Auden once wrote to Radhakrishna in reply to request for photos).

Rasoul Sorkhabi, Energy & Geoscience Institute, University of Utah, Salt Lake City, UT 84108-3537; rsorkhabi@egi.utah.edu

THE HEDGEHOG, THE FOX, AND THE MAGISTER'S POX: MENDING THE GAP BETWEEN SCIENCE AND THE HUMANITIES. *Stephen Jay Gould, 2003. Harmony Books, New York, 274 p. Hardcover, $25.95, Softcover $15.00.*

The late Stephen Jay Gould's last book explores the relationship between science and the humanities. I remember first encountering this issue in a 1963 freshman English course, where the class of nascent engineers and scientists was assigned C. P. Snow's *The Two Cultures.* Though Snow's original British context and political dichotomy are no longer relevant (some argue they never were), the notion of conflict remains very much alive in the so-called "Science Wars." Over the past decade or so, this latter set of literary exchanges has engaged the passions of zealots on either side of the presumed humanities versus science divide. Thus, we have seen the writings of extreme relativists who selectively quote Thomas Kuhn to claim that there is no scientific access to reality or truth. By this argument, science ultimately is just another form of persuasive ideology. Such views were then countered by science's self-appointed defenders, often to promote their own ideology of philosophical scientism. This "warfare" can be particularly worrisome for historians of science, many of whom view their craft alternatively through the lenses of both science and the humanities.

Gould's book is partly an apology for not having engaged sooner in the "Science Wars." He is especially concerned to counter the views of his longtime antagonist, E. O. Wilson, whose 1998 best-selling book *Consilience* described a kind of eventual appropriation of all humanistic themes, including ethics and religion, through the continuing advance of science. In the last part of his book Gould develops the sound argument that Wilson selected the title for his book (and the banner for his program) without paying much attention to what the word's inventor had in mind. That inventor was William Whewell (1794–1866), who Gould describes as, ". . . England's greatest mid-nineteenth century historian and philosopher of science."

Consilience was actually conceived as part of the methodology of creative science, one with considerable relevance to geology. It was never envisioned as a harbinger for Wilson's reductionist program of eventually subsuming all humanities under science. Instead, the word is bound up with the arcane history of the nature of induction in the sciences, a legacy far beyond the scope of this brief review. Suffice it to say that Wilson appropriated Whewell's very sensible notion of consilience as a means of validating theories in a complex science like geology, and applied it to the unification of all disciplines, including the humanities, ". . . into a single chain of reductionistic explanation rooted in the empirical procedures of science." In a manner somewhat reminiscent of his arguments for "non-overlapping magisterial" (NOMA) between science and religion, Gould sides with arguments originally put forward by Whewell that the sciences and humanities have distinct but comparable worthiness, which (unlike religion and science) afford many productive areas of overlap.

Though I very much approve of Gould's conclusion, and of his scholarship in achieving it, I must admit to considerable frustration with this book. Of course, it is some defense that the author died before he could even proof the manuscript. Clearly there was not time to fully check sources and do many of the other things that should bring a project to full completion. However, this is also a book that reveals how idiosyncratic Gould became as a scholar. In this regard, it is fascinating to compare some of the tortured sentences in *Hedgehog, The Fox, and the Magister's Pox* to the crisp writing in *Ever Since Darwin.* The first half of *Hedge-*

hog includes considerable discussion of arcane details from ancient books in the author's magnificent personal collections. Many readers will probably fail to be impressed by how the author develops the metaphor in the title. The numerous asides to seemingly trivial anecdotes are vintage Gould, but they seem to lack the coherence and spark of his earlier writings. Nevertheless, there is still much to be gained by close attention even to these, perhaps less for understanding the issues under discussion than for what they reveal about one of the greatest science writers of our time.

Victor R. Baker, Department of Hydrology and Water Resources, The University of Arizona, Tucson, AZ 85721-0011; baker@hwr.arizona.edu

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THE MAN WHO FOUND TIME: JAMES HUTTON AND THE DISCOVERY OF THE EARTH'S ANTIQUITY. *Jack Repcheck, 2003. Perseus, Cambridge, Mass., 247p. Hard Cover, $25.*

". . . almost singlehandedly, and quite brilliantly, he created the science of geology and transformed our understanding of the Earth." So writes Bill Bryson of the Edinburgh physician James Hutton in his best-selling, engagingly titled 2003 book *A Short History of Nearly Everything.* Bryson writes with excitement and humor about scientific facts that continue to bore and alienate the textbook readers in numerous elementary and high school science classes. Reviews of Bryson's book in professional science journals complain that he places too much emphasis on the Earth and planetary sciences, while not devoting enough attention to "real science," specifically physics. Bryson's book certainly does seem out of place in airport book stores and the surburban megastores, where popular science book shelves overflow with volumes on the wonders of string theory, quantum mechanics, fractal complexity, and black holes. Nevertheless, Bryson may be on to something. The general public of today, much as it did in the 19th century, seems to have a genuine interest in the science of geology, despite the protestations of those who want to impose superior thoughts upon them.

To criticize Bryson for his simplistic characterization of Hutton and of geology would be to miss a larger point. Bryson is not engaged in historical scholarship. He is trying to engage a curious public, which has been almost totally abused by the science education elite, to reconnect to the curiosity, wonder, and creativity that lies at the core of science. So much the better if Bryson's cartoon-like treatment of Hutton inspires some to find out a bit more about this phenomenally interesting scientist and the science for which he surely ranks as an exceptionally important, early luminary. The popular book under review may provide a partial remedy for Bryson's all-too-brief glorification of Hutton and his unintentional slighting to some of Hutton's predecessors in scientific inquiry into Earth and its history.

While Hutton has certainly not yet achieved iconic status as one of the "big names" in science, this will not persist if Jack Repcheck has his way. The stated aim of his book *The Man Who Found Time* is to convince its readers that there were four, ". . . key figures in the freeing of science from the straightjacket of religious orthodoxy." The four are Copernicus, Galileo, Darwin, and Hutton. I am sure that first two are obvious to the "real scientists" who object to Bryson's overemphasis on geology as a key component of "nearly everything" scientific. Those folks probably even grudgingly accept Darwin, though I doubt they would place Hutton anywhere except well beneath the feet of these luminaries.

As a geologist, I confess to considerable sympathy for Repcheck's purpose

of educating the general public about Hutton. Nevertheless, the issue of religion versus science, as so often presented in popular science works, is here again overplayed for dramatic effect. Sure there were religious fundamentalists in the 18th century who insisted on biblical literalism, conveying so-called "science" by their unthinking reading of a bunch of texts selectively taken from a much larger body of scripture by a Roman convention in Nicea, translated multiple times by people with various political agendas, and then used by power-hungry demagogues to achieve their selfish ends. We still have such folks today, some even in high political office. However, those in possession of disciplined thought, both in religion and science, have long since moved beyond such authoritarian ignorance.

The Man Who Found Time is a pleasant enough read. Unencumbered by footnotes, the story moves very quickly, even when the author adds context through long asides on the history of theological chronology, the Jacobite uprising, and the Scottish Enlightenment. Of course, all this has been written up before, though not in such a complete popular manner. Yes, the book repeats various historical mythologies, but perhaps we should best judge it as a representative of what Friedrich Nietzsche termed the "History of Heroes." Such histories seem to be a phenomenon of our times, deserving of serious consideration in that context. In this regard, I find it odd to find no mention of the connection to Gaia. James Lovelock credits Hutton with an early recognition of this very timely notion at the interface of science and popular culture. Nevertheless, I am glad that good writers like Bryson and Repcheck are at least paying attention to geology. Hopefully, those in the know can help them improve upon the scholarly basis for their popularizations.

Victor R. Baker, Department of Hydrology and Water Resources, The University of Arizona, Tucson, AZ 85721-0011; baker@hwr.arizona.edu

INTERESTING PUBLICATIONS

Gerald M. Friedman, CONTRIBUTING EDITOR

Since the start of this journal, Founding Editor Gerald M. Friedman has prepared this column. Contributors wishing to list recent books and papers of interest to our membership are requested to send them to Professor Gerald M. Friedman, Northeastern Science Foundation, Rensselaer Center of Applied Geology, P.O. Box 746, Troy, NY 12181-0746 U.S.A.; FAX: 518-273-3249; *gmfriedman@juno.com*

ABRAHAM, SPENCER, 2003, Creative approaches to the challenges of global climate change: *World Energy,* v. 6, no. 4, p. 32.

ABRIL, J.M., 2003, A new theoretical treatment of compaction and the advective-diffusive processees in sediments: a reviewed basis for radiometric dating models: *Journal of Paleolimnology,* v. 30, p. 363–370.

ABRIL, J.M., 2003, Difficulties in interpreting fast mixing in the radiometric dating of sediments using ^{210}Pb and ^{137}Cs: *Journal of Paleolimnology,* v. 30, p. 407–414.

ADAMSON, GLENN, 2003, Industrial strength design: how Brooks Stevens shaped your world. The MIT Press and Milwaukee Art Museum, 219 p.

ADLER, R., 2002, Science firsts: from the creation of science to the science of creation. Wiley, Hoboken, NJ, 232 p.

ALDENDERFER, M.S., 2003, Moving up in the world. Archeologists seek to understand how and when people came to occupy the Andean and Tibetan plateaus: *American Scientist,* v. 91, p. 542–549.

ALDER, K., 2002, The measure of all things: the seven year odyssey and hidden error that transformed the world. Free Press, New York, 422 p.

ALLEY, R.B., 2000, The two-mile time machine. Ice cores, abrupt climate change, and our future. Princeton University Press, Princeton, NJ, 240 p.

ALVAREX, WALTER, 1997, T.rex and the crater of doom. Princeton University Press, Princeton, NJ, 236 p.

ALVERSON, K.D., BRADLEY, R.S., and PEDERSEN, T.F., 2003, Paleoclimate, global change, and the future. Springer Verlag, New York, 235 p.

AMEEN, M.S., ed., 2003, Fracture and in-situ stress characterization of hydrocarbon reservoirs. Geological Society Publishing House, London, Special Publication 209, 224 p.

AMUNDSON, RONALD and YAALON, D.H., 1995, E.W. Hilgard and John Wesley Powell: Efforts to join an agricultural and geological survey: *Soil Science Society of America Journal,* v. 59, p. 4–13.

ANONYMOUS, 2001, Birth and development of clay research: *ECGA Newsletter,* v. 4, p. 6–41.

