

Exploring the borders of science and literature is an interesting topic, as it touches upon an often overlooked reciprocity. It may seem obvious that science influences literature by supplying it with questions, seen or unseen environments, motives and metaphors. But we remain impervious to the fact that literature shapes science in return by its questions, seen or unseen environments, motives and metaphors.

At first glance, one might assume that the authors would have a very difficult time finding a common thread in the seemingly opposite worlds of chemistry and literature - that joining together mind with matter, or materialism with idealism might prove too much of a challenge. But it comes to light that these extremes indeed have a lot of interfaces, not least in the intellects that have pursued both. This collection of sixteen essays covers a broad range of topics, but can be loosely bound together under the term "chemical humanities", which is apt since many of chemistry's greatest thinkers were devout humanists.

The beginning of modern chemistry is generally associated with the publication of "The Sceptical Chymist" in 1661 by Robert Boyle (1627-1691). The main contribution of that book was to distinguish between chemists and alchemists, who for centuries had been trying to make gold and other precious metals from base metals, which was of course futile due to the elementary nature of gold. But even though chemistry became separated from alchemy, elusive phenomena were still very much the subjects of chemical studies. Boyle himself was a devout alchemist, although the methodology he put forth in his book became the last nail in its coffin. Alchemy, both in its own right and also as a precursor of chemistry, takes up significant space in the book reviewed hereby. Its influences on literature are described from before the Renaissance and the Scientific Revolution, as well as after.

This book focuses mainly on the presence of chemistry in literature, and provides numerous interesting examples of how chemical and alchemical doctrines have found their way into writing. Perhaps a more accurate title would have been "Chemistry in Literature". A lot of interesting examples are provided from the history of literature, although one cannot help thinking that the view of chemistry seems to be almost consistently negative - from the Faustian devil-mongering to modern concerns about environmental issues, artificiality, sedation and warfare. The mad scientist in his laboratory seems to be the general view of the chemist in popular culture.

Two of literature's giants, Johann Wolfgang Goethe (1749-1832) and Johan August Strindberg (1849-1912), were both polymaths with great interest in chemistry. Goethe's *Die Wahlerwandtschaften* (1809) was a notable example of applying theoretical chemistry to the psychological plot in a novel, suggesting that similar laws guide attraction and repulsion in human relationships as in certain substances. He also used chemical theory as a platform for tackling the problems of free will and determinism. Strindberg swung wildly between his great interest in scientific experimentation and his dabbling in the occult. A chapter devoted to him sheds a brilliant light on the vast influence of chemistry on his writing.

An interesting argument is made that Primo Levi's analytic and rational writing style, as well as his achievements as a witness to the Holocaust, stemmed from his training as an experimental chemist. Levi's autobiographical writing is also compared with the more recent work of Oliver Sacks (1933-2015), "Uncle Tungsten: Memories of a Chemical Boyhood".

The book goes a little beyond the scope of its title by including a section on the relationship between chemistry and cinema, but it is done very interestingly, for example by referring to an absolute gem of a film called "Le Chant du Styrene" (The Song of Styrene) from 1957. In it, renowned French film-maker Alain Resnais (1922-2014) and poet Raymond Queneau (1903-1976) produced a celebration of that wonderful new material - plastic.

There is a strong Russian presence in this book - which is both apt and brilliantly illuminating, as the country has supplied giants in both fields. It deals for example with the fear of environmental catastrophe by looking at "the poetics of pollutions in Russian science fiction".

It would of course be inconceivable to explore this topic without mentioning the British chemist and poet Humphry Davy (1778-1829). Davy was a great friend of the bards Samuel Taylor Coleridge (1772-1834) and Williams Wordsworth (1770-1850), and proofread for example their book "Lyrical Ballads", which is generally considered to mark the beginning of Romanticism in Britain. But more importantly, Davy himself was an accomplished poet, and his lectures on chemistry were often decorated with flowery romantic phrasings.

In summary, this is an absorbing work both for those interested in chemistry as well as those fascinated with literature - and an absolute treasure for fans of both subjects. Only two minor

issues might have been done differently. First, an index would have been very helpful and, secondly, referring repeatedly to Oliver Sacks' writing as "novels" is inaccurate.