

Alchemy: The Rude and Disgraceful Beginnings of Chemistry

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In 1831 Thomas Thomson dismissed alchemy as, “the rude and disgraceful beginnings of chemistry,”^[1]. Karl Marx used alchemy as a metaphor, calling the circulation of capital, “The great social retort into which everything is thrown, to come out again as the money crystal. Nothing is immune from this alchemy, the bones of the saints cannot withstand it.”^[2] However, it does not deserve such a bad reputation. All the alchemists were not con artists or greedy men trying to get rich quick. Unfortunately, they were all too often seen as such by others of their time as well as being remembered as such in our own time. True alchemists were honest men seeking to improve themselves and the world but received a bad reputation from false alchemists who were selfish con men and counterfeiters.

Alchemy is best known as being the search for a substance that would transmute, or change, metals into gold. This substance was known as the Philosopher's Stone. Since being able to produce gold from any other metal would make its creator very rich, most people assume that the only motive for doing it would be greed. Yet, as Richard Brzezinski and Zbigniew Szydlo stated in “A New Light on Alchemy,”

When a true alchemist, as opposed to a quack, was attempting to make gold he was not merely lusting for wealth: gold, because of its rarity, lack of reactivity, and glowing luster was the mineral world in its ultimate state of perfection. By discovering how to make gold, the alchemist would, it was thought, also have the means of perfecting the plant and animal worlds.^[3]

Moreover, while the Philosopher's Stone might have been the main goal of alchemy, it was not the only one. Alchemists had many other goals which they were attempting to achieve. Included in these goals were the searches for the universal solvent, or alkahest, which would dissolve all substances, and the universal medicine, or Elixir of Life, which would cure all diseases. More bizarre goals included attempts at palingenesis, or the reincarnation of plants and animals, and the creation of homunuli, or miniature humans. All these activities sought to, “Mak[e] sense of nature.”^[1]

Once sense was made of nature, that information could be used to cure all diseases and even eliminate poverty. Franciscan Roger Bacon often advocated alchemy, believing, “Alchemy is the most important of the experimental sciences; transmutation of metals should be undertaken in order to alleviate the poverty of the people,”^[1]. Yet this could also be used to harm people and make the rich richer. For this reason, early alchemists, led by Philippus Theophrastus Aureolus Bombastus von Hohenheim (Paracelsus) were very secretive. They believed that secrecy was necessary, “as a protection of God's or Nature's powers, which should not be available to the unworthy, parallel with the protection of God's truth available only through allegory in mainstream Christian discourse.”^[4] Indeed, they kept their writings in a riddle-like style that required years of study to understand. Later alchemists wrote in a much more simple and direct language. One of the most prominent of these later alchemists was a Polish man named Sendivogius, who wrote a relatively easy-to-read treatise on alchemy called *A New Light on Alchemy*. Fifty-six editions of this book were published, and copies were owned by Sir Isaac Newton and Antoine Laurent Lavoisier, the father of modern Chemistry. The secrecy they originally maintained became one of the biggest detriments to the alchemists. By keeping their knowledge secret, they allowed the imaginations of others to create an image for them. It was in this way that alchemists became known only for their attempts to transmute baser metals into gold.

One should distinguish between true alchemists and false alchemists who included con artists trying to trick people out of their money, counterfeiters who made money of false gold, and men trying to discover the secrets of making gold in order to get rich quick. Often the reputation of these false alchemists haunted true alchemists. Alchemists became known only as greedy con men.

The alchemists' reputation as con artists was created by men who would come into a town, swindle a person or several people out of their money, and then disappear. Although this was not deserved by true alchemists, there were indeed many men who pretended to be alchemists in order to swindle gullible people out of money. Both Chaucer's “The

Canon's Yeoman's Tale," written in 1390, and Ben Jonson's *The Alchemist*, written in 1610, involve alchemists who convince greedy men to invest heavily in their work, and then run off with the money. Although, "neither [story] deals with alchemists who are, or believe they are, carrying out the alchemical project"^[5], these two works demonstrate the low popular opinion of alchemists. As Knapp states, Chaucer's Yeoman's performance allows the view that many alchemical endeavors are scams, but it is possible that some are not, that there is, somewhere, a secret that will help Nature perfect herself more efficiently,"^[6] But, this point is subtle and could be easily missed by someone who is reading the story. A similar story involved an Arab who appeared in Prague in the 1590's claiming to be able to multiply gold. According to Brzezinski, "He obtained 100 gold marks from each guest, and placed the coins in a large crucible with a mixture of acids, mercury, lead, salt, eggshells and horse dung."^[7] He then produced an explosion that masked his departure, along with the 2400 gold marks he had collected. Stories such as this circulated widely during the Middle Ages.