ANONYMOUS, 2002, 2003 Graduate programs in physics, astronomy, and related fields. AIP, Melville, NY, 888 p.

ANONYMOUS, 2003, A Dilemma: Adapt to nature's constraints of subdue the earth?: *EOS,* v. 84, no. 40, p. 411.

ANONYMOUS, 2003, From the archives: William Dickson Lang (1878–1966): *Geoscientist,* p. 16.

ANONYMOUS, 2003, Michael Robert House (1930–2002) and the start of Devonian cyclostratigraphy: *Proceedings of the Geologists' Association,* v. 114, p. 271–274.

ANONYMOUS, 2003, When do planets form? Inquiring astronomers want to know: *Science,* v. 300, p. 1498.

ANONYMOUS, 2004, Earth & environmental speller CD-rom. American Geological Institute Publications.

ANONYMOUS, 2004, From the archives: John Wesley Judd (1840–1916): *Geoscientist,* v. 14, no. 2, p. 11.

ANONYMOUS, 2004, The climate leadership vacuum: SA Perspectives: *Scientific American,* March, p. 6.

ARTHUR, T.J., MACGREGOR, D.S., and CAMERON, N.R., eds., 2003, Petroleum geology of Africa: new themes and developing technologies. Geological Society Publishing House, London, Special Publication 207, 296 p.

ARTIOLA, J.F., PEPPER, I.L., and BRUSSEAU, M.L., eds., 2004, Environmental monitoring and characterization. Elsevier, Amsterdam, 300 p.

BAILEY, R.A., CLARK, H.M., FERRIS, J.P., KRAUSE, SONJA, and STRONG, R.L., 2002, Chemistry of the environment. 2nd edition. Elsevier, Amsterdam, 835 p.

BALLARD, R.D., 2000, The eternal darkness. A personal history of deep-sea exploration. Princeton University Press, Princeton, NJ, 304 p.

BARBARIN, BERNARD, and STEPHENS, W.E., eds., 2001, The fourth Hutton symposium on the origin of granites and related rocks. Royal Society of Edinburgh. GSA Publications, Boulder, CO, 319 p.

BARKER, C.A. and KOPP, O.C., 2004, Luminescence microscopy and spectroscopy: qualitative and quantitative applications. Short course notes on CD-rom. SEPM Publications, Tulsa, OK.

BASSETT, M.G., and YOCHELSON, E.L., 2004, Charles D. Walcott in England and Wales (1888): a crucial visit in the resolution of Taconic-Cambrian-Ordovician questions: *Proceedings of the Geologists' Association,* v. 115, part 1, p. 63–76.

BASSETT, R.K., 2002, To the digital age: research labs, start-up companies, and the rise of MOS technology. Johns Hopkins University Press, Baltimore, MD, 421 p.

BATES, R.L., ADKINS-HELJESON, M.D., and BUCHANAN, R.C., eds., 2004, Geowriting. 5th edition. American Geological Institute Publications, 100 p.

BELKORA, L., 2003, Minding the heavens: the story of our discovery of the milky way. IOP, Philadelphia, 406 p.

BELL, CONNIE, 2002, Oil Springs: birthplace of the oil industry: *Ontario Oil & Gas,* v. 1, p. 15–16.

BERTLMANN, R.A. and ZEILINGER, A., 2002, Quantum (un)speakables: from bell to quantum information. Springer-Verlag, New York, 483 p.

BEVAN, ALEX and DE LAETER, JOHN, 2002, Meteorites—A journal through space and time. Smithsonian Institution Press in association with the University of New South Wales, 215 p.

BLUNDELL, D.J., NEUBAUER, F., and VON QUADT, A., 2002, The timing and location of major ore deposits in an evolving orogen. Geological Society Publishing House, London, Special Publication 204, 368 p.

BOWDEN, A.J. and SIMKISS, WENDY, 2003, Henry Hugh Higgins and Frederick Price Marrat: the reluctant palaeobotanists and the Ravenhead collection: *Proceedings of the Geologists' Association,* v. 114, p. 327–338.

BRACEWELL, R.A., 2002, The discovery of strong extragalactic polarization using the Parkes radio telescope: *Journal of Astronomical History and Heritage,* v. 5, no. 2, p. 107–114.

BRAUN, ROBERT, 2001, Galaxy clusters reveal their secrets: *Science,* v. 293, p. 1781–1782.

BROWN, P.E., 2004, Essay Review: Earth, Water, Ice, and Fire: Two hundred years of geological research in the English lake district by D. Oldroyd: *Proceedings of the Geologists' Association,* v. 115, part 1, p. 85–90.

BRYSON, BILL, 2004, A short history of nearly everything. Broadway Books. New York, 559 p.

BUCHWALD, J.Z. and COHEN, I.B., eds., 2000, Isaac Newton's natural philosophy. Dibner Institute Studies in the History of Science and Technology, 400 p.

BURBIDGE, G., SANDAGE, A., and SHU, F.H., eds., 2002, Annual review of astronomy and astrophysics. Annual Reviews, Palo Alto, California, 723 p.

BUREK, C.V., 2001, Topics: The first lady geologist, or collector par excellence? (Etheldred Benett): *Geology Today,* v. 17, no. 5, p. 192–194.

BURFIELD, DIANA, 2002, Edward Cresy: Polymath president of the Geologists' Association, 1864–5: *GA Magazine of the Geologists' Association,* v. 1, no. 3, p. 22–23.

BURROUGHS, W.J., 2001, Climate change. A multidisciplinary approach. Cambridge University Press, Cambridge/New York, 298 p.

BYRNE, T.B. and LIU, C.-S., eds., 2002, Geology and geophysics of an arc-continent collision, Taiwan. GSA Publications, Boulder, CO, 211 p.

CASSIDY, W.A., 2003, Meteorites, ice, and antarctica. A personal account. Cambridge University Press, New York, 363 p.

CATER, JOHN, 2002, The key to the future: the study of earth history. Taylor & Francis, 134 p.

CECIL, C.B., EDGAR, N.T., DULONG, F.T., and NEUZIL, S.G., eds., 2004, Climate controls on stratigraphy. SEPM Special Publication no. 75. SEPM Publications, Tulsa, OK.

CHAUVEL, JEAN-JACQUES and PLAINE, JEAN, 2002, Géologie et archéologie bretonne. Le prés-

ident de Robien (1698–1756), un précurseur au temps des Lumières. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 7 (séance du 11 décembre 2002), p. 119–132.

CHEAL, A.J., COLEMAN, G., DELEAN, S., MILLER, I., OSBORNE, K., and SWEATMAN, H., 2002, Responses of coral and fish assemblages to a severe but short-lived tropical cyclone on the Great Barrier Reef, Australia: *Coral Reefs,* v. 21, no. 2, p. 131–146.

CLINE, J.M., 2004, The origin of matter: The question of how matter triumphed over antimatter in the formation of the universe still awaits a satisfactory answer: *American Scientist,* v. 92, p. 148.

COHEN, A.S., 2003, Paleolimnology: the history and evolution of Lake Systems. Oxford University Press, New York, 528 p.

COLLETTA, BERNARD, ed., 2003, Insights into petroleum geochemistry. Editions Technip, 164 p.

COMBAZ, ANDRÉ, 2002, Les premières découvertes de pétrole au Sahara dans les années 1950: le témoignage d'un acteur. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 6 (séance du 19 juin 2002), p. 95–118.

CONTOPOULOS, G., 2002, Order and chaos in dynamical astronomy. Astronomy and Astrophysics Library. Springer Verlag, New York, 624 p.

COPE, J.C.W., INGHAM, J.K., and RAWSON, P.F., eds., 1999, Atlas of palaeogeography and lithofacies (A4 edition). Geological Society Publishing House, London, Memoir 13, 164 p.

CORTI, GIACOMO, BONINI, MARCO, CONTICELLI, SANDRO, INNOCENTI, FABRIZIO, MANETTI, PIERO, and SOKOUTIS, DIMITRIOS, 2003, Analogue modeling of continental extension. A review focused on the relations between the patterns of deformation and the presence of magma: *Earth-Science Reviews,* v. 63, p. 169–247.

CRACKNELL, A.P., ed., 2001, Remote sensing and climate change? The role of Earth observation. Springer-Praxis Publishing Ltd., New York, 301 p.

CRAMER, DEBORAH, 2001, Great waters: an atlantic passage. W.W. Norton.

CREVELLO, PAUL, WILSON, JAMES, SARG, FREDERICK, and READ, FRED, 2004, Controls on carbonate platforms and basin development. CD-rom. SEPM Special Publications, Tulsa, OK.

CROWELL, J.C., 2000, Pre-Mesozoic ice ages: their bearing on understanding the climate system. GSA Publications, Boulder, CO, 112 p.

CUTLER, ALAN, 2003, The seashell on the mountaintop. A story of science, sainthood, and the humble genius who discovered a new history of the earth. Dutton (Penguin), New York, 240 p.

CUTTER, S.L., RICHARDSON, D.B., and WILBANKS, T.J., eds., 2003, The geographical dimension of terrorism. Routledge, New York, 274 p.

DA COSTA, G.S. and JERJEN, H., eds., 2002, The dynamics, structure, and history of galaxies. Astronomical Society of the Pacific Conference Series 273. Proc. Mtg., Queensland, Australia, July–Aug. 2001. Astronomical Society of the Pacific, San Francisco, 380 p.

DAMASIO, ANTONIO, 2003, Looking for Spinoza: joy, sorrow, and the feeling brain. Harcourt, New York.

DAVIDSON, R.G. and NEWMAN, M.J., 2003, James Powrie, chronicler of the Scottish Lower Devonian: *Proceedings of the Geologist's Association,* v. 114, p. 243–246.

DAVIES, R.J., CARTWRIGHT, J.A., STEWART, S.A., LAPPIN, M., and UNDERHILL, J.R., 2004, 3D seismic technology: application to the exploration of sedimentary basins. Geological Society Publishing House, London, Memoir 29.

DEBELMAS, JACQUES, 2001, Un siècle et demi de géologie alpine à l'université de Grenoble (1850–2000) (avec la collaboration de Pierre Antoine, Hubert Arnaud, Jacqueline Desmons, Maurice Gidon, Pierre Giraud, Claude Kerckhove, Marcel Lemoine, Robert Michel et Jean-Louis Pairis). Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 6 (séance du 12 décembre 2001), p. 107–144.

DEFFEYES, K.S., 2001, Hubbert's peak: the impending world oil shortage. Princeton University Press, 208 p.

