



BRILL

NUNCIUS (2021) 1–41



Vial Movies

The Driving Forces of Nature and Their Visualization

Stefan Laube | ORCID: 0000-0002-0234-1461

Institut für Kulturwissenschaft, Humboldt-Universität zu Berlin,
Berlin, Germany
stefan.laube@hu-berlin.de

Sergei Zotov

Centre for the Study of the Renaissance, University of Warwick,
Coventry, UK
sergei.zotov@warwick.ac.uk

Abstract

In the 16th and 17th centuries vials played a prominent role in the visualization of nature's driving forces as recreated in the laboratory. While in technical drawings the vial was often depicted as empty, there were also elaborate images—mainly pertaining to alchemical knowledge—in which vessels were filled, usually not with actual liquids, but with allegorical scenes. Vials functioned as visual devices, as virtual stages in illuminated manuscripts as well as in engravings in books—contrary to the reality in the laboratory where heat-resistant stoneware was normally used. This study focuses on a lavishly illustrated manuscript—*Coronatio naturae*—which circulated in numerous versions throughout Europe in the 17th century. The second part of this article presents the manuscript in detail, while the first part examines the serial “vial portraits” that appeared in books and manuscripts—the principal medium of alchemical communication at the time. It will be argued that the visualization of the individual stages of the alchemical process has an additional, inherent dimension of movement that can be described as cinematographic.

Keywords

alchemy – iconography – early animation

1 Vials and Visuality

What does it mean when a vial appears as a drawing or an engraving in a manuscript or printed book, and this in the 16th and 17th centuries, in the emblematic age?¹ What does it mean when the semantics of this geometrical shape are multiplied as soon as they are visibly filled?² And what can it ultimately mean when this vial filled with dramatic scenes that appear in the form of a series? It seems that in early modern cultures of knowledge the vial represents a powerful image.³ It is a well-known fact that alchemical techniques involved the handling of a particularly rich spectrum of containers—especially vials, glass flasks and retorts—in which the transmutatory process took place.⁴ It is therefore hardly surprising how often in the medium of the book—whether manuscripts or printed works—one encounters the vial as an image.

Visualised as glass vessels, vials functioned as picture frames or virtual stages—contrary to the reality in the laboratory where heat-resistant stoneware was actually used.⁵ In technical drawings the vial is often depicted as empty. But there are also elaborate images—mainly in alchemical sources—in which vessels are filled, not only with actual liquids, but with allegorical scenes. As with

-
- 1 See William B. Ashworth, “Natural History and the Emblematic World View,” *Reappraisals of the Scientific Revolution*, ed. David C. Lindberg and Robert S. Westman (Cambridge: CUP, 1990), 303–332; Mario Praz, *Studies in Seventeenth Century Imagery*, 2nd ed. (Roma: Edizioni di storia e letteratura, 1964); Carsten-Peter Warncke, *Sprechende Bilder—Sichtbare Worte. Das Bildverständnis in der Frühen Neuzeit* (Wiesbaden: Harrassowitz, 1987). On the omnipresence of the vial in pictorial alchemical sources, see Barbara Obrist, *Les débuts de l’imagerie alchimique (XIV^e–XV^e siècles)* (Paris: Le Sycomore, 1982); Jacques van Lennep, *Alchimie: Contribution à l’histoire de l’art alchimique* (Bruxelles: Dervy, 1985); Mino Gabriele, *Alchimia e iconologia*, 2nd ed. (Udine: Forum, 2008).
 - 2 Stefan Laube, “Bilder aus der Phiole. Anmerkungen zur Bildsprache der Alchemie,” in *Goldenes Wissen: Die Alchemie—Substanzen, Synthesen, Symbolik*, ed. Petra Feuerstein-Herz and Stefan Laube (Wiesbaden: Harrassowitz, 2014), 73–87.
 - 3 See in general about strong images Ernst H. Gombrich, “*Icones Symbolicae: Die Philosophie der Symbolik und ihr Einfluß in die Kunst*,” in *Das symbolische Bild: Zur Kunst der Renaissance* (Stuttgart: Klett-Cotta, 1986), 275–283; György E. Szönyi, “The Powerful Image: Towards a Typology of Occult Symbolism,” in *European Iconography East and West*, ed. György E. Szönyi (Leiden-Boston: Brill, 1996), 250–263.
 - 4 Sherwood F. Tylor, “The Evolution of the Still,” *Annals of Science* 5 (1945): 185–202; Robert J. Forbes, *Short History of the Art of Distillation from the Beginning to the Death of Cellier Blumenthal* (Leiden-Boston: Brill, 1948); Ute Frietsch, *Häresie und Wissenschaft. Eine Genealogie der paracelsischen Alchemie* (München: Fink, 2013), 235–285.
 - 5 The standard equipment of alchemical experiments seems to have been less the fragile glass vial and more the robust retort made of copper or cast iron.

the motifs of the window and the mirror, a separate picture field is created within an illustration, a framing within the frame⁶ that has the function of showing something which is barely visible or indeed invisible. With the help of allegories, processes of particles that are as tiny as they are volatile can be traced. These kinds of vessels are of special interest for the visual sciences because in them broad themes as well as specific knowledge can be represented by visual means.⁷ In an image that already shows something, an additional image in the shape of a vial appears whose message is the following: Everything that takes place in the vial is an experiment initiated by a human being in his tireless search for knowledge. At the same time the notion is conveyed that the processes recreated in the glass are natural and autonomous.

