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# Folklore, religion and natural philosophy: dragons in early modern German alchemy

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## Abstract

The dragons of early modern German alchemy are inheritors of a unique cultural blend of folklore, religious custom and natural philosophy that is unrivalled in Western Europe. Whether inspired by the artwork of the Lutheran Reformation, like Stefan Michelspacher's 'Anfang. Exaltation', or informed by the legends of dragon's hoards, such as the shapes suggested by Anna Maria Zieglerin for the philosophers' stone, serpentine monsters found within alchemical works possess more than their figurative chemical meanings. This article explores the range of cultural connotations these dragons held that served to expound their alchemical significance to an early modern German audience, as well as the ways in which alchemy brought these monsters to life through chemistry.

Serpentine creatures that range from the lowly snake to the terrifying dragon have long carried a host of symbolic connotations that have been explored since ancient history, fascinating not only authors and artists, but also those who have sought to explain and express their understanding of the natural world through pursuits like alchemy.<sup>1</sup> Within the Western world, we can trace the heritage of these beasts back to ancient Indo-European cultures whose legacy of monstrous creatures lives on to this day. Primordial serpentine forces of chaos like Tiamat, the Babylonian mother of monsters, have found themselves expressed again and again throughout human history. Indeed, echoes of Tiamat's battle with the storm god Marduk can be seen in later mythologies and belief systems such as Zeus's struggle with the monstrous Typhon, Thor's doomed fight with the world serpent Jörmungandr, Siegfried's slaying of Fafnir in the Norse sagas, and St Michael the Archangel's defeat of Satan in the Christian apocalypse as cultures continually reinterpreted and reinvented these creatures.<sup>2</sup> These tales, amongst countless others in religious heritage and

<sup>1</sup> Daniel Ogden, *The Dragon in the West, from Ancient Myth to Modern Legend*, Oxford: Oxford University Press, 2021.

<sup>2</sup> These mythological stories have been described as belonging to the narrative motif of the *Chaoskampf* – a primordial struggle between good and evil (also conceptualized as order and chaos) that manifests in many cultures and religions. The battles between Marduk and Tiamat in ancient Mesopotamia, Zeus and Typhon in ancient Greece, Thor and the World Serpent in early medieval Scandinavia, and various Christian saints against dragons representing Satan, are all examples of this motif. For the origins of *Chaoskampf* see Hermann Gunkel, *Schöpfung und Chaos in Urzeit und Endzeit: Eine religionsgeschichtliche Untersuchung über Gen. 1 und Ap. Jon 12*, Göttingen: Vandenhoeck und Ruprecht, 1895. For more on these various dragon myths see Ogden, op. cit. (1); Martin Arnold, *The Dragon, Fear and Power*, London: Reaktion Books 2018; Calvert Watkins, *How to Kill a Dragon: Aspects of Indo-European Poetics*, Oxford: Oxford University Press, 1995; Martin L. West, *Indo-European Poetry and Myth*, Oxford: Oxford University Press, 2007; Samantha Riches, *St George: Hero, Martyr and Myth*, Stroud: Sutton, 2000.

regional folklore, distinguish serpents and dragons as powerful symbols for eschatological evil, the overwhelming elemental forces of nature, and the darkest sides of humanity. These were creatures whose symbolic value allowed them to stand as exemplars of abstract concepts in the stories that employed them as an adversarial force, often with a warning regarding the sins of greed or the fickle power of nature. They are monsters in their truest sense, embodying the Latin verb *moneo*, meaning ‘to warn’, from which we derive the word ‘monster’.

Many disciplines of early modern natural philosophy, including alchemy, used serpentine creatures in a range of symbolic and metaphorical roles to illustrate contemporary understandings of the world, as well as studying them in their own right.<sup>3</sup> Whether this was as a point of reference, a direct representation of namesakes or an allegory for abstract processes, serpents and dragons provided authors with an especially useful multivalent means of expressing to their intended audiences information that was easily recognizable, albeit often requiring difficult interpretation.

Indeed, the long history of these symbols, not only within scientific pursuits but also within the general cultural zeitgeist of Europe, made them a valuable tool for communicating complex ideas in the simpler, contained package of a monstrous serpentine form. For alchemists, the ancient pedigree of these creatures within their own discipline (as well as in other related scholarly pursuits) made them an attractive subject for alchemical imagery. Alchemists used some of the most primal and universal connotations of serpentine creatures, namely their connection to elemental forces like fire, as we shall see in the works of Michael Maier (1568–1622), as well as more contemporary understandings of what these creatures stood for in the cultures that these alchemists were writing in, such as Stefan Michelspacher’s (fl. 1610s) religiously charged papal-crowned dragon bearing the hallmarks of Reformation dissent.<sup>4</sup> This was especially resonant within the German-speaking lands of the Holy Roman Empire, whose culture contained an especially rich vein of monstrous draconic heritage. Here, these creatures were traditionally linked with tales of greed and gold but had subtly evolved alongside the religious upheavals of the Reformation, gaining additional connotations of sin and ungodliness.<sup>5</sup>

<sup>3</sup> Contemporary studies on serpents and dragons include the experiments on snake venom conducted by Italian scholar Francesco Redi (1626–97) and his rival French apothecary Moyse Charas (1619–98), as well as related anatomical studies by men like Edward Tyson (1651–1708). Experiments were also conducted at this time regarding the power of snake stones, and many tracts were written regarding the alleged physical remains of dragons. For more on these topics see Jutta Schickore, ‘Trying again and again: multiple repetitions in early modern reports of experiments on snake bites’, *Early Science and Medicine* (2010) 15(6), pp. 567–617; M. Baldwin, ‘The snakestone experiments: an early modern medical debate’, *Isis* (1995) 86, pp. 394–418; Patrizia Catellani and Renzo Console, ‘Moyse Charas, Francesco Redi, the viper and the Royal Society of London’, *Pharmaceutical Historian: Newsletter of the British Society for the History of Pharmacy* (2004) 34, pp. 2–10; Edward Topsall, *The Historie of Serpents*, London, 1608; Philip Senter, Uta Mattox and Eid E. Haddad, ‘Snake to monster: Conrad Gessner’s *Schlangenbuch* and the evolution of the dragon in the literature of natural history’, *Journal of Folklore Research* (2016) 53(1), pp. 67–124; Athanasius Kircher, *Mundus Subterraneus, quo universae Denique naturae divitiae*, Rome, 1665, vol. 2.

<sup>4</sup> For more on the dragon motif in late medieval and early modern Europe, especially the ways in which contemporaries grappled with the motif, see Wes William, *Monsters and Their Meanings in Early Modern Culture: Mighty Magic*, Oxford: Oxford University Press, 2011; Jan Stirm, ‘Enter the dragon: desire and meaning in a true and wonderfull encounter’, *Early Modern Culture* (2016) 11, pp. 53–64; Marco Ruffini, ‘A dragon for the Pope: politics and emblematics at the Court of Gregory XIII’, *Memoirs of the American Academy in Rome* (2009) 54, pp. 83–105; Timo Rebschloe, *Der Drache in der mittelalterlichen Literatur Europas*, Heidelberg: Universitätsverlag Winter, 2014; Sara Kuehn, *The Dragon in Medieval East Christian and Islamic Art*, Leiden: Brill, 2011; Arnold, op. cit. (2); Markus May, Michael Baumann, Robert Baumgartner and Tobias Eder (eds.), *Den Drachen denken: Liminale Geschöpfe als das Andere der Kultur*, Bielefeld: Transcript, 2019; Peter J. Hogarth, ‘St George: the evolution of the saint and his dragon’, *History Today* (1980) 30(4), pp. 17–22; Thomas Honegger, *Introducing the Medieval Dragon*, Cardiff: University of Wales Press, 2019.

<sup>5</sup> Thomas O.R. Wood, ‘Serpents and dragons in early modern German religious culture’, doctoral thesis, University of Birmingham, 2023.