DEMICCO, R.V. and KLIR, G.J., 2003, eds., Fuzzy logic in geology. Elsevier, Amsterdam, 347 p.

DEVORKIN, D.H., 2000, Henry Norris Russell: Dean of American astronomers. Princeton University Press, Princeton, NJ, 499 p.

DICKINSON, W.R., 2003, The place and power of myth in geoscience: an associate editor's perspective: *American Journal of Science,* v. 303, no. 9, p. 856–864.

DIXON, ROGER, 2002, History of geology—The wood graves: The wood graves and memorials: Melton and church: *Magazine of the Geologists' Association,* v. 1, no. 4.

DODSON, PETER, 1998, The horned dinosaurs. A natural history. Princeton University Press, Princeton, NJ, 360 p.

DONOVAN, R.N., 2003, Magical rocks—a touching invitation the legacy of Oscar Monning: *The Compass,* v. 77, no. 3, p. 53–58.
DONOVAN, S.K., 2003, Charles Taylor Trechmann and the development of Caribbean geology between the wars: *Proceedings of the Geologists' Association,* v. 114, p. 345–354.
DOPITA, M.A. and SUTHERLAND, R.S., 2003, Astrophysics of the diffuse universe. Astronomy and Astrophysics Library. Springer-Verlag, New York, 439 p.
DREW, L.J., 2001, Oil and forecasting: reflections of a petroleum geologist. Oxford University Press, North Carolina, 252 p.
DRUITT, T.H. and KOKELAAR, B.P., 2002, The eruption of Soufrière Hills Volcano, Montserrat, from 1995 to 1999. Geological Society Publishing House, London, Memoir 21, 664 p.
DUDMAN, CLARE, 2003, Wegener's jigsaw. Hodder and Stoughton, 405 p.
DULLO, W.C. and GEOLOGISCHE VEREINIGUNG, eds., 2003, Milestones in Geosciences. Selected benchmark papers published in the journal 'Geologische Rundschau'. Springer, 120 p.
DURAND-DELGA, MICHEL, 2002, Pierre-Bernard Palassou (1745–1830), pionnier de la géologie des Monts-Pyrénées. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 1 (séance du 13 mars 2002), p. 1–10.
EBY, G.N., 2004, Principles of environmental geochemistry. Thomson-Brooks/Cole, Kentucky, 514 p.
EHRLICH, GRETEL, 2001, This cold heaven: seven seasons in Greenland. Pantheon Books.
EKMAN, PAUL, CAMPOS, JOE, DAVIDSON, RICHARD, and DE WAAL, FRANS, 2003, Emotions inside out: 130 years after Darwin's the expression of the emotions in man and animals, 404 p.
ELDREDGE, NILES, 1997, Fossils. The evolution and extinction of species. Princeton University Press, Princeton, NJ, 240 p.
ELLIS, RICHARD, 2001, Aquagenesis: the origin and evolution of life in the sea. Viking/Penguin.
ESTRADA, SOLVEIG, 2002, Austellung über die Antarktis-Expedition Erich von Drygalskis vor 100 Jahren (1901–1903): *Geowissenschaftliche Mitteilungen,* no. 8, p. 81.
ETHRIDGE, F., FLORES, R., and HARVEY, M., 2004, Recent developments in fluvial sedimentology. CD-rom. SEPM Special Publications, Tulsa, OK.
ETTENSOHN, F.R., RAST, NICHOLAS, and BRETT, C.E., eds., 2002, Ancient seismites. GSA Publications, Boulder, CO, 190 p.
EVANS, M.E. and HELLER, FRIEDRICH, eds., 2003, Environmental magnetism: principles and applications of enviromagnetics. Elsevier, Amsterdam, 229 p.
FARA, P., 2002, Newton: the making of genius. Columbia University Press, New York, 347 p.
FARRELL, K.M., 2001, Geomorphology, facies architechture, and high-resolution, non-marine sequence stratigraphy in avulsion deposits, Cumberland Marshes, Saskatchewan: *Sedimentary Geology,* v. 139, p. 93–150.
FISHER, R.V., 1998, Out of the crater. Chronicles of a volcanologist. Princeton University Press, Princeton, NJ, 180 p.
FISHER, R.V., HEIKEN, GRANT, and HULEN, J.B., 1998, Volcanos. Crucibles of change. Princeton University Press, Princeton, NJ, 334 p.
FORTEY, R.A., 2002, Stephen Jay Gould (1941–2002): *Science,* v. 296, p. 1984.
FOX, ROBERT, 2001, Théologie naturelle et géologie à l'époque de William Buckland. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 5 (séance du 16 mai 2001), p. 89–105.
FRASER, A.J. and GAWTHORPE, R.L., 2003, An altas of Carboniferous basin evolution in northern England. Geological Society Publishing House, London, Memoir 28, 88 p.
FRIZON DE LAMOTTE, DOMINIQUE and BUL, DIEGO, 2002, La question des relations entre failles et plis dans les zones externes des chaîns de montagnes. Ebauche d'une histoire des idées au cours du XX^{e} siècle. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 3 (séance du 13 mars 2002), p. 47–62.
FRUMKIN, AMOS, 2001, The cave of the letters sediments—indication of an early phase of the Dead Sea depression?: *The Journal of Geology,* v. 109, p. 79–90.
GAL, O., 2002, Meanest foundations and Nobler superstructures: Hooke, Newton, and the "compounding of the celestiall motions of the planetts". Boston Studies in the Philosophy of Science 229, Kluwer Academic, River Edge, NJ, 239 p.
GALISON, TIM, 2003, Einstein's clocks, Poincare's maps: empires of time. W.W. Norton and Company, 389 p.
GAUDANT, JEAN, 2001, Analyse d'ouvrage G. Laurent: La naissance du Transformisme Lamarck entre Linné et Darwin. Éditions Vuibert/Adapt, Paris, coll. Inflexions, 2001 1 vol. broche 16, 5

x 24 cm, 151 p. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 12 (séance du 12 décembre 2001), p. 209-.

GAUDANT, JEAN, 2001, Jacques Sigal (1920–2001). In memoriam. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 11 (séance du 12 décembre 2001), p. 207–208.

GAUTIER, D.L., 2004, Roles of Organic matter in sediment diagenesis. CD-rom. SEPM Special Publications. Tulsa, OK.

GEHANI, N., 2003, Bell labs: life in the crown jewel. Silicon Press, Summit, NJ, 258 p.

GEISLER, D., GREBEL, E.K., and MINNITI, D., eds., 2002, Extragalactic star clusters. International Astronomical Union Symposium 207. Proc. Symp., Pucón, Chile, Mar. 2001. Astronomical Society of the Pacific, San Francisco, 778 p.

GILFANOV, M., SUNYAEV, R., and CHURAZOV, E., eds., 2002, ESO Astrophysics symposia. Proc. Conf. 2001, Garching, Germany. Springer Verlag, New York, 618 p.

GIUSTI, CHRISTIAN, 2001, La perception du relief des Monts du haut Dourdou dans la Statistique minéralogique du département de l'Aveyron de Jean Blavier (1806). Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 8 (séance du 12 décembre 2001), p. 181–199.

GLAZNER, A.F., WALKER, DOUG, and BARTLEY, JOHN, eds., 2002, Geologic evolution of the Mojave desert and southwestern basin and range. GSA Publications, Boulder, CO, 314 p.

GOLDSTEIN, ROBERT and REYNOLDS, T.J., 2004, Systematics of fluid inclusions in diagenetic minerals. Short course notes on CD-rom. SEPM Publications, Tulsa, OK.

GORDON, JOHN, 2001, Glaciers. Colin Baxter Photography, 72 p.

GORSLINE, D.S. and RODOLFO, K.S., 2003, Rock stars: Kenneth Orris Emery (1914–1998): Pioneer marine geologist: *GSA Today,* v. 13, no. 11, p. 18–19.

GREEN, D., ASTILL, K., HOLME, R., LEGGETT, J., and MERRITT, G., 2004, On Moody-Stuart's 'The curse of oil?' with rejoinder by M. Moody-Stuart: *Proceedings of the Geologists' Association,* v. 115, part 1, p. 6–12.

GUÉGUEN, YVES and PALCIAUSKAS, VICTOR, 1994, Introduction to the physics of rocks. Princeton University Press, Princeton, NJ, 392 p.

GUÉGUEN, YVES, ed., 2004, Mechanics of fluid saturated rocks. Elsevier, Amsterdam, 416 p.

HALL, Jr., C.A., 2002, Nearshore marine paleoclimatic regions, increasing zoogeographic provinciality, molluscan extinctions, and paleoshorelines, California: Late Oligocene (27 Ma) to Late Pliocene (2.5 Ma). GSA Publications, Boulder, CO, 490 p.

HAMES, W., MCHONE, M.M., RENNE, P., and RUPPEL, C., eds., 2003, The central Atlantic magmatic province: insights from fragments of Pangea. AGU Publications.

HANOR, J.S., 2004, Origin and migration of subsurface sedimentary brines. Short course notes on CD-rom. SEPM Publications, Tulsa, OK.

HARRIS, P.M., SALLER, A.H., and SIMO, J.A., 1999, Advances in carbonate sequence stratigraphy: applications to outcrops, reservoirs, and models: *Journal of Sedimentary Research,* v. 69, no. 2.

HARRISON, W.E. and TESTA, S.M., 2004, Petroleum and the environment. American Geological Institute Publications, 64 p.

HAWKING, S., ed., 2002, On the shoulders of giants: the great works of physics and astronomy. Running Press, Philadelphia, 1264 p.

HAYES, BRIAN, 2004, Qwirks of history: *American Scientist,* v. 92, p. 12–16.

HEALEY, EDNA, 2001, Emma Darwin. The inspirational wife of a genius. Headline, London, 384 p.

HENDRIX, M.S. and DAVIS, G.A., eds., 2001, Paleozoic and Mesozoic tectonic evolution of Central Asia: from continental assembly to intracontinental deformation. GSA Publications, Boulder, CO, 433 p.

HERKEN, G., 2002, Brotherhood of the bomb: the tangled lives and loyalties of Robert Oppenheimer, Ernest Lawrence, and Edward Teller. Henry Holt, New York, 448 p.

HOLMES, J.A. and CHIVAS, A.R., eds., 2002, The ostracoda: applications in Quaternary research. Geophysical Monograph 131. American Geophysical Union, Washington DC, 313 p.

HOLTON, GERALD and BRUSH, S.G., 2001, Physics, the human adventure: from Copernicus to Einstein and beyond. Rutgers University Press, New Brunswick, NJ, 582 p.