Another stereotype that haunted alchemists was the idea that they were greedy men who were only trying to produce gold to make themselves rich. This image began when people saw alchemy as, "both the intellectual work of perfecting Nature and the physical work of minding the ovens and retorts, but the emphasis falls on the latter."^[8] The physical work was more visual, and therefore assumed to be the only work that alchemists did. Chaucer's "The Canon's Yeoman's Tale" displays this very clearly. According to Knapp, in this story, "Two instances of the word *work* treat it in the medieval way, "to bring about".... Another two instances assert the Canon's crafty planning.... The rest...refer to the work of the lab."^[9]

Further, alchemists were often labeled counterfeiters. This reputation arose over whether alchemists' gold was worth as much as natural gold. The Dominican Albert the Great believed that, "alchemists' gold differs from natural gold in that it possesses the properties or *accidentia* of natural gold but not its essence or *essentia*."^[10] This meant that even if the alchemists could produce gold from baser metals, it would not be as good as real gold, and it would be dishonest to sell it as such. This was what concerned kings most about alchemists. Many kings kept this evil in check by allowing alchemy only with special permission from the monarch, and arrested and imprisoned all others. Henry VI of England advocated of providing special permission to alchemists. Engaged in a long war with France, his treasury was running out of money and he needed a way to bulk it up quickly. So he issued decrees "to the nobility, the clerical order, the professors, and the medical doctors...to contribute their talent to the replenishment of the treasury and to the needs of the kingdom."^[11] In these decrees Henry VI concentrated on the priests believing that, "it should be easy to change base metal into precious since they daily changed bread and wine into the body and blood of Christ."^[12] The priests found this very insulting and refused to help, but many others did respond and the crown granted permission was to at least seventeen men. The gold produced by these men was used to make English coins. However, since alchemists' gold was not considered to be worth as much, once it was discovered that the coins were made of manufactured gold, they were no longer accepted by merchants of other countries. Some countries took drastic measures to keep these counterfeit coins out. According to Will Ogrinc, "in 1490 the weight of the Scottish coin had to be doubled so that it could be more easily distinguished from its English counterpart."^[13]

More damaging than bad reputations was the disapproval of the church. In 1317, Pope John XXII issued a bull stating that, "the practice of alchemy was thereupon forbidden for laymen and clerics."^[14] after alchemists had been unable to prove to the Pope that they practised their science in accordance with nature. However, when one reads the bull more closely one will discover that it was, "directed not against alchemy as a science but against those who pretend to be alchemists while practising deceit and counterfeiting money,"^[15]. While this bull was not a direct attack on true alchemists, it sparked the idea in the church that alchemy was evil. In 1376, Dominican Nicolaus Eymericus, who was the inquisitor general of Aragon, associated alchemists with magicians, "because they cannot possibly achieve their aims without the assistance of demons,"^[16]. As the idea of an Antichrist became more popular in Europe, alchemists became increasingly associated with him also. Hugh Argentinensis, author and illustrator of *Der Antichrist* stated, "The Antichrist (*Enndkrist*) is accompanied by masters who teach him the art of making gold as well as other sorcery and wicked tricks,"^[17]. These arguments and association gave the alchemist an increasingly negative reputation, making him more like a witch or sorcerer and less like a philosopher or scientist. Even once alchemists turned their attention to medicine, the criticism from the church continued. Erastus criticized Paracelsus, calling him a heretic for refusing "to make a categorical distinction between disease as a potency and disease as an actuality.... For if diseases, evils, existed as substances (*semina*) before the Fall, then they would have been evil substances created by God, and

this notion is unacceptable theology.” This twisted Paracelsus’s words, but succeeded in continuing the idea that alchemy was evil.

As with any other science, alchemy progressed. Ogrinc states that because of the social unrest in the fourteenth and fifteenth centuries, alchemists began searching for cures to specific diseases, instead of a universal Elixir of Life. Paracelsus was one of the first alchemists to suggest that minerals could be used to cure human diseases. This declaration sparked a whole new debate. Jole Shackelford states “Early Reception of Paracelsian Theory: Severinus and Erastus” that, “In France, the medical community was quickly split into Galenist and chemical camps that violently argued about the therapeutic usefulness of chemically prepared, mineral-based drugs.^[15] The Galenist camps depended heavily on the religious aspect of medicine, arguing that Paracelsian drug therapy was, “impious, even heretical.”^[16] The chemical camps pointed to the experimentations that had been done and often included people who were not previous supporters of alchemy. Michael Savonarola, a professor at the University of Ferrara was one such supporter who did not believe, “transmutation is possible because, in his opinion, alchemists are unable to change forms or species. He does, however, praise their ‘chemical’ services to medicine.”^[17] This movement away from the universal searches and towards more specific searches transformed alchemy from the wild goose chase into sciences such as chemistry and medicine.

In conclusion, alchemists received a bad reputation from their own secrecy, false alchemists such as con men and counterfeiters, and the Church. While this reputation was popular in their own times as well as being held by most people today, it was not deserved. Alchemists were philosophers who were trying to perfect themselves and improve the world around them. Indeed, as Brzezinski and Szydlo state, “It is perhaps time that alchemy was acknowledged as the mother of chemistry, rather than just a wayward cousin.”^[18]

[1] Richard Brzezinski and Zbigniew Szydlo, “A New Light on Alchemy,” *History Today* 47:1(1997), 17-24.

[2] *Ibid.*

[3] *Ibid.*

[4] Peggy Knapp, “The Work of Alchemy,” *Journal of Medieval and Early Modern Studies* 30:3 (2000), 575-600.

[5] *Ibid.*

[6] *Ibid.*

[7] Brzezinski and Szydlo, 17-24.

[8] *Ibid.*

[9] Knapp, 575-600.

[10] *Ibid.*

[11] Will. H.L. Ogrinc, “Western Society and Alchemy,” *Journal of Medieval History* 6 (1980), 103-32.

[12] *Ibid.*

[13] *Ibid.*

[14] Jole Shackelford, “Early Reception of Paracelsian Theory: Severinus and Erastus,” *Sixteenth Century Journal* 26:1 (1995), 123-136.

[15]Ibid.

[16]Ibid.

[17]Ogrinc, 103-32.

[18]Brzezinski and Szydlo, 17-24.