It is pertinent to note that alchemical imagery, due to being a far from universal language and thus being subject to regional variance, changed over time and according to individual ideas, offering us many different interpretations of the same symbols. As Lyndy Abraham has commented, what may be counted as somewhat different creatures such as serpents, worms and dragons could all be used interchangeably by alchemists.<sup>6</sup> These distinctions were confused both by the vague contemporary taxonomic divisions of these creature, as we shall see shortly, and by the specific desires of the alchemical illustrator who would reinterpret these symbols for their own ends. Indeed, some went so far as to combine draconic imagery with other alchemical symbols to create multifaceted glyphs that encouraged several layers of interpretation. As Angela M. Connolly has stated, the originality of alchemical imagery stems from the ‘way in which they [alchemists] extracted individual metaphorical elements from earlier illustrations recombining them through analogical associations and correspondences to create original, strange and unfamiliar images which are both attention-grabbing and thought-provoking’.<sup>7</sup> Alchemists certainly extracted a range of metaphorical elements from serpentine creatures to create, as Jennifer M. Rampling puts it, ‘figures devised by proponents of alchemy to evoke or elucidate various aspects of the art’.<sup>8</sup> In the case of serpents and dragons, they are often employed as part of a strategy to elucidate and emphasize certain chemicals or processes that are key to the Great Work.

Serpentine monsters of all varieties were chosen by alchemists for their highly symbolically charged nature, possessing as they did connotations unique to the alchemical arts but also ones rooted in ancient understandings of the natural world and cultural concepts derived from religion and folklore. While all alchemical imagery was chosen for its symbolic value, serpentine monsters in particular could commonly be found playing central or important roles, whether that was representing vital chemicals in the alchemical process like mercury and sulphur, standing in for the element of fire and fiery processes, or appearing as the ancient and all-encompassing symbol of the eternal ouroboros. For this reason, they were important to alchemists as vital and specific cyphers that could be used to explore, explain and unlock the secrets of the Great Work.

Of all the attempts to understand the natural world that medieval and early modern people embarked upon, alchemists were particularly adept at utilizing serpentine monsters as part of their rhetorical and symbolic strategies in alchemical imagery. While scholars of natural history would struggle to catalogue these monsters as real creatures, slowly rejecting them from the natural order over the course of the seventeenth century, and astronomers and astrologers would rely on serpentine creatures mostly as convenient shapes chosen by the ancients for mapping the stars, alchemy provided an experimental space where the cultural connotations of the dragon were translated and transmuted into chemical experiments. Their symbolic meanings aligned with alchemical process, and the cyphers of the dragon translated into chemical knowledge and experiences where aspects of these beasts of folklore and religion came to life within the alchemist’s work. Though believed to be real – indeed some even claimed to have seen them – these serpentine creatures did in fact occupy a liminal space in the early modern mind for no one ever truly experienced a living dragon, which proved to make rigorous scientific study of them problematic. Though not real, in alchemical imagery, through the chemistry they embody and in the practical experimentation that follows, dragons gained a certain fixture in reality. The alchemist could observe the lustre of their hides within a flask, smell their pungent sulphurous odour emanating

<sup>6</sup> Lyndy Abraham, *A Dictionary of Alchemical Imagery*, Cambridge: Cambridge University Press, 2001.

<sup>7</sup> Angela M. Connolly, ‘Cognitive aesthetics of alchemical imagery’, *Journal of Analytical Psychology* (2013) 58(1), pp. 4–33, 20.

<sup>8</sup> Jennifer M. Rampling, ‘Art and representation: the alchemical image in the Islamic and Christian Middle Ages’, in C. Burnett and S. Moureau (eds.), *A Cultural History of Chemistry in the Middle Ages*, London: Bloomsbury, 2022, pp. 149–78, 153.

from their glassware, and feel the heat of their fiery breath in the crucible. Culture and chemistry thus became entwined as they served to extend and reinforce ideas about one another. Such sensory experiences of monsters were codified outside the laboratory in the form of imagery, providing a trained alchemist with visual tokens that proffered clues to the things they should expect to see, feel, hear, taste and smell during their experimental process.

In keeping with alchemy's fondness for dualities, this article will thus demonstrate not only that alchemical dragons embodied symbolic representations of the chemical endeavour, but also that they existed simultaneously as a means by which cultural associations such as wealth, greed and power could be expressed and explored by alchemists reflecting upon the nature and processes of their art as well as their own personal identity. The myriad ways in which alchemists were exposed to dragons and the multitudinous meanings of these creatures within scientific pursuits, culture and religion will be explored, with the article then turning to several case studies to examine how these monsters were translated into alchemical imagery and how alchemy brought them to life. Finally, this article will consider how the body of the dragon, as understood through these previous explorations, was coopted by alchemists as an expression of their identity.

### Serpentine monsters in the alchemist's world: science, culture and religion

Before discussing the place of dragons within alchemical literature, it is perhaps prudent to first establish their place in the scientific and cultural landscape of the late medieval and early modern world. In the premodern world, a range of different serpentine creatures (both real and imagined) were believed to have existed as a family of related species. These creatures shared a few traits such as their sinuous reptilian bodies, their verminous ranking amongst the world's beasts, and their usual affiliation with evil and the Devil. They ranged from the simple snake to the so-called 'king of serpents', the basilisk, and included a vast range of monstrosities like lindwurms and wyverns that we would generally today term different kinds of dragon. Numbers of limbs, the ability to fly and supernatural powers were variously attributed to different forms of these creatures, with early taxonomic attempts to categorize them revealing the difficulty of reconciling hundreds, if not thousands, of years' worth of legends that did not all align with one another on the precise biology of these imagined beasts. Dragons in all their forms were believed to be real by premodern people, having been documented in history, mythology and folklore for hundreds of years, and as scholars attempted to classify the animals and plants of the natural world so too did they attempt to fit serpentine monsters into their encyclopedias.

One such early modern scholar who took part in this enterprise was Swiss naturalist Conrad Gessner (1516–65). In his *Historia Animalium* (1551–8), the final volume of which was translated into German as the popular *Schlangenbuch* (1589), a sweeping encyclopedic discussion of the animal kingdom, Gessner is unable to separate out the many different kinds of dragon he encountered in his research for the fifth volume in any particularly granular fashion. Gessner claims that, generally speaking, there were only two kinds of dragon: swamp-dwelling dragons and mountainous cave-dwelling dragons.<sup>9</sup> Other attributes within these two groups, such as colour, the presence of wings or the ability to breathe fire, were entirely variable and flying serpents are even included as a related but different class of creature to dragons and terrestrial snakes.<sup>10</sup> Within the study of different strands of natural

<sup>9</sup> Conrad Gessner, *Schlangenbuch*, 1589; Senter, Mattox and Haddad, op. cit. (3), pp. 89–91. Gessner writes, 'Those of one kind [of dragon] stay in the mountains and mountainous areas, are large, speedy, fast, and have a comb; the other live in bogs and swamps, are slow, lazy, and comfortable, and no comb grows for them.'