HOWARTH, R.J. and LEAKE, B.E., 2002, The Life of Frank Coles Philips (1902–1982) and the structural geology of the Moine petrofabric controversy. London, Bath, Geological Society of London Memoir, no. 23, 95 p.

HSÜ, K.J., 1992, Challenger at sea. A ship that revolutionized earth science. Princeton University Press, 454 p.

HUDSON, TRAVIS, FOX, F.D., and PLUMLEE, G.S., 2004, Metal mining and the environment. American Geological Institute Publications, 64 p.

HUTTER, K., WANG, Y, and BEER, H., eds., 1999, Advances in cold-region thermal engineering and sciences: technological, environmental, and climatoloigcal impact. Lecture Notes in Physics 533, Proc. Symp., Darmstadt, Germany, Aug.. Springer-Verlag, New York, 608 p.

IRION, ROBERT, 2001, Smooth X-rays fill the milky way's disk: *Science,* v. 293, p. 1030–1031.

JACOB, D.J., 1999, Introduction of atmospheric chemistry. Princeton University Press, Princeton, NJ, 264 p.

JAHREN, A.H., ARENS, N.C., SARMIENTO, GUSTAVO, GUERRERO, JAVIER, and AMUNDSON, RONALD, 2001, Terrestrial record of methane hydrate dissociation in the Early Cretaceous: *Geology,* v. 29, no. 2, p. 159–162.

JANSSENS, I.A., FREIBAUER, A., CIAIS, P., SMITH, P., NABUURS, G.-J., FOLBERTH, G., SCHLAMADINGER, B., HUTJES, R.W.A., CEULEMANS, R., SCHULZE, E.-D., VALENTINI, R., and DOLMAN, A.J., 2003, Research articles: Europe's terrestrial biosphere absorbs 7 to 12 % of European anthropogenic CO_2 emissions: *Science,* v. 300, p. 1538-.

JARDINE, L., 2002, On a grander scale: the outstanding life of Sir Christopher Wren. HarperCollins, New York, 600 p.

JOSEPH, P. and LOMAS, S.A., eds., 2004, Deep-water sedimentation in the Alpine foreland basin of SE France: New perspectives on the Grès d'Annot and related systems. Geological Society Publishing House, London, Special Publication 221, 458 p.

KALB, JON, ANEME, DEJENE, KIDANE, KETEMA, SANTUR, MOHAMED, and KECHRID, AFIFA, eds., 2004, Bibliography of the earth sciences for the horn of Africa. Ethiopia, Eritrea, Somalia, and Djibouti – 1620–1993. American Geological Institute Publications, 494 p.

KANAS, NICK, 2003, From Ptolemy to the renaissance: How classical astronomy survived the dark ages: *Sky & Telescope,* v. 105, no. 1, p. 50–69.

KAUFMAN, D.S., HU, F.S., BRINER, J.P., WERNER, AL, FINNEY, B.P., and GREGORY-EAVES, IRENE, 2003, A ~33,000 year record of environmental change from Arolik Lake, Ahklun Mountains, Alaska, USA: *Journal of Paleolimnology,* v. 30, p. 343–362.

KEEL, W.C., 2002, The road to galaxy formation. Springer-Praxis Books in Astrophysics and Astronomy. Praxis/Springer Verlag, New York, 230 p.

KEENE, C.M., ed., 2004, Directory of geoscience departments 2004. 42nd edition. American Geological Institute Publications, 600 p.

KENNETT, J.P., CANNARIATO, K.G., HENDY, I.L., and BEHL, R.J., 2002, Methane hydrates in Quaternary change: the clathrate gun hypothesis. American Geophysical Union, Washington, DC, 224 p.

KERR, R.A., 2001, Mass extinctions face downsizing, extinction: *Science,* v. 293, p. 1037.

KERR, R.A., 2002, Of mars water, old cold, and deep talk: *Science,* v. 296, p. 1962–1963.

KERR, R.A., 2004, Gas hydrate resource: Smaller but sooner: *Science,* v. 303, p. 946–947.

KEYNES, RANDAL, 2001, Annie's box: Charles Darwin, his daughter, and human evolution. Fourth Estate, London, 363 p.

KIRK, J., RUIZ, J., CHESLEY, J., and TITLEY, S., 2003, The origin of gold in South Africa: *American Scientist,* v. 91, p. 534–541.

KOEBERL, CHRISTIAN and MACLEOD, K.G., eds., 2002, Catastrophic events and mass extinctions: impacts and beyond. GSA Publications, Boulder, CO, 729 p.

KÖLBL-EBERT, M., 2002, Arbeitskreis "Geschichte der Geowissenschaften": *Geowissenschaftliche Mitteilungen,* no. 8, p. 71.

KÖLBL-EBERT, M., 2003, George Bellas Greenough (1778–1855): a lawyer in geologist's clothes: *Proceedings of the Geologists' Association,* v. 114, p. 247–254.

KOYI, H.A. and MANCKTELOW, N.S., eds., 2001, Tectonic modeling: a volume in honor of Hans Ramberg. GSA Publications, Boulder, CO, 270 p.

KRUCKEBERG, A.R., 2002, Geology and plant life: the effects of landforms and rock types on plants. University of Washington Press.

KURIAN, G.T., 2002, The nobel scientists: a biographical encyclopedia. Prometheus Books, Amherst, NY, 420 p.

LABOULAIS-LESAGE, ISABELLE, 2002, Les méthodes de la géographie physique selon Nicolas Desmarest. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 4 (séance du 19 juin 2002), p. 63–77.

LANGFORD, H.E., 2004, Short communication: Middle Pleistocene deposits at Stanground (Peter-

borough) and March, eastern England: a discussion based on new evidence: *Proceedings of the Geologists' Association,* v. 115, part 1, p. 91–95.

LARSON, R.B. and BROMM, VOLKER, 2001, The first stars in the universe: exceptionally massive and bright, the earliest stars changed the course of cosmic history: *Scientific American,* v. 285, no. 6, p. 64–71.

LASAGA, A.C., 1998, Kinetic theory in the earth sciences. Princeton University Press, Princeton, NJ, 728 p.

LAST, W.M. and SMOL, J.P., ed., 2001, Trackng environmental change using lake sediments—volume 1: Basin analysis, coring, and chronological techniques. Kluwer Academic Publishers, Dordrecht, 548 p.

LAURENT, GOULVEN, 2002, Jean-Guillaume Bruguière (1750–1798), et les débuts de la paléontologie des invertébrés. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 2 (séance du 13 mars 2002), p. 37–46.

LESLIE, MITCH, ed., 2003, NetWatch: All eyes on the father of chemistry. <moro.imss.fi.it/lavoisier>

LEVY, D.H., 2000, Shoemaker by Levy. Princeton University Press, Princeton, NJ, 320 p.

LEWIS, CHERRY, 2000, The dating game: one man's search for the age of the earth. Cambridge University Press, 253 p.

LEWIS, J.S., 2004, Physics and chemistry of the solar system. 2nd edition. Elsevier, Amsterdam, 608 p.

LI, YUAN-HUI, 2000, A compendium of geochemistry. Princeton University Press, Princeton, NJ, 488 p.

LINK, P.K. and MINK, L.L., 2002, Geology, hydrogeology, and environmental remediation: Idaho National Engineering and Environmental Laboratory, eastern Snake River Plain Idaho. GSA Publications, Boulder, CO, 296 p.

LIRER, L., VINCI, A., ALBERICO, I., GIFUNI, T., BELLUCCI, F., PETROSINO, P., and TINTERRI, R., 2001, Occurrence of inter-eruption debris flow and hyperconcentrated flood-flow deposits on Vesuvio volcano, Italy: *Sedimentary Geology,* v. 139, p. 151–167.

LOMAS, S.A. and JOSEPH, P., eds., 2004, Confined turbidite systems. Geological Society Publishing House, London, Special Publication 222, 336 p.

LOYNACHAN, T.E., BROWN, K.W., COOPER, T.H., and MILFORD, M.H., 2004, Sustaining our soils & society. American Geological Institute Publications, 64 p.

MACARTHUR, R.H. and WILSON, E.O., 2001, Theory of island biogeography. With a new foreword by Edward O. Wilson. Princeton University Press, Princeton, NJ, 224 p.

MADDOX, B., 2002, Rosalind Franklin: The dark lady of DNA. HarperCollins, New York, 380 p.

MAITTE, BERNARD, 2001, René-Just Haüy (1743–1822) et la naissance de la cristallographie. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 7 (séance du 12 décembre 2001), p. 143–179.

MARTÍNEZ CATALÁN, J.R., HATCHER, Jr., R.D., Arenas, Ricardo, and Días Garcia, Florentino, eds., 2002, Variscan-Appalachian Dynamics: The building of late Paleozoic basement. GSA Publications, Boulder, CO, 300 p.

MAX, M.D., ed., 2000, Natural gas hydrate in oceanic and permafrost environments. Coastal systems and continental margins, Kluwer Academic Publishers, Netherlands, v. 5, 415 p.

MAYOR, ADRIENNE, 2000, The first fossil hunters. Paleontology in greek and roman times. Princeton University Press, Princeton, NJ, 344 p.

MCCALL, JOE, 2001, Tektites in the geological record: showers of glass from the sky. Geological Society Publishing House, London, 264 p.

MERILÄINEN, J.J., HYNYNEN, JUHANI, PALOMÄKI, ARJA, MÄNTYKOSKI, KEIJO, and WITICK, ALLAN, 2003, Environmental history of an urban lake: a paleolimnological study of Lake Jyväsjärvi, Finland: *Journal of Paleolimnology,* v. 30, p. 387–406.

MERRITT, DAVID, FERRARESE, LAURA, and JOSEPH, C.L., 2001, No supermassive black hole in M33?: *Science,* v. 293, p. 1116–1118.

MICKELSON, D.M. and ATTIG, J.W., eds., 1999, Glacial processes, past and present. Special paper 337 of the Geological Society of America, Colorado, 203 p.

MIDDLETON, G.V., 2003, Encyclopedia of sediments and sedimentary rocks. Kluwer Academic Publishers, Netherlands, 821 p.

MILKOV, A.V. and SASSEN, ROGER, 2003, Two-dimensional modeling of gas hydrate decomposition in the northwestern Gulf of Mexico: significance to global change assessment: *Global and Planetary Change,* v. 36, p. 31–46.