The focus of this essay is on various versions of the illuminated manuscript *Coronatio naturae* [Crowning of Nature], which is also listed in libraries under the title *Opus angelorum, Sapientia veterum, Veritas hermetica veritatem quaerenti*. What is remarkable about these versions is the unfolding of the production of the Philosophers' Stone in up to 66 coloured drawings of vials.⁸ *Coronatio naturae* presents the largest suite of connected imagery in the entire alchemical literature, illustrating all the stages in the process from "Chaos" to "Perfection" (Fig. 1). The images are logically sequenced and each illustration is a symbolic representation of the chemical operation occurring at a given stage of the alchemical process. Especially as a component in a series, vials were able to convey the transmutation stages and thus the dynamics of nature far better than texts could, especially when it came to keeping the working steps in mind.

The various manuscripts mostly date from the 17th century, many from the first decades. It is difficult to state precisely how many versions of this manuscript exist worldwide. It is estimated that there are about 50, half of which are conserved in collections in Great Britain. This fact alone is an indication that the work was originally written and illustrated in the British Isles;

6 André Chastel, "Le tableau dans le tableau," in *Fables, Formes, Figures* (Paris: Flammarion, 1978), 75–99; see also Viktor I. Stoichita, *Das selbstbewußte Bild: Der Ursprung der Metamalerei* (München: Fink, 1998).

7 On the power of pictorial signs, see Rudolf Arnheim, *Visual Thinking* (1969; repr., Berkeley-Los Angeles: University of California Press, 2004); Ludwik Fleck, "Schauen, Sehen, Wissen," in *Erfahrung und Tatsache: Gesammelte Aufsätze* (Frankfurt am Main: Suhrkamp, 1983), 147–175.

8 See detailed commentary: Adam McLean, *The Crowning of Nature: The Doctrine of the Chief Medicine Explained in Sixty-Seven Hieroglyphicks, by Anonimus the Cabalist* (Edinburgh: Magnum Opus Hermetic Sourceworks, 1980), text also available in the web: <https://www.alchemywebsite.com/crownmss.html> (accessed May 26, 2021); see also Gustav Friedrich Hartlaub, *Der Stein der Weisen: Wesen und Bilderwelt der Alchemie* (München: Prestel, 1959).

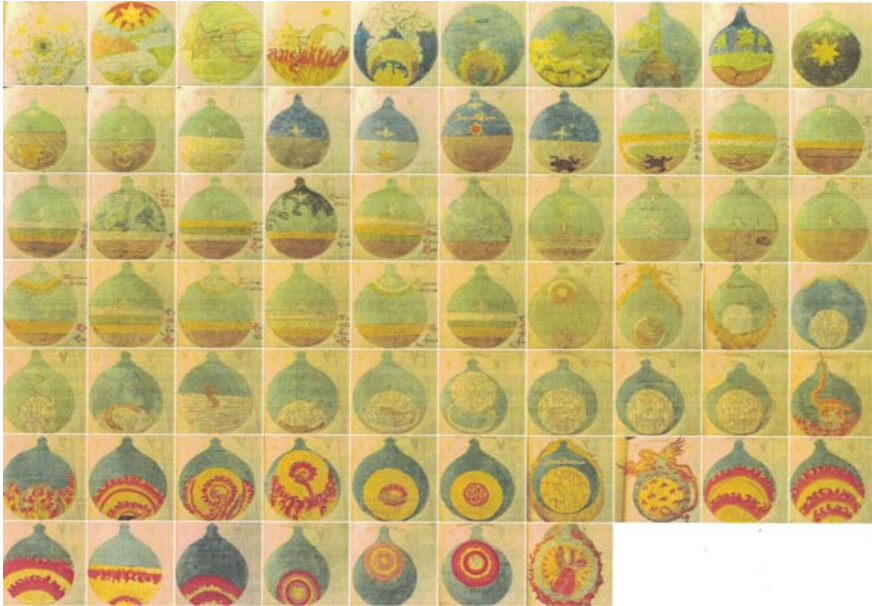


FIGURE 1 *Coronatio naturae* in a bird's eye view. 66 vial pictures at a glance
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127

even Isaac Newton copied some pictures from this treatise for his alchemical miscellany.⁹ Conceived as an intuitively clear visual statement that did not require additional textual commentary, the text—where it appeared at all—is only loosely linked to the scenes pictured. It takes the form primarily of extended quotations from the *Rosarium Philosophorum*, one of the central works of alchemy of the 16th century.¹⁰

Coronatio naturae superlatively epitomizes the alchemical tradition of communicating scientific knowledge through emblematic illustrations.¹¹ The genesis of this particularly expressive series of pictures remains a complete mystery today. Probably *Coronatio naturae* was a key work in the transition from the material expression of alchemy to its spiritual reinterpretation, as can be

9 San Marino, Huntington Library, K. Babson Collection of the Works of Sir Isaac Newton, MS 416.

10 *Rosarium philosophorum: Ein alchemistisches Florilegium des Spätmittelalters*, ed. Joachim Telle, 2 vols. (Weinheim: VCH, 1992).