<sup>10</sup> Senter, Mattox and Haddad, op. cit. (3), pp. 89–91, 108–10.

philosophy, these varieties of serpentine creature were represented and used as symbolic expressions of other ideas, and, due to their sometimes imprecise or ill-defined differences, several different kinds of serpentine creature could all convey the same ideas. A given creature could have many limbs or none at all; so long as it presented a generally monstrous serpentine appearance, it often retained all the same connotations of this class of creature as a whole. The malleable physical appearance of dragons was further augmented by their often chimeric and ill-defined physiology being leveraged in concert with additional elements of alchemical imagery to create creatures whose body appeared bizarre yet was carefully composed and highly specific, containing within it numerous mutually reinforcing ideas.<sup>11</sup>

The malleable and distinctly hybrid bodies of serpentine monsters were thus enticing to alchemists, fond as they were of multivalent symbols and dual interpretations. However, as well as the body of these creatures being especially malleable and often distinctly hybrid in nature to begin with, alchemists also chose to use serpents and dragons in their allegories and images due to the ancient pedigree of these symbols as a means of expressing ideas about the natural world. Snakes, with dragons being the more fantastical imagined 'evolved' form of the snake, have symbolic connotations related to the understanding of the material universe that date to prehistory and are as much used in the same circumstances today as they were in the early modern period. One of their oldest associations is with astronomical observations that dated back to the ancient world, and were utilized by astrologers, alchemists and physicians (amongst others) in the early modern period. The North Star between the fourth and second millenniums BC was Thuban, which sits within the serpentine constellation Draco. This positioning made Draco as well known to premodern astronomers as the Pole Star Polaris is to stargazers today, but lunar orbits could also be calculated relative to the draconic constellation. The head of Draco is known as the 'ascending' node whilst the tail is the 'descending' node and observations of the moon passing through these two nodes can be used to calculate lunar orbits, eclipses and so-called 'draconic months'.<sup>12</sup>

One of the best-known early modern examples of these ancient astronomical associations with dragons can be found in Petrus Apian's sixteenth-century *Astronomicum Caesareum* (1540), of which only approximately a hundred copies were made. These copies were, however, distributed across Europe and presented to notable figure such as the Holy Roman Emperor Charles V (1500–58) and his brother Ferdinand (1503–64).<sup>13</sup> This work proved impressive enough for the emperor to make Apian a *Reichsritter*, appeared in the libraries of famed astronomers like Tycho Brahe (1546–1601), and provides a visually stunning example of rotating lunar dragon calculators. The title page of the book depicts one such diagram (Figure 1), which reappears later in the work and represents perhaps the most elaborate of all the volvelles in the volume. A second, similar diagram also appears

<sup>11</sup> Amongst the dragons of the early modern period one can find amongst various legends and artworks serpentine creatures that conform to all of Isidore of Seville's (c.560–636) definitions of monstrosity: 'hypertrophy of the body, atrophy of the body, excrescence of bodily parts, superfluity of bodily parts, deprivation of parts, mixture of human and animal parts, animal births by human women, mislocation of organs or parts in the body, disturbed growth, composite beings, hermaphrodites', which speaks to just how broad a term 'dragon' really is. Translation from Isidore of Seville, *The Etymologies of Isidore of Seville*, tr. Stephen A. Barney, W.J. Lewis, J.A. Beach, Oliver Berghof and Muriel Hall, Cambridge: Cambridge University Press, 2006, pp. 243–6.

<sup>12</sup> Dimitrie Olenici, 'The rosette of spiral diagrams as produced by the Saros series of solar eclipses', *Romanian Astronomical Journal* (2020) 30(2), pp. 121–33; Kuehn, op. cit. (4), pp. 131–44.

<sup>13</sup> Petrus Apian, *Astronomicum Caesareum*, Ingolstadt, 1540; Alinda van Ackooij, 'Stephan Michelspacher', in J. Bouman and C. van Heertum (eds.), *Divine Wisdom – Divine Nature: The Message of the Rosicrucian Manifestoes in the Visual Language of the Seventeenth Century*, Amsterdam: In de Pelikaan, 2014, pp. 113–24.





**Figure 1.** The title page to P. Apian, *Astronomicum Caesareum* (Ingolstadt, 1540), via Wikimedia Commons, public domain.

later in the work. These volvelles consist of a disc of paper in the shape of a large dragon that can be moved with threads. By spinning the dragon's head (the ascending node) and tail (the descending node), one can calculate the position of these nodes on a given date. Reading the moon via its positioning between the head and tail of Draco was a well-known

astronomical method across Europe in the early modern period. Indeed, Gessner remarked in his *Schlangenbuch*, 'The interpreters of the stars call the points where the moon takes its track across and over the sun's course a dragon. The upper part is called the dragon head, the bottom part the dragon tail'.<sup>14</sup> Astronomical associations were as much a part of the dragon's reality as were its habitat and physiological features.

As well as this use in astronomy, serpents and dragons were also prominent in medicine, having long served as a symbol of wisdom and healing. A single serpent appears on the rod of Asclepius, a Greek god associated with healing and medicine, for instance, which remains a commonplace symbol in the medical profession to this day. The similar symbol of the caduceus, two serpents wrapped around a short-winged staff, is also used in medicine today and was carried by Hermes, the messenger of the gods in Greek mythology. This association with Hermes carries through to the legendary alchemical figure of Hermes Trismegistus, as well as the Roman god Mercury and the planet and chemical that bear his name. In this way, early modern alchemists, astrologists and astronomers connected these ideas and, as we shall see later, monsters like dragons could sometimes be seen to represent mercury in their works. However, it is important to note that while these ancient affiliations would have been familiar to alchemists and some ideas influenced these different strands of understanding the natural world, the imagery of alchemy had its own traditions that were not wholly borrowed from other disciplines and the serpentine monsters of alchemy sought to embody specific chemical and allegorical meanings rather than simply acting as a guide for reading the stars or being a cypher for medical practitioners.

Beyond these ancient astronomical and medical associations, serpents and dragons also flourished symbolically within contemporary culture, providing additional layers of meaning for the alchemists who would employ them in their imagery. The area of this study, the German-speaking lands, was especially rich in draconic influences from numerous, and sometimes overlapping, sources that made their subsequent employment by artists, authors and scholars particularly potent. Alchemists working within this part of Europe were exposed to cultural influences from more than just the classical history and mythology that abounded within educated spheres. While it would be uncommon for a scholar of this period not to be familiar with accounts from the ancient world, such as that of Pliny the Elder, who described the eternal enmity between elephants and dragons as they battled in Africa, there were also other sources featuring serpentine monsters that would have influenced them.<sup>15</sup>

Nordic and Germanic legends, for instance, which often saw themselves printed in late medieval and early modern *Heldenbücher*, or hero-books, feature serpentine creatures of many kinds as monsters to be slain by their heroes. These range from the reclusive treasure-hoarding, wyrm-like Fafnir, who crawled upon the belly, to winged fire-breathing environmental devastators who roamed the countryside causing chaos, such as those who

<sup>14</sup> Senter, Mattox and Haddad state in their footnotes to their translation of Gessner's *Schlangenbuch* that they were unable to find Gessner's source for his statements on the lunar dragon, but it is likely Gessner drew from the same astrological traditions as Apian did. Indeed, Agrippa von Nettesheim comments on this ancient heritage in Heinrich Cornelius Agrippa von Nettesheim, *De occulta philosophia*, 1510. Translation from Senter, Mattox and Haddad, op. cit. (3), pp. 67–124, 102.

<sup>15</sup> 'Africa produces elephants ... But it is in India that produces the largest, as well as the dragon, which is perpetually at war with the elephant, and is itself so enormous a size, as easily to envelop the elephants with its folds, and encircle them in its coils. The contest is equally fatal to both; the elephant vanquished, falls to the earth, and by its weight, crushes the dragon which is entwined around it.' This quote is the source of countless illustrations in medieval manuscripts displaying a dragon entwined around an elephant and many travellers in the European age of exploration reported seeing dragons in Africa following Pliny's example. Pliny the Elder, *Naturalis Historia*, 77–9 AD, Book VIII, Chapter XI. Translation from *The Natural History of Pliny* (tr. John Bostock and Henry T. Riley), London: Henry G. Bohn, 1855, vol. 2, p. 259.

menaced the hero Ortnit. Late medieval literature and early modern print recounting the stories of famous Germanic cultural figures like Siegfried, Dietrich von Bern and Ortnit were not only extremely popular in the sixteenth and seventeenth centuries across the German-speaking lands; they also promulgated the idea of dragons being the antagonist of a heroic tale.

