We welcome letters to the editors. We reserve the right to edit them for clarity and brevity. By writing a letter to the editors, you give Elements permission to reproduce it.

The editors

I found issue 4 of Elements very interesting, as I found the other issues. I especially liked the comments by Hochella Jr. and Heaney. They dealt with “hot topics” that surface almost every day here: funding (although we in Argentina are astronomical distances away from the figures that Dr. Hochella quotes) and the competition between different research areas.

I have noticed that there are serious differences between researchers devoted to geochemistry, petrology, mineralogy and related areas (who need “hard” data, often quite costly) and researchers in areas in which they can write wonderful papers using more economical instruments like a binocular microscope and a camera. First, I would like to make it clear that I totally respect other researchers in areas in which the competition between different research areas.

Several things contribute to this situation for researchers in mineralogy, petrology and geochemistry:

- different funding needs depending on the type of study. With some exceptions, no serious journal in our discipline accepts papers that are not based on a number of chemical analyses, from “common” whole rock data to more sophisticated techniques like ion microprobe.
- some sort of “fashion trends” in study areas. Nowadays, almost anything related to global climate change and dinosaurs (just to quote two examples) makes much more noise and is accepted much more easily for publication than the discovery of a new pluton, however interesting it may be.
- there is a constant pressure to publish papers in indexed journals, and to evaluate production based solely on that criterion.

REFERENCES


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While this has certainly led to higher quality papers and is a healthy practice, not all journals are equally strict when it comes to standards used to accept a paper.

This situation has gone quite far and, if criteria continue to be the same irrespective of the study area, it is likely that the number of researchers in more costly and not-very-popular fields will diminish and they (we) will loose even more representation. Time will tell.

Have you heard similar comments from other researchers in other countries?

Fernando Colombo, Cordoba, Argentina

I would like to join the gang in praising the editors and sponsoring societies for producing a magazine worthy of the great contributions of geochemistry and mineralogy to science and society! The June 2005 issue is no exception, with a number of fascinating articles summarizing hypotheses and research approaches regarding the origin and evolution of life on the early Earth. Since there has been a great deal of interest expressed in using the interlinking processes that form mineral deposits have always sat at the heart of the Earth system and the potential for using deposits as tools to explore different long-term Earth processes.

The following two letters were in the queue to be published in the September issue but had to be postponed due to lack of space.

Letters to the Editors

I first read the December 2005 issue of Geology and the January 2006 issue of Earth-Science Reviews and I must say I am very much interested in the contents of these issues. I have some comments on the discussion of the Hauptman-Karle Nobel Prize. In the 1950s the USGS crystal-chemistry group was headed by Charles Christ, and included Howard Evans, Joan Clark, Mary Mose, Dan Appleman, and myself… In the early 1950s, Karle and Herb Hauptman were completing the mathematical analysis of the “phase problem” but had no immediate way of proving that the equations could lead to a structural solution of a light atom compound. At this same time Charlie Christ and Joan Clark were trying to solve the structure of the borate colemanite, and it was proposed that the Hauptman-Karle equations be used to solve the colemanite structure. Joan Clark spent months using hand calculations to solve the H-K inequalities (no big computers then). The preliminary structural solution was given as an abstract at the 1954 GSA meeting—the first use of the H-K method. Joan Clark is the real hero of this very important contribution to crystal-chemical science.

Malcolm Ross, Washington, USA

All articles in this issue make heavy use of qualifying phrases and adverbs (e.g. might have, must have, most likely, possibly, etc.) to emphasize the highly speculative nature of this avenue of research at the present time. The sole exception is the title chosen for the overall issue and its lead article, “Genesis: Rocks, Minerals, and the Geochemical Origin of Life.” Perhaps it was accidental that the title of the first chapter of the Bible, considered a sacred and divinely inspired text by Jews, Christians and Muslims worldwide, was chosen, but it gives the impression of drawing a line in the sand between science and religion over this hot-button issue. Furthermore, there is no avoiding the finality of the first line of the lead article, “Life arose on the young Earth as a natural chemical process.”

This flat statement of fact is itself contradicted throughout the issue and most particularly in the last paragraph of the same article: “Scientists are still far from understanding the ancient, intricate processes that led to the origin of life.” I see no reason to promote conflict between science and religion. Both of these great philosophical endeavors benefit from the application of logical reasoning and critical questioning of all presumptions, and both have much to contribute to the evolution of a just and sustainable society.

David J. Wesolowski, Kingston, Tennessee, USA

The sustainable development of minerals, that are non-renewable resources, is a major challenge in today’s world. In this regard the true definition of ‘sustainability’ is a debating point in itself: can such a concept exist with respect to non-renewable resources? Perhaps the ideal sustainability model is one that minimizes negative environmental impact and maximizes benefits to society, the economy and regional/ national development. Developed and near-developed economies rely for commodity supplies on developing countries where major mining operations are often a mainstay of the domestic economy. Limited environmental regulation and low wages lead to charges of exploitation. Also, large numbers of people have no alternative to living by informal, often dangerous, ‘artisanal’ mining. This Special Publication gives examples from developing countries at all scales of mineral extraction. The volume reviews environmental, economic, health and social problems, and highlights the need to solve these before sustainability can be achieved.

From the Geological Society of London

Geological Society Special Publication 250: Sustainable Minerals Operations in the Developing World
Edited by B. R. Marker, M. G. Petterson, F. McEvoy and M. H. Stephenson
The sustainable development of minerals, that are non-renewable resources, is a major challenge in today’s world. In this regard the true definition of ‘sustainability’ is a debating point in itself: can such a concept exist with respect to non-renewable resources? Perhaps the ideal sustainability model is one that minimizes negative environmental impact and maximizes benefits to society, the economy and regional/ national development. Developed and near-developed economies rely for commodity supplies on developing countries where major mining operations are often a mainstay of the domestic economy. Limited environmental regulation and low wages lead to charges of exploitation. Also, large numbers of people have no alternative to living by informal, often dangerous, ‘artisanal’ mining. This Special Publication gives examples from developing countries at all scales of mineral extraction. The volume reviews environmental, economic, health and social problems, and highlights the need to solve these before sustainability can be achieved.

Geological Society Special Publication 248: Mineral Deposits and Earth Evolution
Edited by I. McDonald, A. J. Boyce, I. B. Butler, R. J. Herrington and D. A. Polyá
Mineral deposits are not only primary sources of wealth generation, but also act as windows through which to view the evolution and interrelationships of the Earth system. Deposits formed throughout the last 3.8 billion years of the Earth’s history preserve key evidence with which to test fundamental questions about the evolution of the Earth. These include: the nature of early magmatic and tectonic processes, supercontinent reconstructions, the state of the atmosphere and hydrosphere with time, and the emergence and development of life. The interlinking processes that form mineral deposits have always sat at the heart of the Earth system and the potential for using deposits as tools to understand that evolving system over geological time is increasingly recognized. This volume contains research aimed both at understanding the origins of mineral deposits and at using mineral deposits as tools to explore different long-term Earth processes.

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