



New Book Brings Chemistry To Life With Art, History, Humor

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Editors and reporters: Arthur Greenberg is available at 603-862-1180 or art.greenberg@unh.edu. Review copies of the book can be requested via the publisher: <http://www.wiley.com/WileyCDA/Section/id-301915.html>.

DURHAM, N.H. -- A new book by a University of New Hampshire professor chronicles the beauty, mystery, truths, lies, and even humor of chemistry. "From Alchemy to Chemistry in Picture and Story" (Wiley, 2007), by UNH professor of chemistry Arthur Greenberg, connects five centuries of the development of chemistry to human history with 200 brief essays and a rich array of historical artwork, including 24 color plates.

"Chemistry's history is really fascinating. It's about how we've tried to understand nature around us," says Greenberg. "Looking at it historically, you get a feeling for how chemistry went from this spiritual way of trying to make sense of nature to becoming a science."

The book opens with the symbolism and allegory of chemistry's roots in alchemy, the attempted transmutation of lead into gold via the philosopher's stone. Although alchemy is widely considered a pseudo-science, Greenberg notes that it counts among its believers (and practitioners) Isaac Newton and Robert Boyle. The image Greenberg chooses for the book's cover, however, is powerful in its caution: An 18th-century engraving of a ragged, impoverished alchemist with a poem below that ends, "Nobody ever got rich from making gold, but many have ended up on the beggar's staff."

On the route from alchemy and metallurgy to nanotechnology and femtochemistry, Greenberg introduces some of chemistry's leading lights and surprising supporting actors, including:

- Antoine Lavoisier, the father of modern chemistry, who recognized that both combustion and calcination arise from the combination of atmospheric oxygen with inflammable substances and metals, but who nonetheless died by the guillotine as an aristocrat during the Reign of Terror.
- Elizabeth Fulhame, active in the 18th century, who introduced a theory of combustion and anticipated the concept of catalysis.
- The Andean Incas, who were skilled gold makers.
- Future U.S. President Herbert Hoover, who, with his wife Lou Henry Hoover, wrote the first English translation of Agricola's 1556 *De Re Metallica*, which charted early developments in mining and metallurgy.
- Maxfield Parrish, whose chemistry laboratory notebooks from Haverford College reveal his early fascination with the woodland fairies that would populate his later artwork.

- Maurice Sendak, who earned his way to high school graduation (with \$100 in his pocket) by illustrating *Atomics for the Millions*, a book co-authored by his physics teacher at Lafayette High School in Brooklyn, Hyman Ruchlis.

From Alchemy to Chemistry consolidates and updates two of Greenberg's previous works, *A Chemical History Tour* (Wiley, 2000) and *The Art of Chemistry* (Wiley, 2003). All three works tap Greenberg's 30-year passion for collecting rare books of chemistry, and much of the art in *From Alchemy to Chemistry* is from the author's personal bookshelves.

"The art drives the essays, for the most part," says Greenberg. "This tries to be a good cultural book, to put things in a historical context." Greenberg hopes the book will catch the attention of not only chemists but educators, scientists in other disciplines, and an interested general public looking for a compelling read and beautiful artwork. "You don't have to have had a chemistry course to appreciate it," he says.

Greenberg, an organic chemist, was dean of the College of Engineering and Physical Sciences from 2000 to 2005. Prior to coming to UNH, he was professor and chair of the chemistry department at the University of North Carolina at Charlotte. In addition to his books on the history and art of chemistry, he has authored more than 150 scientific articles and was co-editor of the journal *Structural Chemistry*.

Images are available to download:

http://unh.edu/news/img/colorinsert_Page_01.jpg

An engraved plate attributed to Augsburg printmaker Martin Engelbrecht in the early eighteenth century depicts an 18th-century engraving of a ragged, impoverished alchemist. The poems below, one in German and one in French, attribute the subject's poverty to alchemy.

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Before he was a well-known artist, Maxfield Parrish (1870 – 1966) took chemistry. Here is a page from 19-year-old Parrish's laboratory notebook from Haverford College. Part of the Quaker Collection of the Haverford College Library.