MILLER, E.L., GRANTZ, ARTHUR, and KLEMPERER, S.L., eds., 2002, Tectonic evolution of the

Bering Shelf-Chukchi Sea—Arctic margin and adjacent landmasses. GSA Publications, Boulder, CO, 374 p.
MITHEN, STEVEN, 2003, After the ice: A global human history, 20,000–5000 BC. Weidenfeld and Nicolson, London, 636 p.
MOFFAT, A.S., 2002, South American landscapes: ancient and modern: *Science,* v. 296, no. 5575, p. 1599–1960.
MONKS, NEAL and PALMER, PHILIP, 2002, Ammonites. Natural History Museum, London, 160 p.
MONROE, J.S. and WICANDER, REED, 2004, Physical geology: Exploring the earth. Fifth Edition, Thomson, Brooks/Cole, 735 p.
MOODY-STUART, M., 2004, The curse of oil?: *Proceedings of the Geologists' Association,* v. 115, part 1, p. 1–5.
MOORE, J.E., ZAPOROZEC, ALEXANDER, and MERCER, J.W., eds., 2004, Groundwater: a primer. American Geological Institute Publications, 53 p.
MOSHER, SHARON, 2001, Dialogue: to merge or not to merge—that is the question: a case for intersociety collaboration: *GSA Today,* November, p. 11.
MOYAL, ANN, 2001, Platypus: the extraordinary story of how a curious creature baffled the world. Smithsonian Institution Press.
NELSON, E.C., 2001, Patrick Browne M.D. (c. 1720–1790), an Irish doctor in the Caribbean: his residence on Saint Croix (1757–1765) and his unpublished accounts of volcanic activity on Monserrat: *Archives of Natural History,* v. 28, no. 1, p. 135–147.
NG, S.L. and SIN, F.S., 2003, A diatom model for inferring sea level change in the coastal waters of Hong Kong: *Journal of Paleolimnology,* v. 30, p. 427–440.
NICHOL, D., BASSETT, M.G., and DEISLER, V.K., eds., 2002, Landslides and landslide management in North Wales. NMGW Geological Series no. 22, National Museums and Galleries of Wales, Cardiff, 134 p.
NIXON, S.W., 2004, The artifical Nile: The Aswan high dam blocked and diverted nutrients and destroyed a Mediterranean fishery, but human activities may have revived it: *American Scientist,* v. 92, p. 158-.
NOAD, JON and TEEUW, RICHARD, 2002, Economic applications of sedimentary conference: *IAS Newsletter,* no. 176, p. 11.
NOWELL, D.A.G., 2001, History: the 'father of English geology': *Geology Today,* v. 17, no. 5, p. 172–174.
NUHFER, E.B., PROCTOR, R.J., MOSER, P.H., et al., 2004, Citizen's guide to geologic hazards. American Geological Institute Publications, 134 p.
NUNN, P.J., 1999, Environmental change in the Pacific Basin; chronologies, causes, consequences. Wiley, Chichester, 357 p.
OCHES, E.A. and MCCOY, W.D., 2001, Historical developments and recent advances in amino acid geochronology applied to loess research: examples from North America, Europe, and China: Earth-Science Reviews, v. 54, p. 173–192.
O'CONNOR, RALPH, 2003, Thomas Hawkins and geological spectacle: *Proceedings of the Geologist's Association,* v. 114, p. 227–241.
OLDROYD, D.R., 2002, Earth, water, ice, and fire: two hundred years of geological research in the English lake district. Geological Society Memoir no. 25. The Geological Society of London, 328 p.
OLDROYD, D.R., ed., 2002, The earth inside out: some major contributions to geology in the twentieth century. Geological Society Special Publication, London, no. 192, 369 p.
OLSON, H.C. and LECKIE, R.M., eds., 2004, Micropaleontological proxies for sea-level change. SEPM Special Publication no. 75. SEPM Publications, Tulsa, OK.
OMAROV, T.B., ed., 2002, Non-stationary dynamical problems in astronomy. Nova Science, Hauppauge, NY, 248 p.
OVERDUIN, J.M. and WESSON, P.S., 2003, Dark matter, dark matter. Series in Astronomy and Astrophysics. IOP, Philadelphia, 216 p.
OVERLAND, J.E., 2003, Accounts from 19th-century Canadian arctic explorer's logs reflect present climate conditions: *EOS,* v. 84, no. 40, p. 411–412.
PADDEN, MAUREEN, WEISSERT, HELMUT, and DE RAFELIS, MARC, 2001, Evidence for Late Jurassic release of methane from gas hydrate: *Geology,* v. 29, no. 3, p. 223–226.
PALUMBI, S.R., 2001, The evolution explosion: how humans cause rapid evolutionary change. W.W. Norton.
PANEK, RICHARD, 2001, Outta sight. Once in a while, Jupiter's moons take a walk: *Natural History,* v. 110, no. 9, p. 88–89.

PAPENFUSS, D., LÜST, D., and SCHLEICH, W.P., eds., 2002, 100 years Werner Heisenberg: works and impact. Wiley, Hoboken, NJ, 299 p.

PARK, R.G., 2002, The Lewisian geology of Gairloch, NW Scotland. Geological Society Publishing House, London, Memoir 26, 88 p.

PECKMANN, J., REIMER, A., LUTH, U., LUTH, C., HANSEN, B.T., HEINICKE, C., HOEFS, J., and REITNER, J., 2001, Methane-derived carbonates and authigenic pyrite from the northwestern Black Sea: *Marine Geology,* v. 177, nos. 1–2, p. 129–150.

PECKMANN, JÖRN, GISCHLER, EBERHARD, OSCHMANN, WOLFGANG, and REITNER, JOACHIM, 2001, An early Carboniferous seep community and hydrocarbon-derived carbonates from the Harz Mountains, Germany: *Geology,* v. 29, no. 3, p. 271–274.

PETFORD, N., and MCCAFFREY, K.J.W., eds., 2003, Hydrocarbons in crystalline rocks. Geological Society Publishing House, London, Special Publication 214, 248 p.

PETTERSON, B.R., 2002, Christopher Hansteen and the first observatory at the University of Oslo, 1815–28: *Journal of Astronomical History and Heritage,* v. 5, no. 2, p. 123–134.

PEUCKER-EHRENBRINK, B. and SCHMITZ, B., eds., 2001, Accretion of extraterrestrial matter throughout Earth's history. Kluwer Academic Publishers/ Plenum Publishers, New York/Dordrecht/Boston/London/Moscow, 466 p.

PHILANDER, S.G., 2000, Is the temperature rising? The uncertain science of global warming. Princeton University Press, Princeton, NJ, 240 p.

PICHARD, GEORGES, 2002, Pons-Joseph Bernard (1748–1816), un naturaliste provençal du siècle des Lumières. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XVI, 2002, no. 8 (séance du 12 décembre 2002), p. 133–162.

POAG, C.W., 1999, Chesapeake invader. Discovering america's giant meteorite crater. Princeton University Press, Princeton, NJ, 168 p.

POINAR, JR., GEORGE and POINAR, ROBERTA, 1999, The amber forest. A reconstruction of a vanished world. Princeton University Press, Princeton, NJ, 216 p.

POJETA, JR., JOHN and SPRINGER, D.A., 2004, Evolution and the fossil record. American Geological Institute Publications, 32 p.

POLEY, J.P., 2000, Eroica, the quest for oil in Indonesia (1850–1898). Kluwer Academic Publishers, Netherlands, 275 p.

PORCELLI, D., BALLENTINE, C.J., and WIELER, R., eds., 2002, Noble gases in geochemistry and cosmochemistry. Reviews in Mineralogy and Geochemistry. Mineralogical Society of America and the Geochemical Society, Washington, D.C., v. 37, 844 p.

PRICE, M.F., 2002, Mountains: geology, natural history, and ecosystems. Voyager press.

PROTHERO, R.W., IVANY, L.C., and NESBITT, E.A., eds., 2003, From greenhouse to icehouse. The marine Eocene-Oligocene transition. Proceedings of the Penrose Conference held 17–22 August 1999 in Olympia, Washington. Columbia University Press, New York, 541 p.

PRUM, R.O. and BRUSH, A.H., 2003, Which came first, the feather or the bird?: *Scientific American,* v. 288, no. 3, p. 84–93.

RADDER, H., ed., 2003, The philosophy of scientific experimentation. University of Pittsburgh Press, Pittsburgh, 311 p.

RAWSON, P.F., et al., 2001, Professional handbook series: Stratigraphical procedure. Geological Society Publishing House, London, 64 p.

REDFERN, MARTIN, 2003, The Earth: a very short introduction. Oxford University Press, 141 p.

REDFERN, RON, 2004, Origins: the evolution of continents, oceans, and life. American Geological Institute Publications, 360 p.

REGENAUER-LIEB, K. and YUEN, D.A., 2003, Modeling shear zones in geological and planetary sciences: solid- and fluid-thermal—mechanical approaches: *Earth-Science Reviews,* v. 63, p. 295–349.

RENAULT, R.W. and ASHLEY, G.M., eds., 2002, Sedimentation in continental rifts. SEPM special publication no. 73. SEPM, Tulsa, 329 p.

RICHARDS, R.J., 2002, The romantic conception of life. Science and the philosophy in the age of Goethe. University of Chicago Press, Chicago, 607 p.

RISACHER, FRANÇOIS, ALONSO, HUGO, and SALAZAR, CARLOS, 2003, The origin of brines and salts in Chilean salars: a hydrochemical review: *Earth-Science Reviews,* v. 63, p. 249–293.

ROSE, E.P.F. and NATHANAIL, C.P., eds., 2000, Geology and warfare: examples of the influence of terrain and geologists on military operations. Geological Society Publishing House, London, 498 p.

