

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. Radhakrishnan, 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 papers 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 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).

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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 long-time 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.

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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 suburban 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.

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INTERESTING PUBLICATIONS

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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

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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.
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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, *Archaeon*, 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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Book:

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. Schnee (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.

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William Thomson to J. D. Forbes, 30 July 1847, incoming 1847/42, James David Forbes Papers, St. Andrews University Library. (This will vary according to the system at each archive. Subsequent citations may use abbreviations.)

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Forbes, James David. Papers. St. Andrews University Library. (This will vary according to the system at each archive.)

Elsasser, Walter M. Oral History Interview conducted by J. T. Kiehl, 12 March 1986. 1 session, 1 cassette; preliminary transcript. Part of American Institute of Physics/ American Meteorological Society project.

Paragraph format:

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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Unpublished thesis or dissertation:

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

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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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4. Length: Essays will be between 1,000 and 2,000 words, as determined by the committee. One photograph may be included.
5. Bibliography: Only partial bibliographies can be published. Authors should refer mainly to publications relating to history of the earth sciences. Authors are encouraged to refer to more complete bibliographies published in other venues and to published memorials that summarize the person's entire career.

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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

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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

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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 hooved 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 Widcombe 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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