Amongst the most famous of these *Heldenbücher* were the various renditions of the tale of Siegfried, including the *Nibelungenlied* and *Das Lied vom Hürnen Seyfrid*, where great treasures and loves were won by the death of a dragon, and the adventures of Dietrich von Bern, which saw this legendary afterlife of Theodoric the Great challenge dwarfs, giants and numerous dragons in his tales of heroism.<sup>16</sup> Dragons were especially associated with treasure, usually gold and jewels, as with the draconic monster Fafnir's great horde that would be claimed by Siegfried. These creatures, and their defeat, then, were inextricably tied to material wealth, usually in a distinctly negative way. Such connotations transcended the *Heldenbücher* tradition and also permeated local folklore, with various Germanic and Eastern European tales describing thieving dragons that stole gold, milk and produce. Such tales held particular prominence during the European witch crazes, with serpents and dragons facilitating a kind of economic witchcraft that the accused allegedly perpetrated against their neighbours.<sup>17</sup> Such dragons were also usually invariably linked to the abduction of female royalty. In *Das Lied vom Hürnen Seyfrid*, our hero's final challenge is a dragon who kidnapped the princess Kriemhild. Similarly, Dietrich von Bern kills dragons on his way to rescue the dwarf queen Virginal, while the formula is altered slightly in the tale of Ortnit, where dragons are visited upon his kingdom in retribution for the titular hero's abduction and baptism of a heathen princess, laying waste to the country and killing Ortnit before being killed in turn by the hero Wolfendietrich in a different tale.<sup>18</sup>

As well as the monsters of these heroic and folkloric tales, contemporary audiences would also have been familiar with the villainous serpents and dragons that appear throughout Christian theology, with such creatures featuring in the Bible, in hagiographies and in various religious traditions that spanned all of Europe. These serpentine beasts were either the physical form of Satan or his proxy and generally caused evil wherever they went. Satan-as-serpentine-creature bookends the Bible itself, appearing as the serpent who tempts Eve in the Garden of Eden in Genesis, and as the Great Red Dragon in Revelation where he is laid low by St Michael the Archangel. Satan also appears as a dragon in the story of St Margaret of Antioch, who is swallowed by the draconic form but whose faith proves too powerful for the Devil, allowing her to escape from his stomach. Most famously, St George faces a dragon who threatens to eat a princess and who represents the forces of chaos and evil.<sup>19</sup> The dragon was thus a common trope within religious and scriptural works, denoting an evil and malevolent force over which Christianity would triumph.

<sup>16</sup> Siegfried Holzbauer (ed.), *Das Lied vom Hürnen Seyfrid*, Klagenfurt: Wieser Verlag, 2001. For more on these stories see Elisabeth Lienert, *Mittelhochdeutsche Heldenepik*, Berlin: Erich Schmidt Verlag, 2015; Rebschloe, op. cit. (4); Victor Millet, *Germanische Heldendichtung im Mittelalter*, Berlin: De Gruyter, 2008; Joachim Heinze, *Einführung in die mittelhochdeutsche Dietrichepik*, Berlin: De Gruyter, 1999; Elisabeth Lienert, Elisa Pontini and Katrin Schumacher (eds.), *Virginal. Goldemar*, Berlin: De Gruyter, 2017.

<sup>17</sup> Johannes Dillinger, 'Treasure and Drache: ritual and economy in the early modern period', *The Ritual Year* (2015) 10, pp. 453–9; Dillinger, 'Money from the spirit world', in Mary Lindeman and Jared Poley (eds.), *Money in the German-Speaking Lands*, New York: Berghahn, 2017, pp. 10–25.

<sup>18</sup> For more in the Ortnit manuscripts and their place within the culture of German heroic poetry see Walter Kofler (ed.), *Ortnit und Wolfdietrich D. Kritischer Text nach Ms. Carm. 2 der Stadt- und Universitätsbibliothek Frankfurt am Main*, Stuttgart: S. Hirzel, 2001; Walter Kofler (ed.), *Ortnit und Wolfendietrich A*, Stuttgart: Hirzel Verlag, 2009; John W. Thomas (tr. and ed.), *Ortnit and Wolfdietrich: Two Medieval Romances*, New York: Camden House, 1986.

<sup>19</sup> For more on the legend of St George, especially the diametrically opposed forces of saint and dragon, see Riches, op. cit. (2). It has been suggested that the story of St George and the dragon can be interpreted in an alchemical way, with dragons embodying in ancient tales the four elements. See Estella Alma Maré, 'There is no



In the early modern period, these narratives became coopted by religious Reformers who likened their struggles against Catholicism with those of the saints battling dragons. Indeed, following the Diet of Worms, Martin Luther (1483–1546) was depicted as St George in Lucas Cranach the Elder's (1472–1553) *Martin Luther as Junker Jörg* (1521–2), and many years later Cranach's student Heinrich Göding the Elder (1531–1606) repeated the association between Reformer and dragon slayer in his *Martin Luther in Patmos* (1598).<sup>20</sup> We see the adoption of the dragon-slaying narrative taken up by Reformers in the none-too-subtly-titled woodcut by Peter Gottland (1501–c.1572) *St George and the Dragon: Allegory of the Triumph of the New Faith over the Old* (1552), depicting the Christ child in the role of St George slaying a monstrous dragon that bore the crowned head of the Pope alongside the other perceived enemies of Christianity: the Ottoman Turks and Lucifer.<sup>21</sup> Such papal connotations were not unprecedented. Protestant artists like Lucas Cranach the Elder had been putting papal tiaras on the heads of dragons since the publication of Luther's *Septembertestament* in 1522, which depicted Antichrist as a papally crowned dragon in the Book of Revelation, a trend that would continue into the seventeenth century.<sup>22</sup>

The serpentine monsters that appeared within contemporary culture and religious discourse were thus largely villainous, greedy, princess-stealing sinners who brought chaos and destruction with them wherever they went and were consequently doomed to be slain by a virtuous hero. When combined with their alternative iterations in astronomy and medicine, it thus becomes clear that this family of serpentine creatures had over the centuries become a complex beast of varying symbolic powers, at once the embodiments of evil that dragon slayers had to prevail against and a symbol of astronomical calculations and medical practice. This complexity can be seen within the Bible itself, Satan appearing as a dragon and being explicitly revealed as the serpent of Eden in Revelation 12:9, whilst in John 3:14–15 Jesus is directly likened to a serpent and instructs his disciples to be 'wise as serpents' in Matthew 10:16.<sup>23</sup> It is important to remember, then, that the symbols that alchemists were drawing upon were complex and required a great deal of context to fully understand them, often having interpretations as flexible as their inspirations were variable, with many chances for misunderstandings to arise as a result as alchemical texts were copied, reinterpreted and iterated upon. Alchemy, as a science steeped in the theological and symbolic underpinnings of Christianity, and notably affected by doctrinal changes in religion in this period, could therefore variously draw upon dragons who could be wise like Jesus or despicable like Satan.<sup>24</sup> Yet so too could they draw upon many different dragons, from those who lived amongst the stars, to ones that were elementally powerful, or even those that were economically active in malicious and greedy ways.

Such overtly evil serpentine monsters can be found within the works of some alchemists, such as the basilisks that populate the treatises of Paracelsus (c.1493–1541). This 'king of serpents' was amongst the lowest of the low, being placed in the most detestable and

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hero without a dragon: a revisionist interpretation of the myth of St. George and the dragon', *Religion and Theology* (2006) 13(2), pp. 195–203.

<sup>20</sup> Lucas Cranach, *Martin Luther as Junker Jörg* (1521–2); Hans Göding the Elder, *Martin Luther in Patmos* (1598). In the case of the former artwork, the implication was that Luther had returned from 'slaying' his theological opponents at the Diet, and despite Luther immediately going into hiding at Wartburg Castle he was presented as a conquering hero.

<sup>21</sup> Peter Gottland, *St George and the Dragon: Allegory of the Triumph of the New Faith over the Old* (1552).