ROUTHIER, PIERRE, 2001, Présentation d'ouvrage Voyage au monde du métal. Inventions et aventures. 159 p., un index, 12 encadrés, 8 planches couleurs, 39 figures en noir. Editions Belin,

Paris, 1999. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 9 (séance du 12 décembre 2001), p. 201–202.
ROYTE, ELIZABETH, 2001, The tapir's morning bath: mysteries of the tropical rain forest and the scientists who are trying to solve them. Houghton Mifflin.
RUBIN, D.M., 2004, Cross-bedding, bedforms, and paleocurrents. Concepts in Sedimentology and Paleontology on CD-rom. SEPM Publications, Tulsa, OK.
RUDDIMAN, W.F., 2001, Earth's climate. Past and future. W.H. Freeman & Company, New York, 465 p.
RUDDIMAN, W.F. and RAYMO, M.E., 2003, A methane-based time scale for Vostok ice: *Quaternary Science Reviews,* v. 22, p. 141–155.
SALTZMAN, M.D., 2001, The first North American petroleum refinery: *Chemical Heritage,* v. 21, no. 4, p. 12–14.
SARMAJA-KORJONEN, KAARINA, KULTTI, SEIJA, SOLOVIEVA, NADIA, and VÄLIRANTA, MINNA, 2003, Mid-Holocene palaeoclimatic and palaeohydrological conditions in northeastern European Russia: a multi-proxy study of Lake Vankavad: *Journal of Paleolimnology,* v. 30, p. 415–426.
SASLAW, W.C., 2000, The distribution of the galaxies: gravitational clustering in cosmology. Cambridge University Press, New York, 508 p.
SASSEN, ROGER, SWEET, S.T., MILKOV, A.V., DEFREITAS, D.A., and KENNICUTT II, M.C., 2001, Thermogenic vent gas and gas hydrate in the Gulf of Mexico slope: Is gas hydrate decomposition significant?: *Geology,* v. 29, no. 2, p. 107–110.
SCHAER, JEAN-PAUL, 2001, Le rôle d'Agassiz en glaciologie ou la réussite d'un entrepreneur scientifique ambitieux. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 4 (séance du 16 mai 2001), p. 77–87.
SCHOPF, J.W., 2001, Cradle of life. The discovery of the Earth's earliest fossils. Princeton University Press, Princeton, NJ, 336 p.
SCOTCHMOOR, J.G., SPRINGER, D.A., BREITHAUPT, B.H., and FIORILLO, A.R., eds., 2004, Dinosaurs: the science behind the stories. American Geological Institute Publications, 186 p.
SCOTT, P.W. and BRISTOW, C.M., eds., 2002, Industrial minerals and extractive industry geology. Geological Society Publishing House, London, 376 p.
SEGRÈ, GINO, 2002, Taking the temperature of cosmos and culture. A matter of degrees: what temperature reveals about the past and future of our species, planet, and universe. Viking, New York, 300 p.
SENGÖR, A.M.C., 2001, Is the present the key to the past or the past the key to the present? James Hutton and Adam Smith versus Abraham Gottlob Werner and Karl Marx in interpreting history. GSA Publications, Boulder, CO, 51 p.
SENGÖR, A.M.C., 2003, The large wavelength deformation of the lithosphere: materials for a history of the evolution of thought from the earliest times to plate tectonics. GSA Publications, Boulder, CO, 333 p.
SHAMOO, A.E. and RESNIK, D.B., 2003, Responsible conduct of research. Oxford University Press, New York, 345 p.
SHANKLAND, P.D. and ORCHISTON, W., 2002, Nineteenth century astronomy at the U.S. Naval Academy: *Journal of Astronomical History and Heritage,* v. 5, no. 2, p. 165–180.
SHAYLER, D.J., 2002, Apollo: the lost and forgotten missions. Springer-Praxis Books in Astronomy and Space Sciences. Springer-Verlag, New York, 344 p.
SIDI, F.H., NUMMEDAL, DAG, IMBERT, PATRICE, DARMAN, HERMAN, and POSAMENTIER, H.W., eds., 2004, Tropical deltas of southeast Asia—sedimentology, stratigraphy, and petroleum geology. SEPM Special Publication no. 75. SEPM Publications, Tulsa, OK.
SINHA, A.K., WHALEN, J.B., and HOGAN, J.P., eds., 1997, The nature of magmatism in the Appalachian orogen. GSA Publications, Boulder, CO, 270 p.
SLANE, P.O. and GAENSLER, B.M., eds., 2002, Neutron stars in supernova remnants. Astronomical Society of Pacific Conference Series 271. Proc. Wksp. Boston, Mass., Aug. 2001. Astronomical Society of the Pacific, San Francisco, 441 p.
SMITH, R.A., 2003, The amateur in Lake district geology: *Proceedings of the Geologists' Association,* v. 114, p. 355–361.
SMITH, R.B., and SIEGEL, L.J., 2000, Windows into the Earth: the geologic story of Yellowstone and Grand Teton National Parks. Oxford University Press.
SMOL, J.P., BIRKS, H.J.B., and LAST, W.M., 2001, Tracking environmental change using lake sed-

iments—volume 3: Terrestrial, algal, and siliceous indicators. Kluwer Academic Publishers, Dordrecht, 371 p.

SNOKE, A.W., ROWE, D.W., YULE, J.D., and WADGE, GEOFFREY, 2001, Petrologic and structural history of Tobago, West Indies: a fragment of the accreted, Mesozoic oceanic arc of the Southern Caribbean. GSA Publications, Boulder, CO, 54 p.

SNOKE, A.W., TULLIS, JAN, and TODD, V.R., eds., 1998, Fault-related rocks. A photographic atlas. Princeton University Press, Princeton, NJ, 629 p.

SPALDING, M.D., RAVILIOUS, CORINNA, and GREEN, E.P., 2001, World atlas of coral reefs. University of California Press.

SPARKS, D.L., 2002, Environmental Soil Chemistry. 2nd Edition. Elsevier, Amsterdam, 352 p.

SPUDIS, P.D., 2001, What is the moon made of?: *Science,* v. 293, no. 5536, p. 1779–1780.

STANLEY, Jr., G.D., 2002, Eberhard Gischler (ed): Mojsisovics on the Triassic reefs of the Dolomites (1879). University of Miami Rosenstiel School of Marine and Atmospheric Science, Miami, Florida, 2001: *Coral Reefs,* v. 21, no. 2, p. 229–233.

STARCK, J.-L. and MURTAGH, F., 2002, Astronomical image and data analysis. Astronomy and Astrophysics Library. Springer-Verlag, New York, 289 p.

STEIN, SETH and FREYMUELLER, J.T., eds., 2002, Plate boundary zones. AGU Pubilcations.

STEVER, GUY, 2002, In war and peace: my life in science and technology. Joseph Henry Press, Washington DC, 382 p.

STEWART, A.D., 2002, The later Proterozoic Torridonian rocks of Scotland: their sedimentology, geochemistry and origin. Geological Society Publishing House, London, Memoir 24, 136 p.

STEZENBACH, L.D. and YATES, M.V., 2003, The dictionary of environmental microbiology. 2nd Edition. Elsevier, Amsterdam, 310 p.

STIGLER, S.M., 2002, Statistics on the table: the history of statistical concepts and methods. Harvard University Press, Cambridge, MA, 488 p.

STOUDT, EMILY and HARRIS, P.M., 2004, Hydrocarbon reservoir characterization. Short course notes on CD-rom. SEPM Publications, Tulsa, OK.

STOW, D.A.V., PUDSEY, C.J., HOWE, J.A., FAUGÉRES, J.-C., and VIANA, A.R., eds., 2003, Deep water contourite systems: modern drifts and ancient series, seismic and sedimentary characteristics. Geological Society Publishing House, London, Memoir 22, 476 p.

SZPIRO, G.G., 2003, Kepler's conjecture: how some of the greatest minds in history helped solve one of the oldest math problems in the world. Wiley, Hoboken, NJ, 296 p.

TAKASHASHI, E., LIPMAN, P., GARCIA, M., NAKA, J., and ARAMAKI, S., eds., 2002, Hawaiian volcanoes: deep underwater perspectives. AGU Publications.

TANDY, P., 2004, William Barlow (1845–1934): speculative builder, man of leisure and inspired crystallographer: *Proceedings of the Geologists' Association,* v. 115, part 1, p. 77–84.

TATTERSALL, IAN, 2001, How we came to be human: The acquisition of language and the capacity for symbolic art may lie at the very heart of the extraordinary cognitive abilities that set us apart from the rest of creation: *Scientific American,* v. 285, no. 6, p. 56–63.

TAYLOR, K.L., 2001, Un commentiare anonyme inedit sur les observations et les idées de William Hamilton (1730–1803) relatives aux phénomènes volcaniques de la région de Naples. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 1 (séance du 14 mars 2001), p. 1–35.

THACKRAY, J.C., 1999, To see the fellows fight. British Society for the History of Science, <bshs@hidex.demon.co.uk>

THOMSON, K.S., 2003, Stratigraphy's founding saint: *Science,* v. 301, p. 51.

TOHIDI, BAHMAN, ANDERSON, ROSS, CLENNNELL, M.B., BURGASS, R.W., and BIDERKAB, A.B., 2001, Visual observation of gas-hydrate formation and dissociation in synthetic porous media by means of glass micromodels: *Geology,* v. 29, no. 9, p. 867–870.

TOURET, J.L.R., 2001, Eloge d'Eugène Raguin (1900–2001). Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 10 (séance du 12 décembre 2001), p. 203–205.

TOURET, LYDIE, 2001, L'abbé Jérôme Tonnellier (1751–1819): quarante ans au service des mines. Travaux du Comité français d'histoire de la Géologie (cofrhigéo). Troisième série, t. XV, 2001, no. 2 (séance du 14 mars 2001), p. 37–49.

TREWIN, N.H., ed., 2003, The geology of Scotland. Geological Society Publishing House, London, 600 p.

URTON GARY, 2003, Signs of the Inka Khipu: binary coding and the Andean knotted-string records. University of Texas Press, 202 p.

