



Paracelsus, the man who brought chemistry to medicine

1 March 2012

Steven A. Edwards, Ph.D.

ALTHOUGH NOT TRULY APPRECIATED UNTIL AFTER HIS DEATH, PARACELSUS WAS INSTRUMENTAL IN BRINGING CHEMISTRY KNOWLEDGE TO MEDICINE. (PORTRAIT: QUENTIN MASSYS (1465-1530), A FLEMISH ARTIST)

Paracelsus considered himself an alchemist, however his ideas on poison led to the introduction of chemistry into medicine in the sixteenth century. Although he was not fully appreciated until his death, medicine would be a different field without his contributions. His ideas were even used to cure Louis XIV.

Philippus Aureolus Theophrastus Bombastus von Hohenheim (1493-1541), who called himself [Paracelsus](#), is the man who pioneered the use of minerals and other chemicals in medicine. Mercury, lead, arsenic and antimony—poisons to most—were cures in his view. "In all things there is a poison, and there is nothing without a poison. It depends only upon the dose whether a poison is poison or not..." Although most of his prescriptions have fallen out of favor, arsenic is still used to kill certain parasites. Antimony was used as a purgative and gained much popularity after it was used to cure Louis XIV.

Paracelsus is also given credit for the invention of laudanum, or tincture of opium. He understood that opium was more soluble in alcohol. Laudanum was a major part of the pharmacopeia into the twentieth century. It was a common drug of abuse during the Victorian era; the English writer Wilkie Collins was a well-known addict.

Paracelsus was a Faustian character, with a fabulous thirst for knowledge, and given to wandering, though reports of his travels through China and Asia Minor are probably inaccurate. He was considered arrogant and surely lacked tact. "The ignorant physicians," he wrote, "are the servants of hell sent to torment the sick." He was run out of Basel after he famously threw a copy of Avicenna's Canon of medicine into a St. John's day bonfire and worse, his patient, famed publisher Johanannes Frobenius, died.

Paracelsus wrote many books about medicine, including what is surely the first monograph on diseases of miners. Most of his work was not published until after his death, and his influence increased posthumously. Paracelsus gained an important adherent in Peder Sorensen (aka Petrus Severinus), whose *Idea medicinæ philosophicae* published in 1571 championed Paracelsus over Galen, then considered the supreme medical authority. The first medical chemistry courses were taught in Jena in the early 1600s and *The New Chemical Medicine Invented by Paracelsus* was published in the Ottoman Empire shortly thereafter.

Though we think of Paracelsus as the first medical chemist, he thought of himself as an alchemist, and his writings are rife with astrology and mysticism, even his preparations of chemicals sound like passages out of a grimoire. But he had the soul of a scientist; he preferred direct experience over the ancient authorities. "Consider, I beseech you, this tiny grain of seed, black or brown in color, producing such wonderful greenness in its leaves, such variegated colors in its flowers, and flavors in its fruits of such infinite variety; see this repeated by Nature in all her products, and you find her so marvelous, so rich, in her mysteries that you will have enough to last you all your life in this book of Nature without referring to paper books."