11 *Emblems and Alchemy*, ed. Alison Adams and Stanton J. Linden (Glasgow: Dept. of French, Univ. of Glasgow, 1998); Laurence Grove, "Emblem and Impact," in *Emblem and Impact: Vom Zentrum und Peripherie der Emblematik*, ed. Ingrid Höpel and Simon McKeown (Newcastle upon Tyne: Cambridge Scholars Publishing, 2017), 2: 1–23.

observed in numerous sources at the beginning of the 17th century.¹² It is not to be excluded that the encoded message of the work can be scientifically analysed and even completely translated into specific chemical processes and compounds. Perhaps one would not be far wrong to take the following direction in explaining it. Whether adepts or laboratory scientists, everyone was convinced that formation processes in nature require protected spaces: from nests, eggs or abdomens to the present-day cell cultures. Only when an inner world is fabricated under the vault of a membrane, creating suitable conditions that are different from those of the outside world, can constructive biological-chemical mechanisms be set in motion.¹³ These shells enabling development had to be translated in their representation. And vial pictures were their corresponding cinematic-hieroglyphic symbol.

Vials are the protagonists of this essay. Where does the term “vial” come from? No overview of glass art fails to cite a document dating to 982, in which the Doge of Venice, Tribuno Memmo, donated the island of San Giorgio to the Benedictines. There is mention of ‘Phiolarius Domenico’, a bottle maker.¹⁴ Traditionally the lagoon of Venice was the seat of a closely regulated glassmaking trade, first in Cannareggio, then from the 13th century onwards in the unique glassmakers’ quarter on the island of Murano.¹⁵ Bottles and beakers were common products of Venetian glassmakers and could take many forms. The *fiola* was an elegant, bellied bottle with a long neck. The vial of the alchemist usually had a shorter neck. In the sources of the alchemists there were often references to a “philosophical egg”—a glass vessel that looked often more like a pear or, if the vials were particularly round, rather like an apple. But since the pear and the apple had no symbolic meaning in alchemy, the adepts preferred to speak of an egg.¹⁶ In reality, the containers in the alchemist’s laboratory looked more com-

12 Jochim Telle, “Mythologie und Alchemie: Zum Fortleben der antiken Götter in der frühneuzeitlichen Alchemieliteratur,” *Beiträge zur Humanismusforschung* 6 (1980):135–154; on the typical fusion of the mythology and alchemy of the time, see Antonio Ricciardi, *Commentaria Symbolica*, 2 vols., Venezia, 1591, ed. Mino Gabriele (Trento: Finestra editrice, 2005).

13 From this point of view, it is not unreasonable to draw parallels between the transmutation process in the *vas hermeticum* with the imaging techniques of microscopy and nanotechnology. See Peter Sloterdijk, “Blasen,” in *Sphären: Mikrosphärologie* (Frankfurt am Main: Suhrkamp, 1998), 1.

14 Luigi Zecchin, *Vetro e vetrai di Murano. Studi sulla storia del vetro* (Venezia: Arsenale 1987), 1; Rosa Barovier Mentasti, *Il vetro veneziano* (Milano: Electa, 1982).

15 The trade relations between Venice and the Islamic and Byzantine Orient led to a leap in the quality of production from which the whole of Europe profited.

16 Harry J. Sheppard, “Egg Symbolism in Alchemy,” *Ambix* 6 (1958): 140–148. Behind this was the conviction that the success of creative or birthing processes increased notice-

plex. Inventive and peculiar flasks, retorts, collecting basins, etc. are not found in *Coronatio naturae*. Here—and in many other sources—the wide range of various devices led to the apple-shaped glass vial, a telling simplification of the complex world of vessels in alchemy, which served perfectly as a stage for moving pictures. That is what this manuscript was all about—and hence the thesis of this article.

2 When Nature Is Crowned—The Plot

What is happening in the vials, whose plot is put together in the 66 “hieroglyphics”? In the test tube, chemical reactions clothe themselves in a dramatic narrative. Substances function as allegories, taking on the roles of beings and angels. The protagonists in *Coronatio Naturae* are mainly animals—from the toad and dove to a lion and up to three different giant snakes or dragons. These animals are embodiments of the four elements: the green-coloured lion stands for water, the dragons for fire, the toad for earth and the dove for air. This attempt to incorporate them in the narrative of constantly changing images inside a static vial is something quite innovative.

The vial series is divided into two parts. The first 40 vials show the production of the white stone, the remaining 27 the production of the Philosophers’ Stone, i.e. the red stone—as vividly visual as allegorical. The series always begins with a diagrammatic pattern of circles and stars symbolizing the planetary primal forces and the four elements. There follows a series of six vials—or more exactly medallions¹⁷—the first of which shows the complementary antagonism of the seven-pointed sun and the crescent moon.¹⁸

Only with the seventh scene pictured does the outline of the medallion change into that of the vial. What is shown could hardly be more dramatic.

ably as soon as the shape of the vessels was based on the shape of an egg or uterus. If the vessel had side necks in which the rising vapours were deposited, it could look like a schematised pelican. See illustrations of vessels with animal physiognomies, Giambattista della Porta, *De Distillationibus: Libri IX* (Straßburg: Zetzner, 1609), 42–43. See also Fritz Friedrichs, *Das Glas im chemischen Laboratorium*, 2nd ed. (Berlin-Heidelberg: Springer, 1954).

17 If one wants to be precise, there are only 60 vial pictures in this manuscript. Medallions rather than vials are shown in the first seven stages of the *Opus magnum*, which present the planetary elemental forces as well as the powers of the four elements.