<sup>22</sup> Lucas Cranach, 'Illustration to Apocalypse 11', 'Illustration to Apocalypse 13' and 'Illustration to Apocalypse 16', in *Septembertestament* (tr. Martin Luther), Wittenberg, 1522; Robert W. Scribner, *For the Sake of Simple Folk: Popular Propaganda for the German Reformation*, Cambridge: Cambridge University Press, 1981; Wood, op. cit. (5).

<sup>23</sup> For more on the alleged 'Christianization' of the serpent as a symbol see James H. Charlesworth, *The Good and Evil Serpent: How a Universal Symbol Became Christianized*, New Haven, CT: Yale University Press, 2010.

<sup>24</sup> Zoe Screti, 'The relationship between religious reform and alchemy in England, 1450–1650', doctoral thesis, University of Birmingham, 2022.

verminous ranks of the hierarchy of all things by botanist Adam Lonitzer (1528–86) in his popular 1557 *Kreuterbuch*.<sup>25</sup> Birthed from the foul and unnatural union of rooster and snake or toad (not too dissimilar to the related cockatrice), the resulting spawn allegedly possessed extraordinary venomous capabilities that were present not just in its physical body but also in its gaze, which could kill any who looked into its eyes. William R. Newman's 2020 article on basilisks and women in Paracelsus and Pseudo-Paracelsus has revealed how Paracelsus used the traits ascribed to the basilisk in contemporary folklore as a metaphor for two different strands of thought.<sup>26</sup> In one case, Paracelsus uses the unnatural birth of the basilisk from a rooster's egg as a means of explaining processes of unnatural generation in general, and in the other he uses the likening of the basilisk's deadly gaze to the alleged ability of menstruating women to break mirrors with a stare as a means of connecting the female imagination with contagious disease.

The works of Pseudo-Paracelsus are no less damning of women. In *De Natura Rerum* (1537), for instance, the basilisk is described as a form of evil alchemical homunculus. Whereas the alternately good homunculus was a triumph of the alchemical art, being born from incubated semen and possessing extraordinary knowledge, the foul basilisk was generated from menstrual blood and thus its deadly gaze was seen to be an embodiment of the perceived character of a menstrual woman. Pseudo-Paracelsus says of this power, 'It must be known, then, that it has such a characteristic and origin from impure women, as was said above. For the basilisk grows and is born out of and from the greatest impurity of women, from the menses.'<sup>27</sup> Indeed, the concept of a shared poisonous nature of serpentine monsters like the basilisk and menstrual women could be found outside alchemical processes described by Pseudo-Paracelsus, most notably in Hans Baldung's (c.1484–1545) 1515 engraving of *The Witch and Dragon*, whose subjects have long been a topic of discussion for historians of witchcraft for how it unites sixteenth-century medical beliefs about women's bodies with the folklore of monsters and 'poison-maidens'.<sup>28</sup> In these works, therefore, we can see the villainous serpentine monster who causes evil, spreads poison and is especially associated with women manifest within the works of an alchemist. However, this was far from how many other alchemists chose to employ serpentine creatures within their work.

## Culture and chemistry: making alchemical monsters

Most alchemical treatises preferred to rely on some of the more traditional connotations of these monsters that we have discussed so far, as well as a few specific chemicals and

<sup>25</sup> Adam Lonitzer, *Kreuterbuch*, 1577, p. 580. For more on this work see Kathleen Crowther-Heyck, 'Wonderful secrets of nature: natural knowledge and religious piety in Reformation Germany', *Isis* (2003) 94(2), pp. 253–73. Alongside serpents, basilisks and dragons, Lonitzer ranks vermin, toads, scorpions and spiders as the lowest of animals. Humans naturally appeared at the top of the list, followed by those animals which had been domesticated and were of use to humanity. Those detestable creatures were deemed to be of little to no value.

<sup>26</sup> William R. Newman, 'Bad chemistry: basilisks and women in Paracelsus and Pseudo-Paracelsus', *Ambix* (2020) 67(1), pp. 30–46. See also William R. Newman, *Promethean Ambitions: Alchemy and the Quest to Perfect Nature*, Chicago: University of Chicago Press, 2004; Sven Limbeck, "'Ein seltzam wunder und monstrum, welches beide mannlichen und weiblichen geschlecht an sich hett": Teratologie, Sodomie und Allegorese in der Medienkultur der frühen Neuzeit', in *'Die sünde, der sich der tiuvel schamet in der helle': Homosexualität in der Kultur des Mittelalters und der frühen Neuzeit* (ed. Lev Mordechai Thoma and Sven Limbeck), Osfildern: Thorbecke, 2009, pp. 199–237.

<sup>27</sup> Pseudo-Paracelsus, *De natura rerum*, 1572, translation from Newman, op. cit. (26), pp. 30–46, 32.

<sup>28</sup> Hans Baldung, *The Witch and Dragon*, 1515. For more on the discussion of this work of art and on the trope of the 'poison-maiden' see Charles Zika, *Exorcising Our Demons: Magic, Witchcraft, and Visual Culture in Early Modern Europe*, Leiden: Brill, 2003, p. 290; Katharina Siefert, 'Hans Baldung Griens Karlsruher Hexenzeichnungen: Eine Neuinterpretation', *Kritische Berichte* (1997) 25, pp. 69–77; Yvonne Owens, 'Pollution and desire in Hans Baldung Grien: the erotic spell of the witch and dragon', in A. Pollali and B. Hub (eds.), *Images of Sex and Desire in Renaissance Art and Modern Historiography*, London: Routledge, 2017, pp. 344–64.

chemical processes that would have been more obscure to a casual observer. Indeed, serpentine monsters, especially those that one would classify as a kind of dragon, usually stand in pieces of alchemical imagery as a cypher for sulphur and mercury (Nicholas Flamel ascribes sulphur to a wingless dragon, and a winged serpent to mercury/quicksilver), as elemental concepts like fire which dragons have repeatedly been associated with in folklore, or simply as the ancient symbol representing the cycle of life, death and rebirth – the ouroboros.<sup>29</sup>

These three symbolic alchemical aspects of serpentine monsters were regularly used within the works of German-speaking scholars, and we can in fact see an example of all three of these metaphorical representations utilized within the same work. The one-time councillor to Holy Roman Emperor Rudolph II (1552–1612), physician, emblematiser and alchemist Michael Maier (1568–1622), included dragons several times in his 1618 emblem book, *Atalanta Fugiens*.<sup>30</sup> First within this work, on page 65, we encounter a dragon holding its tail within its own mouth (Figure 2), forming an ouroboros with its body and representing the macrocosmic cyclical nature of the world that alchemists were required to understand within the microcosm of their laboratories. Next, we find on page 109 a winged dragon caught between a male figure crowned with the sun and a female figure crowned with a crescent moon (Figure 3); representing mercury, gold and silver respectively, their bodies are cyphers for key parts of the alchemical process. Finally, on page 209, we find a dragon standing for earth and fire entwined around a woman representing air and water within a grave, their forms uniting the four elements (Figure 4).