VALDIYA, K.S., 2001, Saraswati. The river that disappeared. Universities Press (India) Ltd. Hyderabad, 116 p. (distributed by Sangam Books, London).
VAN DOVER, C.L., 2000, The ecology of deep-sea hydrothermal vents. Princeton University Press, Princeton, NJ, 352 p.
VAN RENSBERGEN, P., MALTMAN, A.J., HILLIS, R.R., and MORLEY, C.K., eds., 2003, Subsurface sediment mobilization. Geological Society Publishing House, London, Special Publication 216, 528 p.
VANDAS, S.J., WINTER, T.C., and BATTAGLIN, W.A., 2004, Water and the environment. American Geological Institute Publications, 64 p.
VENI, GEORGE, DUCHENE, HARVEY, CRAWFORD, N.C., GROVES, C.G., HUPPERT, G.N., KASTNING, E.H., OLSON, RICK, and WHEELER, B.J., 2004, Living with karst—a fragile foundation. American Geological Institute Publications, 64 p.
VISHER, G.S., ed., 1999, Stratigraphic systems: origin and application, includes CD-rom, Academic Press, 700 p.
VOLLMER, S.V. and PALUMBI, S.R., 2002, Hybridization and the evolution of reef coral diversity: *Science,* v. 296, p. 2023–2024.
WEART, S.R., 2003, The discovery of global warming. Harvard University Press, 228 p.
WEDDLE, T.K. and RETELLE, M.J., eds., 2001, Deglacial history and relative sea-level changes, northern New England and adjacent Canada. GSA Publications, Boulder, CO, 284 p.
WHITE, M. and GRIBBIN, J., 2002, Stephen Hawking: a life in science. Joseph Henry Press, Washington DC, 348 p.
WHITTET, D.C.B., 2003, Dust in the galactic environment. 2nd edition. Series in Astronomy and Astrophysics. IOP, Philadelphia, 390 p.
WILCOX, BARRY, 2004, Marine remnants add to Darling Basin history: *AusGeo News,* v. 73, p. 14–15.
WILSON, W.E. and MOORE, J.E., eds., 2004, Glossary of hydrology. American Geological Institute Publications, 250 p.
WINCHESTER, SIMON, 2003, Krakatoa. The day the world exploded: August 27, 1883. HarperCollins, New York, 432 p.
WOMERSLEY, TARA, 2002, Darwin books destroyed in fire: *History of Science Society Newsletter,* v. 31, no. 1, p. 8.
WOODROFFE, C.D., 2002, Coasts: Form, process, and evolution. Cambridge University Press, 623 p.
WYCKOFF, JEROME, 2004, Reading the earth: Landforms in the making. American Geological Institute Publications, 352 p.
WYSE JACKSON, P.N., BUTTLER, C.J., and SHARPE, TOM, 2003, Bryozoans and corsetry: the palaeontological work of George Robert Vine (1825–1893) of Sheffield: *Proceedings of the Geologists' Association,* v. 114, p. 339–344.
WYSE JACKSON, P.N., PARKES, M.A., and WOOD, R., eds., 2002, Studies in Palaeozoic palaeontology and biostratigraphy in honour of Charles Hepworth Holland. The Palaeontological Association, London, Special Papers in Palaeotology no. 67, 260 p.
YOUNGQUIST, WALTER, 2004, GeoDestinies. American Geological Institute Publications, 500 p.
ZEMPOLICH, W.G. and COOK, H.E., eds., 2004, Paleozoic carbonates of the commonwealth of independent states (CIS): Subsurface reservoirs and outcrop analogs. SEPM Special Publication no. 74. SEPM Publications, Tulsa, OK.
ZHANG, DONGXIAO and WINTER, C.L., eds., 2000, Theory, modeling and field investigation in hydrogeology. USGS Special Paper no. 348. United States Geological Survey.
ZÖLLER, LUDWIG and SEMMEL, ARNO, 2001, 175 years of loess research in Germany—long records and "unconformities": Earth-Science Reviews, v. 54, p. 19–28.

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2. Revised manuscripts should be submitted in doubled-spaced hard copy, and, whenever possible, on 3.5" disks identifying both the platform (Mac or PC) and the word-processing program used (WordPerfect 7, Word, etc.). Zip disks are also accepted. Electronic submission is encouraged.
3. Figures are welcome in illustrating articles. Line drawings should be directly reproducible; glossy prints must be furnished for all half-tone illustrations. Digital submission is encouraged, either on 3.5" disks, or on CDs, Zip, or Jaz disks. Files in the TIFF format are best. Files in JPEG or GIF formats are **unacceptable.**
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Footnotes use a superscript numeral in the text. The footnote citation format is a simplified version of that found in the *Chicago Manual of Style,* 14th edition. Although complete information should be in the footnotes, it is often useful to the reader if a short hint is given in the text to indicate which work is being cited. For example: "As Lyell wrote in 1833 in his *Principles of Geology. . . .*". Succeeding citations in footnotes should use a short-title with the author's last name, year of publication, and page(s): e.g., Oldroyd, Archaean, 1991, 446. The use of author and short-title replaces *Ibid.* and *Op. cit.,* which sometimes inconvenience readers. For more complicated situations, see *The Chicago Manual of Style,* 14th ed. (Chicago: University of Chicago Press, 1993), chapter 15, or contact the editor. Authors may include short discussions in footnotes.

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a work-as-a-whole is acceptable only if the reference is actually to the work as a whole. If the reference concerns a particular chapter or page range, these must be specified. All quotations require specific pages. Short comments and original (foreign) language quotations may also be found in the footnotes.

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Eduard Suess, *The Face of the Earth,* 5 vols. (Oxford: Clarendon Press, 1904), 1:17.

Arthur H. Robinson, *Early Thematic Mapping in the History of Cartography* (Chicago: University of Chicago Press, 1982), 37–43.

K. E. Bullen and Bruce A. Bolt, *Introduction to the Theory of Seismology,* 4th ed. (Cambridge: Cambridge University Press, 1985), 103–107.

Article in journal:

David R. Oldroyd, The Archaean Controversy in Britain: Part I—The Rocks of St. David's, *Annals of Science,* 1991, 48:407–452, on 434.

Eric L. Mills, The Historian of Science and Oceanography after Twenty Years, *Earth Sciences History,* 1993, 12:5–18.

Article or chapter in book:

Stephen J. Pyne, Certain Allied Problems in Mechanics: Grove Karl Gilbert at the Henry Mountains, in *Two Hundred Years of Geology in America,* ed. Cecil J. Schneer (Hanover, NH: University Press of New England, 1979), 225–238.

Karl Hufbauer, Solar Physics' Evolution into a Subdiscipline (1945–1975), in *New Trends in the History of Science,* eds. R. P. W. Visser, et al. (Amsterdam: Rodopi, 1989), 73–91.

Unpublished thesis or dissertation:

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This article is based on research in the James David Forbes Papers, at St. Andrews University Library, in St. Andrew's, United Kingdom. It has also drawn on the Oral History Interview of Walter M Elsasser, conducted by J. T. Kiehl on 12 March 1986. This interview and a preliminary transcript are part of the American Institute of Physics/American Meteorological Society project

and may be consulted at the American Institute of Physics, College Park, MD, USA.

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Bullen, K. E., and Bruce A. Bolt, *Introduction to the Theory of Seismology,* 4th ed. (Cambridge: Cambridge University Press, 1985).

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Hufbauer, Karl, Solar Physics' Evolution into a Subdiscipline (1945–1975), in *New Trends in the History of Science,* eds. R. P. W. Visser, et al. (Amsterdam: Rodopi, 1989), 73–91.

Unpublished thesis or dissertation:

Wolter, John A., The Emerging Discipline of Cartography, Ph.D. Diss., University of Minnesota, 1975.

GUIDELINES FOR WRITING ÉLOGES

EARTH SCIENCES HISTORY

Fields of academic endeavor often memorialize the passing of their practitioners through the publishing of obituaries, memorials, or éloges. The History of the Earth Sciences Society has established a committee (composed of the Past President and three other HESS members) to arrange for the writing of such biographical notices. These éloges will be published in **EARTH SCIENCES HISTORY** at the first opportunity. The committee and the authors of éloges will follow these guidelines:

1. Individuals who contributed significantly to the history of the earth sciences will be appropriate for an éloge, for their contributions including the writing of articles or books in the field, for their efforts as editors, or generally in the support of history of the earth sciences, and to HESS particularly. Eligibility will extend to non-members as well as to members of the History of the Earth Sciences Society.
2. The committee shall normally solicit authors for particular éloges. Proposals for unsolicited éloges will be considered by the committee, but prospective authors of such unsolicited éloges are strongly advised to contact the Past President before beginning. Do not contact the Editor of **EARTH SCIENCES HISTORY** concerning éloges.
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of earth science, it should also paint a vivid picture of the person. The person's publications will always be evident and available; the personality will not.
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EARTH SCIENCES HISTORY

In reviewing a manuscript for **EARTH SCIENCES HISTORY** please comment in as much detail as your time permits upon the following matters (and of course anything else that comes to mind.) Please inform the editor whether you wish your review to be anonymous.

1. Would you have read this through if you had simply come across it already published in **EARTH SCIENCES HISTORY**? If your answer is "No", what might the author(s) do to increase the interest of the piece for you?
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8. If this article is revised according to your suggestions, will it be suitable for publication in **EARTH SCIENCES HISTORY**?
9. Other comments and suggestions?
10. Make your comments and suggestions constructive! Because articles for the journal typically pass through at least one cycle of revision before being accepted, it will help greatly if you phrase your comments in a manner which can aid the author(s) in the task of revising the manuscript.
11. If you judge that the manuscript ***cannot*** be brought to a publishable standard in anything like its present form, please say so.

Many thanks for this service to **EARTH SCIENCES HISTORY** and The History of the Earth Sciences Society. Our referees' reviews and commentary are the primary foundation and guarantee of scholarly standards. Please return your comments to the editor in a timely manner. **In no circumstances take longer than 30 days.**

TREASURER'S REPORT FOR 2004

(As of September 10, 2004)

BALANCE FORWARDED FROM 2003	$ 27,862.08
Less Payments to Allen Press for ESH 22/2	−$ 6,855.36
Less other operating Expenses including Website and postage	−$ 1,061.85
INCOME TO HESS INCLUDING INTEREST	+$ 19,873.50
BALANCE AS OF SEPTEMBER 10, 2004	$ 39,818.37

EXPLANATION

One issue of *Earth Sciences History* has been published in the year 2004 up to September 10. That was volume 22 number 2 for 2003. The cost for the two issues for 2004 will be in the range of $13,000. Once the printing costs of the two 2004 issues are paid HESS will finish the fiscal year of 2004 with a healthy budget surplus. No dues notices for 2005 have been mailed. Dues levels for 2005 will remain the same. The reason for a small reduction in the printing costs for 2004 is a decline in membership both on the individual level and institutional level. Thirteen institutional subscribers cancelled in 2004. As a society, we can only remain fiscally healthy if we maintain a solid individual membership and institutional subscription base. As treasurer I am currently working on the disposition of one small library which was donated to HESS. The private owner of the collection has requested that his proceeds from this collection be donated to HESS. That donation will be reflected in the 2005 budget.

Other expenses for 2004 include: The renewal of our website and domain name for four years at a cost of $56. $216.21 for Ed Rogers's participation at the Geological Society of America's Affiliated Society meeting in Boulder. $200 for coverage in the Allen Press Directory. $243.26 for mailing of dues notices, reminders and reimbursements to our associate editors. $346.18 for the cost of printing new membership forms.

If any member knows of someone who wishes to donate a run of *Earth Sciences History,* arrangements can be made to have the set shipped to an officer. We are currently in need of many of the early issues which are out of print.