18 On the symbolism of the sun and moon, see Joachim Telle, *Sol und Luna: Literar- und alchemiegeschichtliche Studien zu einem altdeutschen Bildgedicht* (Hürtgenwald: Pressler, 1980).

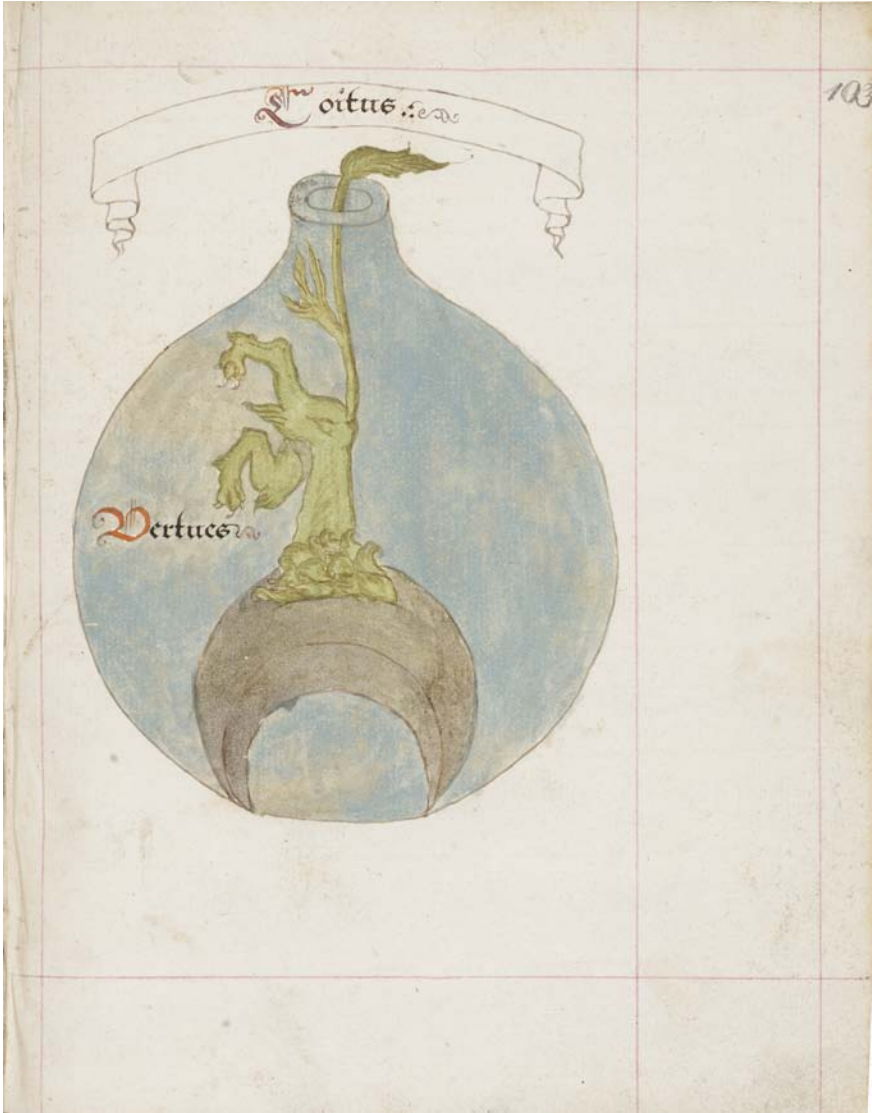


FIGURE 2 Coitus: The Green Lion colliding headlong with the sun
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127, FOL. 103^R

The *Green Lion* as symbol of the watery substance vitriol, which is capable of dissolving everything, plunges headlong into the conglomerate of sun star and crescent moon located on the ground (Fig. 2). The subsequent vial contains quite a different, and indeed idyllic scene aimed at capturing the potential of minerals, plants and trees (*Vegetall Anymall Mynerall*). Most probably this is a reference to the *Secretum secretorum*, where pseudo-Aristotle suggests that the

prime matter of the stone is present in all the kingdoms of nature.¹⁹ In the tenth picture, a vial conveys through the colour and shape of its contents that the liquid of the *Green Lion* has been burned to ashes (*calcination*). We are not dealing here with waste, but with a substantial residual product. For the first time, a moving dove appears on stage as a vehicle conveying that physical substance has been volatilized and the vapours of the substance rise. As soon as the bird flies up, it signals material separation. As soon as it falls, a new connection or bonding is imminent. Finally, behind the dove's flight movements lies the spiritual transformation of matter. With the help of the bird as a dynamic medium, an animating sublimation can emerge from the process of decay in the next steps. It is also interesting that in the vials the elements of water and fire mutate into elementary particles. You can see drops and flames raining down.²⁰

All the substances and forces that were still in their raw state as the *Green Lion* have now been brought to a certain maturity, so that the actual metamorphosis can begin. Several times the substances rise up or sink to the bottom of the vial, depending on the bird's flight upwards or downwards, which initiates the dissolution or the connection. Matter is dialectically refined in several stages—decay is followed by fermentation, the matter is saturated with spirit—until a toad emerges from the earth in the 17th picture. The toad spouts out the four elements in such a way that they spread out separately in the vessel (Fig. 3). Now the adept ensures that in the next stages a cycle of separations and connections can take place, which is always expressed by the dove flying up or falling down. The aim of these distillations is to intertwine the four elements with each other and to give them a spiritual charge.²¹