Of the associations we can see within *Atalanta Fugiens*, that with mercury (one of the most vital chemicals in the entire alchemical pursuit) was particularly strong in other works produced by German alchemists of this period. Indeed, a diagram of the ‘philosophical egg’ in Herbrandt Jamsthaler’s *Viatorum Spagyricum* (1625) utilizes a winged serpentine creature to represent the role of quicksilver within the alchemical art.<sup>31</sup> The centrality of this creature alludes to the importance of this chemical to the alchemical craft, revealing to the learned observer of this imagery the role of quicksilver in the chemical process, it being a key ingredient for the creation of the philosophers’ stone. Notable Hermetic alchemist Heinrich Khunrath (1560–1605) similarly utilized mercurial dragons throughout his *Amphitheatrum sapientiae aeternae* (1602), especially within his rendering of the alchemical fortress. This image depicts defensive fortifications in the contemporary *trace italienne* style and has a dragon situated at its centre as the central ‘keep’ of alchemy, having the ability to marry and impregnate itself, give birth and kill all living creatures, such was its power and centrality to the Great Work.<sup>32</sup> Here, the dragon’s raw power is emphasized. After all, this was a monster who devastated the countryside and slew heroes in legends like that of Ortnit, where two such monsters ravage the Kingdom of Lombardy and devour countless would-be dragon slayers, including the eponymous hero.<sup>33</sup>

No creature could be better suited to representing such a volatile substance within the alchemical process, dragons being fiery not only in their breath and temperament, but also in their blood, as it was believed that the bodily substances of dragons were ‘hot’ and possessed of strange qualities. Often, the flesh and blood of a dragon was depicted as being poisonous or acidic, posthumously causing great injury to, or the death of, their slayers when not handled accordingly. The legendary Swiss

<sup>29</sup> Abraham, op. cit. (6), p. 59; Nicholas Flamel, *Le Livre des figures hiéroglyphiques*, 1612.

<sup>30</sup> Michael Maier, *Atalanta Fugiens*, Oppenheim, 1618, pp. 65, 109, 209.

<sup>31</sup> Herbrandt Jamsthaler, *Viatorum Spagyricum*, 1625, p. 75.

<sup>32</sup> Heinrich Khunrath, *Amphitheatrum sapientiae aeternae*, Hamburg, 1602. For more on this work see Peter Forshaw, “Alchemy in the amphitheatre”: some consideration of the alchemical content of the engravings in Heinrich Khunrath’s *Amphitheatres of Eternal Wisdom* (1609), in Jacob Wamberg (ed.), *Art and Alchemy*, Copenhagen: Museum Tusculanum Press, 2006, pp. 195–220.

<sup>33</sup> For more on this legend see Kofler, op. cit. (18); Thomas, op. cit. (18).



Figure 2. Alchemical dragon in M. Maier, *Atalanta Fugiens* (Oppenheim, 1618), p. 65, via Wikimedia Commons, public domain.

knight Heinrich von Winkelried is one such example; raising his sword above his head in celebration of the dragon's death, he allowed the monster's blood to drip down onto his flesh and poison him. German polymath Athanasius Kircher (1602–80) relates a similar contemporary story about a man encountering and slaying a dragon in the coastal marshes near Rome in 1660, who also died from the volatile blood





Figure 3. Alchemical dragon in Maier, *Atalanta Fugiens*, op. cit., p. 109, via Wikimedia Commons, public domain.

of the monster.<sup>34</sup> In alchemy, this somewhat supernatural, powerful and extraordinarily dangerous quality of the dragon is given chemical form in mercury and sulphur, and elemental form in fire. The prominent role played by these chemical ‘dragons’ in the alchemical pursuit, emphasized by Khunrath at the centre of his fortress image, allowed practising alchemists to, in essence, engage with the same deadly substances that men like Heinrich von Winkelried did. Though not dragon slayers, alchemists still experienced and

<sup>34</sup> Athanasius Kircher, *Mundus Subterraneus, quo universae Denique naturae divitiae*, Rome, 1665, vol. 2, p. 90.



Figure 4. Alchemical dragon in Maier, *Atalanta Fugiens*, op. cit., p. 209, via Wikimedia Commons, public domain.

contended with the same hideous smells, heat and poisonous fluids and fumes as those who battled monsters, though in many ways the alchemist performed a contrasting function by bringing some sensory aspect of dragons to life rather than slaying or subduing them.

From the same alchemical work, we can also see an 'ego draco sapientum' in the middle of the image titled 'Tu ne cede malis sed contra audentior ito' formed into an ouroboros and

holding a shield that states that the wisest and most secret spirits of the world are, like the ouroboros; quickened, generated, regenerated and preserved, outlining the *opus magnus* in the very body of the serpentine dragon.

When not serving as a symbol for mercury, serpentine monsters in alchemy reflected the fiery, greedy and awe-inspiring creatures we have seen in folklore and religion. We can see, for example, a dragon, or more specifically its smoke, representing saltpetre in the *Viridarium Chymicum* (1624) of Bohemian physicist and alchemist, and pupil of the aforementioned Maier, Daniel Stolz von Stolzenberg (1600–60).<sup>35</sup> It seems only fitting that a dragon should stand as a cypher for this component of gunpowder, the explosive nature of this chemical bringing to mind draconic fire. This relationship was reinforced by the numerous firework devices in the shape of dragons that were utilized in the festivals of early modern Europe, with some of the best examples being found in Friedrich Mayer's *Büchsenmeister und Feuerwerksbuch* (1594), where the draconic form and gunpowder reactions were brought together to create serpentine effigies that spewed smoke and flame.<sup>36</sup> For a popular audience, these firework devices played a similar role to the alchemical imagery of dragons in that they embodied, in many ways, the sensory chemical experience of monsters. Here, a blend of chemistry and engineering underpinned and extended a cultural expression. The reactions of the gunpowder would create heat that sears the skin, and bright sparks and flame delight the eyes, whilst the whole scene is wreathed in the smell and smoulder of acrid smoke. The dragon, in firework form, thus comes to life in a fashion that is somewhat less esoteric, but no less powerfully affective on the observer, than the dragons experienced by alchemists. The thematic association between dragons, saltpetre, gunpowder and fire was therefore expressed in legend, festival effigies and alchemy; the elemental-chemical nature of the dragon was well understood by those who beheld it. While the untrained eye may be able to discern such associations when examining an alchemical manuscript, it would require a master alchemist versed in the principles of the Great Work to understand the dragon's place within larger alchemical processes.

However, when working for courtly patrons less versed in alchemical matters, the simple-to-understand connotations of the draconic form worked to certain advantages. We can see this in the candidacy these creatures had for the shape of the philosophers' stone, for instance. Working at the court of Duke Julius of Brunswick-Lüneburg (1528–89), alchemist Anna Maria Zieglerin (c.1550–75) proposed casting the philosophers' stone into certain animal shapes. While these shapes did not elucidate the chemical process of alchemy, they instead alluded to the end product of the endeavour. She wrote, 'Cast it into the shape of a lion, lindworm, dragon's head or whatever similar thing pleases you'.<sup>37</sup> Each of these forms held powerful symbolic value, being metaphors for wealth and power that would doubtlessly appeal to her patron. The lion had a twofold appearance – occurring on the arms of the Duchy of Brunswick-Lüneburg as a powerful, regal beast associated with her patron, but also referring to the golden 'lion's blood' oil that Zieglerin used in her experiments.<sup>38</sup> The lindworm and dragon's head, on the other hand, are clearly drawing upon the

<sup>35</sup> Daniel Stolz von Stolzenberg, *Virium Chymicum*, Frankfurt, 1624.

<sup>36</sup> Friedrich Mayer, *Büchsenmeister und Feuerwerksbuch*, 1594, pp. 293, 295, 305. For more on this kind of gunpowder effigy in early modern Europe see Philip Steadman, *Renaissance Fun: The Machines behind the Scenes*, London: UCL Press, 2021.

<sup>37</sup> Translation from Tara Nummedal, *Anna Zieglerin and the Lion's Blood: Alchemy and End Times in Reformation Germany*, Philadelphia: University of Pennsylvania Press, 2019, p. 84: 'gißen in gestaltte eynß leven lyndtwurmer trachen kopffe oder waß dier gefelte ist eben gleyche'.

