"Flawless diamond crystals more than one carat in weight were grown by GE scientists in the late 1960s. Herbert Strong (left) and Robert Wentorf, Jr., (right) show a collection of synthetic gems to GE vice president of research and development Arthur M. Bueche in May 1970." [From *The New Alchemists*; courtesy of H. M. Strong]

a first-rate novel all the way through. The personalities involved and their motivations are blended into the story beautifully. I found the portrayal of Loring Coes especially moving; this humble scientist finished out his life in obscurity, despite his seminal contributions to high-pressure mineralogy and to the diamond-synthesis effort at the Norton Company. George Kennedy, another colorful figure in the high-pressure field, is featured prominently. Descriptions of his flamboyant personal style and his involvement in the patent controversy between GE and De Beers Consolidated Mines of South Africa, as well as his own attempts at diamond making, spice up the account. However, I felt that Hazen could have spared us the details of some of Kennedy's exploits.

Perhaps the most fascinating chapter in the book is "Risky business," which describes how the product development took shape at GE. It is a case history of the transformation of a scientific discovery into a billion-dollar industry. The transition from a few initial specifications to production of over 100 tons of the noble allotrope of carbon annually was not always smooth: as C. Guy Suits later wrote, "An ill-timed sneeze in the wrong place would have wiped out the entire world supply of Man-Made diamonds [GE's trademarked synthetic diamond abrasive]."

The second part of the book, The Diamond Breakers, deals with the evolution of the diamond-anvil cell (DAC), describing the wonder apparatus itself, the personalities involved in its development, and the attainment of megabar pressures with it. Ironically, diamond, itself a product of high pressures and temperatures, was found to be able to generate record-high static pressures in the laboratory, resulting in the engagement of hundreds of scientists in modern high-pressure research. As Hazen notes, "For the better part of a century scientists relied on the earth to learn how diamonds were made. Today, they rely on diamonds to learn how the earth was made" (p. 189). A chapter entitled "Journey to the center of the earth" briefly describes some important applications of DAC high-pressure research to the Earth sciences. The account ends with the quest for metallic hydrogen and related controversies. This is all covered in 90-odd pages—not nearly enough space to do justice to the topic, but enough to convey to the reader the flavor of modern high-pressure research.

An experiment that comes close to the spirit of this book's title is the spectacular "black-to-gold" valence transition in samarium sulfide. It is really like the alchemist's dream come true, and I was surprised that it was not mentioned in the book. Also, toward the end of the book Hazen writes, "Harry Drickamer and his students at the University of Illinois became the first to demonstrate that pressure can transform simple compounds like table salt to metal" (p. 251). I don't know of any such claim by this group. Other than these errors of omission and commission the text is free of factual mistakes.

The New Alchemists is the best rendering to date of the entire story of diamond synthesis. This carefully researched and well-written book will give hours of reading pleasure to anyone—laymen, students, and scientists alike—who wants to learn about an exciting scientific achievement worthy of a Nobel Prize, which was unfortunately lost for reasons I won't go into here.

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