By the changes in colour and form one can see how the state of the four elements changes. At the beginning of the process the yellow flame as a symbol for fire, feathery white clouds as a symbol for air, green waves for water and grey dots for earth, all mix together. In the end a colourful potpourri is created. In the yellow strip, for example, there are now lines for water (we are dealing with the “water of fire”), while the water field gets now the texture of air for “air

19 For variants of this scene, see the section no. 9 “Extra Images and Iconographical Abnormalities” in this paper. See also Regula Forster, *Das Geheimnis der Geheimnisse: Die arabischen und deutschen Fassungen des pseudo-aristotelischen SIRR al-asrār / Secretum secretorum* (Wiesbaden: Reichert, 2006). Fourteenth-century texts, including works by pseudo-Arnald of Villanova, routinely expound on the “animal, vegetable, mineral” aspects of mercury.

20 See the section no. 4 “Pictograms of motion and drive” in this paper.

21 See Gernot Böhme, Hartmut Böhme, *Feuer, Wasser, Erde, Luft: Eine Kulturgeschichte der Elemente* (München: Beck, 1996), 211–260.



FIGURE 3 Separation: The toad spouts out the four elements
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127, FOL. 118^R

of water” (Fig. 4) and so forth. Incompatibilities from nature meet and merge together. Gradually this amalgam will turn into the white stone symbolizing the moon. At the same time the dove transforms into a pelican, biting its breast to feed on its own blood. With this self-destructive action the bird sacrifices itself, turning into a phoenix at the very end. Nevertheless: the bird as the embodi-



FIGURE 4 Play of lines and colours: The four elements intertwine with one another
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127, FOL. 120^R.

ment of air has had its day. The new driver of transmutation will be the dragon, which symbolizes fire. But before the giant serpent enters the stage, the vial breaks due to the production of the white stone.²² The white stone, standing

22 It was common practice for the alchemist to break the flask as soon as the production of the elixir was finished.

under the sign of the moon, will come out of the inner closed area of the retort and make contact with the world.

In the second part of the sequence of images the white stone of the moon is gradually transformed into the red stone of the sun, and thus into the philosophical stone. This is done by multiplication three times, each time in nine steps. And in each *multiplicatio* a giant serpent plays the leading role. As already mentioned, this monster takes over the role of the dove as the agent of development. Instead of flying up and down, the dragon meanders around the vial. As if attracted by the white stone, the snake cannot resist slipping into the vial to be absorbed by the stone. The serpent is an image of the living power of fire, injecting new energy into the white stone, which gradually assumes a shape similar to an egg.²³ From cycle to cycle, the snake becomes more fiery and colourful, with the third cycle transforming into a magnificent dragon with wings (Fig. 5). The snake serves as a symbol of the *fermentatio*, which is used “to leaven the dough.” Just as bread dough increases in volume through fermentation and becomes a fermenting agent itself, gold and silver alloys can be alloyed with other metals, increasing in volume without noticeably changing their appearance. Nevertheless, the monster will always “lose” the “fight” with the stone or egg, not without biting its own tail shortly before its demise. The turning point of the story is always this Ouroborous scene, which initiates the fusion of serpent and stone. The monster merges with the stone, which is expressed in the stone by its changing colour—from white to yellow, from yellow to red.

In the final cycle, when the yellow stone and winged dragon are fused together, the yellow stone in the vial gradually rises, fired by flames directed inwards. In the middle of the stone a winged angel crystallizes out. The Philosophers’ Stone announces itself, which is finally fixed in the 67th and final picture. It is marked by a full-grown angel holding a pupurin crown in his hands. The message conveyed in this visual language is clear: The alchemist has created a perfect substance that unites the essences of the four elements and the Quinta Essentia with the principles of silver (moon) and gold (sun) and the primordial planetary forces.

23 Sheppard, “Egg Symbolism in Alchemy.”



FIGURE 5 From cycle to cycle the dragon becomes ever more fiery and colourful; the third one has even sprouted wings
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127, FOL. 153^r

3 How Do Pictures Move?

Faced with the challenge of conveying transmutation and a process unfolding over time, serially presented vials with their respective contents come into focus. Whereas single emblematic images proceed rather statically in their assignment of pictorial signs and meaning, sequences of images can develop a flow, a dynamic. That is all the more important because in the *Opus magnum* the substantive result is as relevant as the process leading to it.²⁴ It is

²⁴ Aaron Kitch, "The 'Ingredred' Stone: The Ripley Scrolls and the Generative Science of

fascinating to see how closely in *Coronatio Naturae* the progressive process is conveyed, so that a cinematographic effect becomes apparent when turning the pages at high speed—an effect that is particularly noticeable when there is only one centrally positioned vial on the *recto* side. If you click your mouse to move through the sequence of images quickly, cinematic effects result primarily from the movements of the dove and dragon, almost like in a cartoon.²⁵ Even if no traces of use can be identified in the codices that would suggest actual use as a flip book, the viewer's imagination is often addressed and triggered to create moving images in the mind through the dense sequence of material pictures.²⁶

Sequences of images are not unusual beginning in Late Antiquity. They were perfect for narratives from the Bible. Picture sequences from the Old and New Testaments still decorate bronze doors and the walls inside medieval churches.²⁷ A rosary, a device that rotates by movements of the fingers, can also be used to direct an inner film of uplifting imagination, especially if the devotee is equipped with a sequence of images.²⁸ In piety—whether Catholic or Protestant—the heart as a vessel represented in a series provides the perfect pictorial symbol for processes of inner affection and purification based on