<sup>38</sup> For more on Zieglerin's work and methodologies see Tara Nummedal, 'Alchemy and religion in Christian Europe', *Ambix* (2013) 60(4), pp. 311–22; Nummedal, 'Alchemical reproduction and the career of Anna Maria Zieglerin', *Ambix* (2001) 48(2), pp. 56–68.

symbolic associations between these creatures and the accumulation of wealth. Lindworms, those creatures like Fafnir whose form was especially serpentine, and dragons more generally, as we have already noted, were renowned in both contemporary folklore and modern works of fantasy for accumulating treasure hoards. For Zieglerin's patron, this form for the philosophers' stone would elicit the notion of this alchemical artefact being able to bring them great wealth, perhaps more so than any other living creature could embody in physical representation. As well as embodying the symbolic wealth-accumulating power of these draconic creatures, such an object would also serve as a tactile reminder of them. A draconic philosophers' stone was not just the pinnacle of the craft of alchemy; it was a dragon in and of itself – both form and function manifest in the hand of the alchemist or their patron. While this was not a living dragon, the alchemical powers this stone held gave it the traits of one as much as was possible in this medium.

This form may also elicit comparison to the so-called 'serpent stones' that allegedly had a range of incredible qualities. Medieval philosopher Albertus Magnus (c.1200–80) had one such stone that he called a piece of 'draconite', and which was possibly a fossil ammonite whose tight curls resembled a snake. Athanasius Kircher (1602–80) possessed several such stones, which he used in experiments to test their alleged antivenom qualities. Swiss apothecary and city councillor Renward Cysat (c.1545–1614) describes a serpent stone made of dragon's blood found in Lucerne that had miraculous healing powers, and into the eighteenth century farmers in the Harz mountains were recorded as using them to help with cows' milk production.<sup>39</sup> Early modern scholarship also believed in similar 'dragon stones' which could apparently be found buried within the head of a dragon. Conrad Gessner describes the alleged practice of dragon hunting in India, where the hunters would find a dragon's lair and lay a cloth sewn with gold-lettered sleeping spells that will put a dragon to sleep as it leaves its abode, giving the hunters chance to decapitate the beast and retrieve the fire-coloured stones from their head, for instance.<sup>40</sup> These stones were believed, like serpent stones, to possess all manner of powers, being similar in both appearance and extraordinary ability to the fabled philosophers' stone, itself said to possess universal healing abilities. Zieglerin's suggestion of these shapes, therefore, was likely a deliberate thematic association with the extraordinary powers that serpentine monsters and their related physical ephemera were said to possess, with the legends of gold-rich dragon hordes and the healing powers of serpent stones mapping neatly onto the legendary qualities of the philosophers' stone that she promised Duke Julius: wealth and health.

### Dragons, alchemy and religious identity

At times, the whims of a patron may have influenced the iconographical strategies chosen by an alchemist in their imagery, as with Anna's suggested forms of the philosophers' stone. At others, it may have been the alchemist's choice to express their own spiritual identities that informs their iconographical decisions. In an era of religious instability, where confessional identities were altered, changed and invented by the whirlwind theology of the Reformation, it is perhaps unsurprising to see serpentine beasts transformed by Reformed artists eventually appear in the work of alchemists, especially ones who were

<sup>39</sup> Dorothy Wyckoff (ed. and tr.), *The Book of Minerals*, Oxford: Oxford University Press, 1967, pp. 86–7; Athanasius Kircher, *China Illustrata*, 1667, pp. 85–7; Renward Cysat, *Collectanea Chronica und Denkwürdige Sachen Pro Chronica Lucernensi et Helvetiae* (ed. Josef Schmid), Lucerne: Diebold Schilling, 1969, vol. 2, pp. 560–84; Georg Henning Behrens, *Hercynia Curiosa oder Curiöser Hartz-Wald*, Nordhausen, 1703; Alexandra van der Geer and Michael Dermitzakis, 'Fossils in pharmacy: from "snak eggs" to "Saint's bones". An overview', *Hellenic Journal of Geosciences* (2008) 45, pp. 323–32.

<sup>40</sup> Senter, Mattox and Haddad, op. cit. (3), p. 96.



most ardent in their faith.<sup>41</sup> Paracelsian physician and printmaker Stefan Michelspacher (fl. 1610s) was one such individual, a Lutheran who left his native Tyrol in around 1613 as Archduke Maximilian III of Austria, known as 'der Deutschmeister', vigorously enforced the Catholic Counter-Reformation there.

Settling in Lutheran Augsburg, Michelspacher produced his work *Cabala: Spiegel der Kunst und Natur, in Alchymia* (1616), which contains the diagram 'Anfang. Exaltation' (Figure 5).<sup>42</sup> Perhaps the most prominent part of this diagram is a papal-crowned monster, its large size and position within the diagram hinting at both the importance and the role of its chemical cypher to the alchemical process, and the religious persuasion of the alchemist. While not immediately apparent as a serpentine beast, this creature has evolved from a Lutheran tradition of the papally crowned dragon that we have previously discussed, illustrated by the likes of Lucas Cranach and his workshop in early Lutheran bibles.<sup>43</sup> This monster in particular bears a human-like face which we can see on several pieces of Protestant religious pamphlets created in the lead-up to and during the Augsburg Interim, including the aforementioned piece by Peter Gottland and an anonymous artwork depicting Christ defeating the Pope as a three-headed beast that accompanied Erasmus Alber's mid-sixteenth-century pamphlet *Also spricht Gott: Dis ist mein lieber Son an welchem ich wolgefallen hab Den Sollt Ihr Hören*.<sup>44</sup> These pieces intimately tie the papacy together with the apocalyptic beasts of Revelation and with Antichrist, being the ultimate eschatological enemy of the Reformation bound together in the body of a dragon.

Alchemy was, of course, no stranger to the influence of religious, social or political ideas. Ideas and images could be altered as alchemical authors sought to impart their own ideas of their extra-alchemical identities into their work through new symbolic strategies. The politics of identity that Michelspacher plays with in his use of the papal tiara on this alchemical dragon make a religio-political statement about the identity of German Lutheranism being fundamentally antithetical and opposed to the papacy.

Here, the contemporary religious culture of the early modern German-speaking lands meshes with the traditional alchemical interpretation of the dragon, creating a hybrid symbol that was of specific personal importance to the alchemist who devised it. Michelspacher even draws upon some sixteenth-century trends in the depiction of St George's dragon that were also coopted by Reformers by giving his monster teats. As Samantha Riches has noted, artists around the time of the Reformation often gave dragons in scenes with St George prominent breasts or teats to highlight their sexual juxtaposition with the male saint and virginal captive princess.<sup>45</sup> Artists like Gottland, Albrecht Altdorfer (1480–1538) and Lucas Cranach the Elder all utilized this motif, and Michelspacher may have included teats in his work for similar reasons; that is to say, the further denigration of the papacy in the manifest body of the draconic beast.<sup>46</sup> Michelspacher's monster, therefore, is not only a representative of the fiery processes of distillation and sublimation in alchemy, or as

<sup>41</sup> For more on how the Reformation changed how serpents and dragons were depicted see Wood, op. cit. (5).

<sup>42</sup> Stefan Michelspacher, *Cabala: Spiegel der Kunst und Natur, in Alchymia*, Augsburg, 1616.

<sup>43</sup> Lucas Cranach, 'Illustration to Apocalypse 11', 'Illustration to Apocalypse 13' and 'Illustration to Apocalypse 16', in *Septembertestament* (tr. Martin Luther), Wittenberg, 1522; anon., 'Illustration to Apocalypse 11', in *Biblia* (tr. Martin Luther), Wittenberg, 1534, are the most notable early examples. For more on the censorship of these images see Mark U. Edwards, *Printing, Propaganda, and Martin Luther*, Berkeley: University of California Press, 1994, pp. 123–7.

<sup>44</sup> Anon, *Christ Defeats the Pope as Three-Headed Beast*, Magdeburg, c.1550.

<sup>45</sup> Riches, op. cit. (2), pp. 158–78; Samantha Riches, "'Hyr wombe insaciate': the iconography of the feminised monster", in Christine Meek and Catherine Lawless (eds.), *Studies on Medieval and Early Modern Women: Pawns or Players?*, Dublin: Four Courts Press, 2003, pp. 177–96.