Respectfully submitted
Ed Rogers
HESS treasurer

INDEX: AUTHORS, 1982–2003

INDEX: KEY WORDS, 1982–2003

N.B. This index draws mainly on key words found in titles and abstracts.

INDEX: HISTORICAL PEOPLE, 1982–2003

N.B. Each listing is to an entire article, even though the person named may not be on every page. This index is not complete for individuals mentioned only incidentally.

INDEX: BOOKS REVIEWED, 1982–2003

INDEX: BOOK REVIEWERS, 1982–2003

NOTES ON CONTRIBUTORS

Frederik P. "Frits" Agterberg was born in 1936 in the Netherlands. He studied geology and geophysics at Utrecht University obtaining his Ph.D. in 1961. After a postdoctoral fellowship at the University of Wisconsin, he joined the Geological Survey of Canada, initially as petrological statistician. Later he helped form and headed the Geomathematics Section (1971/96) in Ottawa. In 1996 he commenced a phased retirement from the Geological Survey of Canada, where he remains as emeritus research scientist. He has authored over 200 scientific publications including the textbook *Geomathematics* (1974) and the monograph "Automated Stratigraphic Correlation" (1990). He continues to be associated with the University of Ottawa, where he commenced teaching statistics in geology and directing the research of graduate students in 1968. Organizational activities include: Leader, IGCP Project 148 on "Quantitative Stratigraphy" (1979–1985) and President, International Association for Mathematical Geology (2004–2008).

Aitor Anduaga is a Visiting Research Fellow of the Modern History Faculty at the University of Oxford. He was educated in the physical sciences (physics degree from the University of Barcelona) and in humanities (philosophy degree in Madrid). He obtained the Ph.D. degree in physics in 2001 at the University of Basque Country. His research interests include the institutionalization and teaching of Meteorology and Geophysics in Europe. At the present his work focuses on the development of atmospheric sciences and the radio industry in the British Empire in the interwar years.

David Branagan is a former President of the International Commission for the History of the Geological Sciences (INHIGEO), and a committee member of HESS. He is presently an Honorary Research Associate in the School of Geosciences, The University of Sydney, where he taught engineering geology and field studies for some thirty years. Apart from numerous publications in engineering geology, regional tectonics of the Sydney region, texts and films on remote sensing and general geology, he has published more than one hundred papers in the history of geology, concentrating on geological ideas about the Pacific region and the geologists who explored the region. His biography of Sir T. W. Edgeworth David (1858–1934) will shortly be published by the National Library of Australia, covering David's life in Wales and Australia, his adventures on the island of Funafuti, in the Antarctic with Shackleton and in World War I in Flanders, and his international network of geological correpondents.

Lawrence J. Drew attended the University of New Hampshire (B.Sc. Degree in Geology and Chemistry), The Pennsylvania State University (M.Sc. and Ph.D. degrees in Mineralogy and Petrology and Statistics and a Post-Doctoral Fellow), and Virginia Polytechnic Institute (M.A. in Economics). He was employed by Geotech Inc. (1967–1969), Cities Service Oil Company (1969–1972), and the U.S. Geological Survey (1972–present). During his career, he has specialized in oil and gas and mineral-resource assessment, structural geology and tectonics as related to the emplacement of mineral deposits, environmental issues, and, more recently, the assessment of natural aggregate, ground water in fractured reservoirs, and regional geochemistry. Dr. Drew has published over 200 scientific papers and abstracts, written two books, conducted workshops throughout the world, and been the keynote speaker at numerous national and international meetings and conferences. In recognition of Dr. Drew's research, he has been awarded the Meritorious Service Award by the U.S. Department of the Interior and the Griffith Teaching Award by the International Association for Mathematical Geology (IAMG), has been named the Distinguished Lecturer for 2005 by the IAMG, and is listed in *Who's Who in America.*

Gerald M. Friedman, founding editor of **EARTH SCIENCES HISTORY** and Distinguished Professor of Geology at Brooklyn College and Graduate School of the City University of New York, received the Sidney Powers Memorial Award, the highest honor of the American Association of Petroleum Geologists. He also was elected an Honorary Lifetime Member of **History of the Earth Sciences Society** in 2001, along with Ellis L. Yochelson. These are the first two individuals chosen for this distinction, based on their significant contributions to the history of the earth sciences and to the society.

Andrew S. Goudie is Master of St Cross College, University of Oxford, and the former head of the School of Geography and the Environment. He is President designate of the International Association of Geomorphologists and Editor in Chief of the recently published *Encyclopedia of Geomorphology.* His research interests include deserts, climate change, and rock weathering.

Richard Howarth is a geologist by training, but has specialised in the application of statistical methods to the interpretation of geological and geochemical data. Since 1985 he has also carried out research into the history of the use of quantitative methods in geology and geophysics. He took his B.Sc. (1963) and Ph.D. (1966) at the University of Bristol, U.K. He subsequently worked for Shell International, The Hague, Netherlands (1966–1968); the Applied Geochemistry Research Group, at Imperial College, London (1968–1985), becoming Reader in Mathematical Geology (1978–1985); then British Petroleum (1985–1992). Following the downsizing of BP Research in 1992, he is an independent consultant and Honorary Professor in Mathematical Geology in the Department of Earth Sciences, University College London. He has been awarded the Murchison Fund of the Geological Society (1987), the Krumbein Medal of the International Association of Mathematical Geology (2000), and the Richardson Award of the Geologists' Association (2000).

Adrienne Mayor is a folklorist and historian of ancient science who specializes in legends about natural history. Her book *The First Fossil Hunters: Paleontology in Greek and Roman Times* (Princeton University Press, 2000) explored myths and historical accounts describing discoveries of the fossil remains of extinct creatures in the ancient world. *Fossil Legends of the First Americans* (forthcoming Princeton University Press, 2005) draws on historical literature, oral traditions, and interviews to show that Native Americans collected fossils for medicine and other uses and created perceptive myths to explain the remains of extinct species.

Dan Merriam is a Senior Research Scientist (Emeritus) with the Kansas Geological Survey at the University of Kansas. His work on geology of the Midcontinent (USA) and numerical geology has led to his interest in the early work on the subject of geomathematics. In addition to exploring the contributions of early workers, he has sought out the roots on the application of mathematics to geology and the use of computers by geologists. He is a charter member of the IAMG. He was president of the Association in 1976–1980, founding editor-in-chief of the Association's *Mathematical Geology and Computers & Geosciences,* and he currently edits *Natural Resources Research.* His latest major review on the subject is "The Quantification of Geology: From Abacus to Pentium: a Chronicle of People, Places, and Phenomena," which will appear in a future issue of *Earth-Science Reviews.* He was awarded the William Christian Krumbein Medal by the IAMG in 1981.

Wolfgang Scherer was born in Berlin, Germany in 1941, has lived in Venezuela since 1952, and is a Venezuelan citizen. Married to MaryAnn Holmblad and the father of three children: daughters Erika and Monika, and son Wolfgang. He

graduated in 1965 from the Universidad Central de Venezuela as Geologist and obtained his M.Sc. (1968) and Ph.D. (1973) from Northwestern University. He began his professional career as a field and exploration geologist for Texas Petroleum Company, entered the Venezuelan Petroleum Research and Development Company (INVEPET—later renamed PDVSA-INTEVEP) in 1976, and worked there until his retirement in 2000 in the Earth Sciences and Civil Engineering departments. His projects there related to the origin, distribution, and quantification of Venezuelan petroleum and coal resources, as well as to the stability and geo-technical aspects of the protecting seawalls of the giant Bolivar Coast Field. He is now associate professor of geology at the Universidad Central de Venezuela, where he teaches Physical Geology, Geostatistics, and Stratigraphy. He is a Charter Member of the International Association for Mathematical Geology, a member of the Venezuelan Engineering Society, and the Venezuelan Society of Geologists. He is on the editorial boards of several national and international scientific journals. He has been Corresponding National Member of the Venezuelan Academy of Physical, Mathematical and Natural Sciences since 1998, and was elected a Member in 2001 (Individuo de Número), occupying the Chair Number IX. He has been Treasurer of the Academy since 2003. He is the Director of the Foundation for the Development of the Physical, Mathematical and Natural Sciences, FUDECI and the author and co-author of more than 30 international publications, and numerous technical reports in his specialty.

Nikos Solounias is a paleontologist-anatomist and native of Samos, the land of Pythagoras, but now lives in New York. Solounias is a specialist in ungulate mammal evolution (the hoofed mammals). He has also spent most of his scientific career in the study of the Miocene fossils from Samos. These fossils are now housed in more than 30 natural history museums and include many types for Miocene species. The Samos fauna is species rich, the specimens are well preserved, and it represents the beginnings of the African savanna. See more in: http: www.freewebs.com/nsolounias/

C. Rowl Twidale has retired from the Department of Geology and Geophysics in the University of Adelaide, but maintains an office and facilities there. He still enjoys field work and research, and continues to publish. He holds doctorates from Bristol and McGill as well as an honorary degree from the Universidad Complutense de Madrid, awarded for his contributions to the study of granite forms, deserts, weathering, and old land surfaces. He has long been interested in the history of geomorphological ideas. Twidale is currently engaged in the dating of Australian desert dunes. He is also involved in ecotourist projects, e.g., the well-known Wave Rock at Hyden, Western Australia.

E. H. Timothy Whitten (b. 1927), Chartered Geologist; Ph.D. (1952), D.Sc. (1968), both London, England; Krumbein Medallist and Past-President of International Association for Mathematical Geology. Retired 1989 as Provost and Vice-President for Academic Affairs, Michigan Technological University (U.S.A.); formerly Department Chair and Professor of Geological Sciences, Northwestern University (Illinois, U.S.A.) and 1948–1958 Lecturer in Geology, Queen Mary College (University of London, England). Published well over one hundred geological articles between 1949–2004 and two books (including a structural-geology textbook in 1966). Senior Fellow of Geological Societies of both America and London; Honorary Member Geologists' Association; past President International Association for Mathematical Geology; for many years Treasurer of both International Map Collectors' Society and Widecombe Fair Committee Co.

Ltd; immediate past Commodore of Royal Western Yacht Club of England. He retired to Dartmoor, England, where, over the years, he kept bullocks on traditional small holding, was Parish Councillor, Chair of Primary School Governors, etc.

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Nominating Committee: Ken Taylor (2002, 2003, 2004). E-mail: ktaylor@ou.edu. David Oldroyd (2003, 2004, 2005). E-mail: doldroyd@optushome.com.au. Dorothy Sack (2004, 2005, 2006). E-mail: sack@ohio.edu

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