-
- Alchemy," in *Huntington Library Quarterly* 78 (2015): 87–125; Jennifer M. Rampling, "Transmission and Transmutation: George Ripley and the Place of English Alchemy in Early Modern Europe," *Early Science and Medicine* 12 (2012): 477–499.
- 25 On cinematic effects in the Middle Ages and early modern times, see Jörg Jochen Berns, *Film vor dem Film: Bewegende und bewegliche Bilder als Mittel der Imaginationssteuerung in Mittelalter und Früher Neuzeit* (Marburg: Jonas, 2000).
- 26 See the corresponding visual effects with scrolls: Nina Marie Zchomelidse, "Descending Word and Resurrecting Christ: Moving Images in Illuminated Liturgical Scrolls of Southern Italy," in *Meaning in Motion: The Semantics of Movement in Medieval Art*, ed. Nina Maria Zchomelidse and Giovanni Freni (Princeton: Princeton University Press, 2011), 3–34 and pop-up images by the example of Dionysos Andreas Freher (1649–1728): Alexander Roob, *Das Hermetische Museum. Alchemie & Mystik* (Köln: Taschen, 2006), 445–447. See also: David Kunzle, *The Early Comic Strip. Narrative Strips and Picture Stories in the European Broadsheet from c. 1450 to 1826* (Berkeley: California University Press, 1973).
- 27 See Wolfgang Kemp, *Sermo corporeus: Die Erzählung der mittelalterlichen Glasfenster* (München: Schirmer-Mosel, 1987); Steffen Bogen, "Türen auf Bildertüren: Zum Ort, Medium und Selbstverständnis christlicher Bildererzählung," in *Die Medialität der Geschichte und die Historizität der Medien*, ed. Fabio Crivellari, Kay Kirchmann, Marcus Sandl, and Rudolf Schlögl (Konstanz: UVK, 2004), 239–261; Michael Curschmann, "Wort—Schrift—Bild: Zum Verhältnis von volkssprachigem Schrifttum und bildender Kunst vom 12. bis zum 16. Jahrhundert," in *Mittelalter und frühe Neuzeit: Übergänge, Umbrüche und Neuansätze*, ed. Walter Haug (Tübingen: Niemeyer, 1999), 378–470.
- 28 Jörg Jochen Berns, "Rosarium und Bilddrift: Zur präcinematiscen Bedeutung des Rosenkranzgebets," in *Der Rosenkranz: Andacht—Geschichte—Kunst*, ed. Urs-Beat Frei and Fredy Bühler (Bern: Benteli, 2003), 302–319.

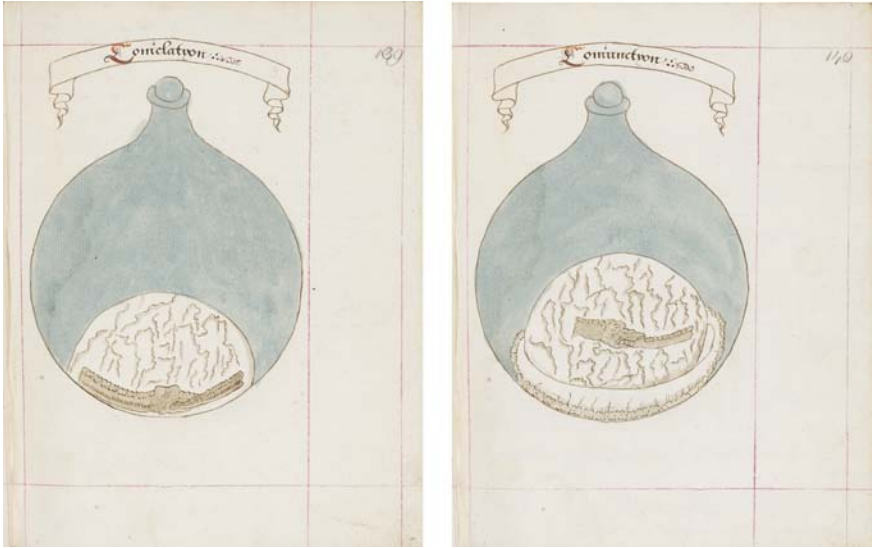


FIGURE 6 As in cartoon: The dragon in the white stone (step 44 and step 45)
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127, FOL. 139^R, 140^R

the Holy Scriptures.²⁹ What is unique about *Coronatio Naturae* is the minimal difference that exists between successive representations.

Let us look at the vials in the first multiplication phase. In the 44th image, at the bottom of the vial we see the snake's head in the white stone biting its own tail. In step 45 this motif remains largely the same, only appearing slightly shifted upwards (Fig. 6). As far as we are aware, there is no sequence of pictures in the history of knowledge in the early modern age that depicts a progression on such a minute scale. This leads to the inescapable conclusion that a movement, a process is being conveyed here, one that plays a central role in nature in the sense of *natura naturans*, i.e. as a self-activating intrinsic dynamic without which the creation of matter would be unthinkable. These vials are media of animation, they reflect nature, which is permanently dynamic. Vials can thus become something like elastic bubbles.³⁰

29 Antonius Wierix II, *Cor Jesu amanti sacrum*, 1585; Daniel Cramer, *Emblemata Sacra: Das ist: Fünffzig Geistliche in Kupffer gestochene Emblemata, oder Deutungsbilder aus der Heiligen Schrift* (Frankfurt am Main: Jennis, 1622); and recently Stefan Laube, "Heart and Vial as Communicating Tubes: Notes on the Imagery of Vessels in Early Modern Times," in *Sacred Heart Devotion. Memory—Body—Image—Text: Continuities and Discontinuities*, ed. Franziska Metzger and Stefan Tertünte (Göttingen: Vandenhoeck & Ruprecht: 2020), 135–165.