<sup>46</sup> Peter Gottland, *St George and the Dragon: Allegory of the Triumph of the New Faith over the Old*, 1552; Albrecht Altdorfer, *St. George and the Dragon*, 1511; Lucas Cranach, *The Holy Saint George in Battle with the Dragon*, c.1511–13.

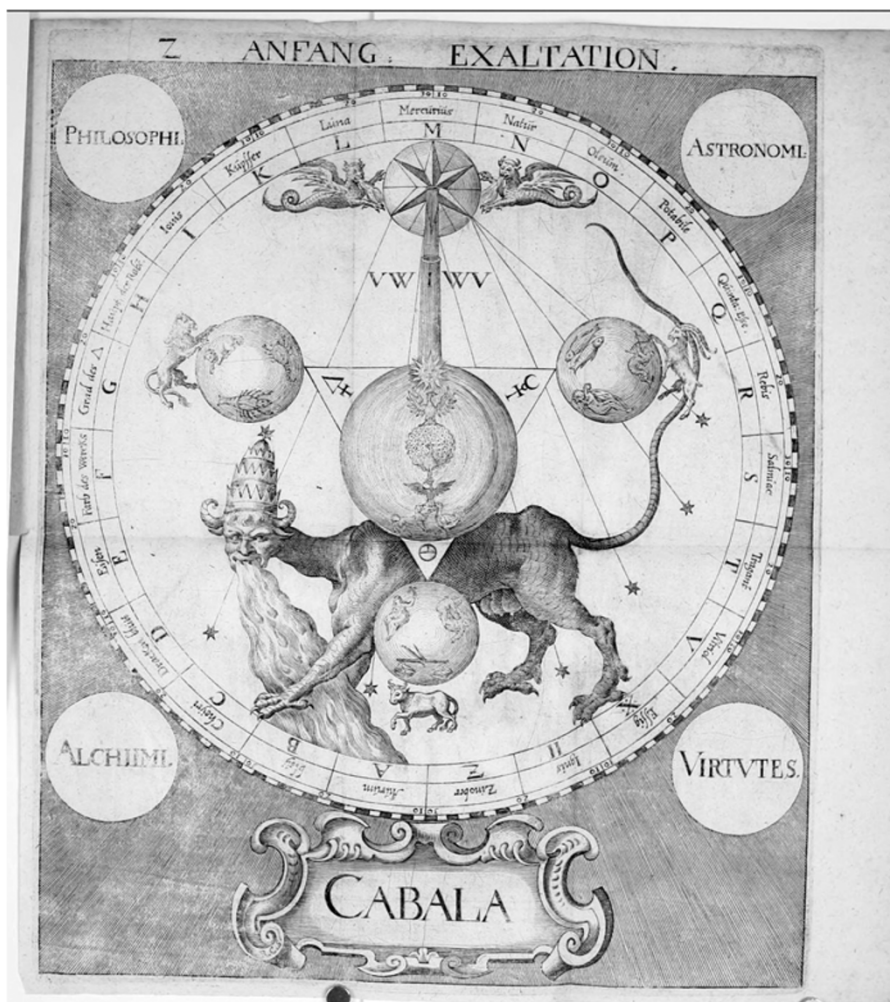


Figure 5. 'Anfang, Exaltation' from S. Michelspacher, *Cabala: Spiegel der Kunst und Natur*, in *Alchymia* (Augsburg, 1616), via Wikimedia Commons, public domain.

a *Deckname* for mercury; it is also a metaphorical signifier of an alchemist's personal religious dissent against the Catholic Church.<sup>47</sup> In the body of this monster, we see the culture of the Reformation extended into alchemy just as much as alchemy gives chemical life to this otherwise imagined creature in a way that reinforces its own message. Just as the alchemist uses a dragon to represent fire in their imagery, so too do they experience the heat of dragon flame against their skin in their experiments, and feel the fires of the Reformation, their religion itself undergoing the alchemical process of change.

This expression of religious views in alchemy during the German Reformation can similarly be seen in the form of one of the alchemical ovens of Kurfürst August von Sachsen and his wife, Anna. A diagram illustrating this oven can be found within the work of his

<sup>47</sup> Urszula Szulaowska, 'The apocalyptic Eucharist and religious dissidence in Stefan Michelspacher's *Cabala: Spiegel der Kunst und Natur*, in *Alchymia* (1616)', *Aries* (2003) 3(2), pp. 200–23; Stanislas Klossowski de Rola, *The Golden Game: Alchemical Engravings of the Seventeenth Century*, New York: Thames and Hudson, 1988, p. 58.

apprentice, Balthasar Hacker (fl. 1570s), showing a cross-section of the alchemical oven that depicts not only fire emerging from the mouth of the dragon, but also a papal tiara upon its head.<sup>48</sup> As Sergei Zotov has noted in his exploration of this example amongst other alchemical ovens, these furnaces were often depicted allegorically to connect them not only with the element of fire, but also to significant factors outside alchemy, such as technology, religion or mythology.<sup>49</sup> Here, not only is the dragon given an expressive Reformation accoutrement that speaks to the Lutheran sympathies of its alchemical master, but it too brings the dragon to life with the fire of its maw and vibrant colour of its oven body.

## Conclusion

Serpentine monsters were a potent symbol within alchemical imagery, ripe for the alchemist to imitate, explore and reinvent based on their own experiences of science, culture and religion, as well as the knowledge that the alchemical adept sought to impart. These creatures had enthralled minds for thousands of years, embodying traits ranging from the movement of the stars to the accumulations of vast treasure hoards. They could be wise or evil, and brought with them fire and calamity as they exerted raw elemental power over the land. They were a puzzle for natural historians, a stock trope in folklore and an avatar of sin in the Bible. These ideas, vibrant as they were in the early modern German world, would be explored and re-examined by alchemists as they developed the imagery of their art, with those most familiar and most useful cultural symbols finding expression in the pursuit of the Great Work. This was not just, however, in the form of instructive cyphers for chemistry, but also in the self-fashioning of the alchemist; the body of the dragon became a vessel for the ideas of the Reformation to ferment and the confessional identity of those who followed its doctrines to crystallize.

Within the art of alchemy, we see the ways in which culture became chemistry as the ancient and contemporary understandings of serpentine creatures were appropriated by alchemists to depict aspects of their art. Here, dragons often elucidated the role of certain chemicals and processes in the Great Work, and in doing so they brought elements of the draconic to the alchemist's laboratory as the sensory experiences of chemicals and the alchemical process give a unique kind of 'life' to dragons, affirming cultural beliefs about them whilst also underlining their usefulness as a symbol. Alchemy was as much a commentary on dragons as terrifying, transformative, elemental and fundamental parts of the natural world as the alchemical dragon was a commentary on alchemy itself. In the dragon we have all the fiery volatility of the alchemical process, the wealth and power of its ultimate reward, and perhaps the greed that alchemists and their patrons had in their desires. In many ways, alchemy was one of the few disciplines through which these imagined creatures could step beyond the liminal space between reality and imagination as alchemists poured all of the dragon's elemental power and association with wealth into the pursuit of the philosophers' stone, which, as suggested by Anna Maria Zieglerin, should potentially be cast into the shape of this perpetually popular and iconographically resonant serpentine monster.

<sup>48</sup> Balthasar Hacker, *Entwurf eines Probierofens*, Wittenberg, 1578, fol. 5v.

<sup>49</sup> Sergei Zotov, 'Allegorical iconography of alchemical furnaces in 16th and 17th century manuscripts', in Sarah Lang (ed.) unter Mitarbeit von Michael Fröstl & Patrick Fiska, *Alchemische Labore: Texte, Praktiken und materielle Hinterlassenschaften*, Graz: Graz University Library Publishing, 2023, pp. 285–95. For more on Anna of Saxony see Alisha Rankin, 'Becoming an expert practitioner: court experimentalism and the medical skills of Anna of Saxony (1532–1585)', *Isis* (2007) 98(1), pp. 23–53.

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