30 Anke Timmermann, "Mit den Augen des Alchemikers: Die Geheimnisse alchemischer

It is obvious that this was intended by those who had conceived and designed the work. The shape and the content of the vials address viewers, not readers. These pictograms were designed to open their eyes to an intuitive understanding of the forces and processes of nature. Things express themselves primarily through movement, but their behavior can be missed if they are depicted in terms of static properties. These are pictograms of dynamics. Modelled on Chinese characters or Egyptian hieroglyphics as they were then understood,³¹ the series of pictures in *Coronatio naturae* can be seen as an iconographic system of signs that convey knowledge in an even more dynamic fashion.

It is striking that prominent alchemists of the period such as Nicolas Flamel, Heinrich Khunrath and Michael Meier had recourse to the concept of hieroglyphics. Thus, a version of the *Coronatio naturae* in the Ferguson Collection at Glasgow University Library bears the title *Emblemata seu hieroglyphica chymica enigmatica*.³² It was as if the veil of the enigmatic with which such sources surrounded themselves led to a new visual language and form of communication. Behind such sequences of images could be hidden the ambitious goal to create a more efficient medium, intended to convey knowledge in a completely new way that extended well beyond a font consisting of letters only, which can only describe and thus particularize connections one after the other,

Texte, Objekte und Bilder neu betrachtet," in *Alchemie und Wissenschaft des 16. Jahrhunderts. Fallstudien aus Wittenberg und vergleichbare Befunde*, ed. Harald Meller, Alfred Reichenberger, and Christian-Heinrich Wunderlich (Halle an der Saale: Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt, Landesmuseum für Vorgeschichte, 2016), 299–312, 308. In this exhibition of the Landesmuseum für Vorgeschichte in Halle (Saale), Timmermann pointed out the flipbook effect of *Coronatio Naturae* for the first time through a pictorial installation based on the Cambridge University Library version. See also clips on her website: <https://www.typeandforme.com/index.php/2021/05/03/alchemy-at-cambridge-university-library-the-crowning-of-nature/>, accessed May 26, 2021.

- 31 Daniel S. Russell, "Illustration, Hieroglyph, Icon: The Status of the Emblem Picture," in *Polyvalenz und Multifunktionalität der Emblematis*, ed. Wolfgang Harms and Dietmar Peil (Frankfurt am Main: Lang, 2002), 73–90; Aleida Assmann and Jan Assmann, "Hieroglyphen: altägyptische Ursprünge abendländischer Grammatologie," in *Hieroglyphen: Stationen einer anderen abendländischen Grammatologie*, ed. Aleida Assmann and Jan Assmann (München: Fink, 2003), 9–27; Thijs Weststeijn, "Signs that Signify by Themselves: Writing with Images in the Seventeenth Century," in *The Making of the Humanities*, vol. 1, *Early Modern Europe*, ed. Thijs Weststeijn, Rens Bod, and Jaap Maat (Amsterdam: Amsterdam University Press, 2010), 133–159.
- 32 University of Glasgow Library, Special Collections, MS 253.

and beyond the rather modest visual culture of the day, which was content to illustrate what the text has already said.³³

4 Pictograms of Motion and Drive

For many scholars nature in the early modern age was hardly more than a static design that was understood as timeless and preformed. Models and concepts such as the chain, the set of stairs, and the ladder encapsulated a temporal understanding that lacked any fluidity.³⁴ Basically, natural history was no more than mere description of what was there.³⁵ It was always a challenge to capture the dynamic nature of the concatenation of the *scala naturae* and do justice to the metamorphic power of nature. *Coronatio naturae* met this challenge in an impressive way. Analogies to the animal world were particularly popular as a means of illustrating motion and drive in nature. With the motif of the white dove, which either flies steeply upwards marking the volatilization or evaporation of substances or else falls headlong indicating their condensation, the chemical process of distillation could be captured in a striking picture.

And beyond that: Was there such a thing as an inner fuel for the unfolding of creation and how could it be represented? In some vials you see water drops or particles of fire falling down (Fig. 7). In the first cycle of separations and connections (stages 18–27), when the four elements emerge from the primordial matter and the white dove can begin its game of *solve et coagula*, particular pictorial elements catch the eye. Thus the black toad, which will spew out the four elements one step later, is surrounded by drops of water. The dove flying up is also surrounded either by water drops (level 19, level 23) or by both flaming particles and water drops (level 21, level 25). During the separation process—symbolized by the dove flying upwards—the rigid connections between the

33 Umberto Eco, *Die Suche nach der vollkommenen Sprache*, trans. Burkhart Kroeber (München: Beck, 1994).

34 Arthur O. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge: Harvard University Press, 1936); Joseph E. Freedman, “The Transition (Übergang) of the Great Chain of Being as Reflected in 16th-Century Writings on Philosophy and the Arts,” *Wolfenbütteler Renaissance-Mitteilungen* 36 (2016): 39–76.

35 See Arno Borst, *Das Buch der Naturgeschichte: Plinius und seine Leser im Zeitalter des Pergaments* (Heidelberg: Winter, 1994); Wolf Lepenies, *Das Ende der Naturgeschichte: Wandel kultureller Selbstverständlichkeiten in den Wissenschaften des 18. und 19. Jahrhunderts* (Frankfurt am Main: Suhrkamp, 1976).

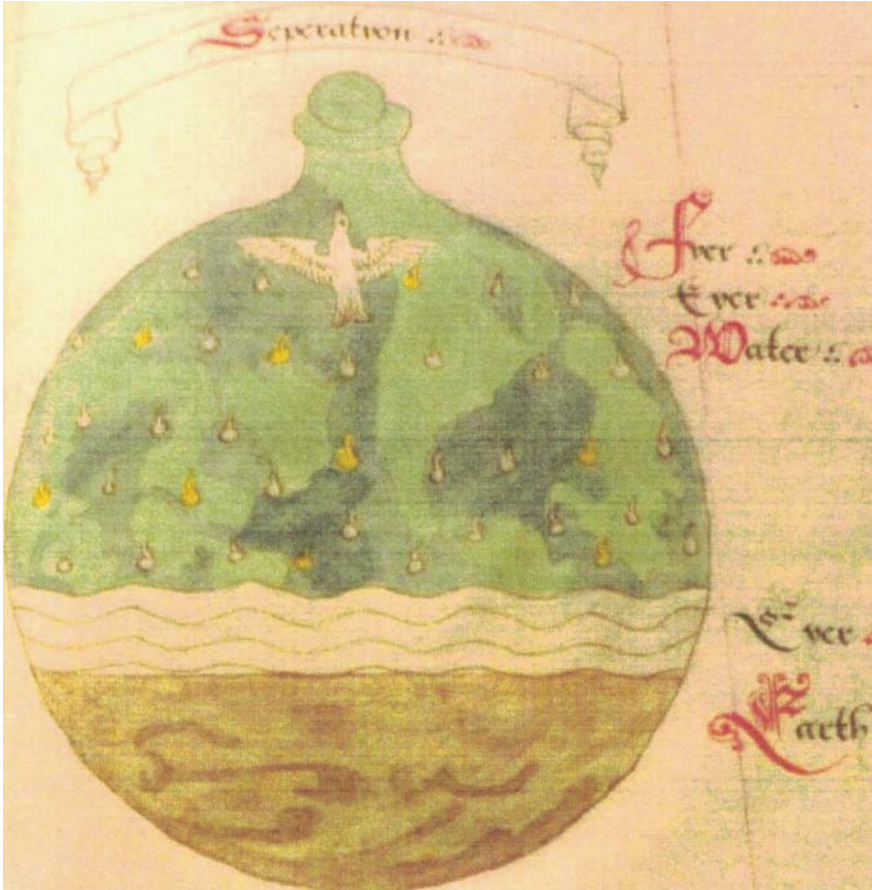


FIGURE 7 Separation in the first Separation-Conjunction-Phase, stage 24
 OXFORD, BODLEIAN LIBRARY, MS DIGBY 127, FOL. 117^R

elements are loosened so that they can reunite again. The key question is raised: Must there not be a mediating entity, a particularly flexible ingredient of the in-between space, such as drops and flames, which propels and shapes matter?³⁶

Drops and flames look surprisingly similar. In its material form, the drop is a particularly small body of liquid in the shape of a sphere with a tapering tip. As an image of movement and transition, however, the drop of water

36 Stefan Laube, "Tropfen und Flamme: Agenzien des Übergangs in der Bildsprache der Alchemie," *Wolfenbütteler Renaissance-Mitteilungen* 36 (2016): 77–101.

attains its shape only just before it separates from the body of water that is its source. The flame can be described as the particulate appearance and the basic unit of burning fire. Fire is the key medium of transmutation and causes the transition of matter from one state to another. Every alchemist had to have a complete mastery and control over fire.³⁷ In addition, there is the metaphorical dimension of fire in alchemy. The Paracelsists often spoke of life as fire, and fire forms the body of the soul. All living things are actually fire, because they have warmth in them.³⁸

Water drops and particles of flame form a diametrical contrast whose function is to generate an energy field, without which nature cannot progress. Both flame and drop—the fiery spirit and the liquid matter—are hieroglyphics for nature that is continuously moving and changing. It seems that in images particles of flames and drops of water serve as triggers for movement and transition. Ultimately, the drop and the flame are supposed to embody the coincidence of opposites. In addition to the animation which results from a sequence of images whose individual images differ only slightly from one another, the depiction of the drop of water and the tiny flame also represent attempts to capture movement. If the logic of the image, by its very nature, cannot help but stop the flow of natural events in ‘freeze-frames’—a completely unnatural event anthropologically speaking—then the representation of volatile entities such as a flame or a water drop has the function of questioning this.³⁹

5 Barchusen's Print Version

Again and again we find the vial at the centre of entire iconographic programmes, a highly expressive motif that can appear as both subject and frame, a transparent globe encapsulating a complex scene, a vehicle of knowledge: *Splendor Solis* for example with its seven representations of vials,⁴⁰ or above all

37 On alchemists as “fire philosophers”: Susanne Beier, *Feuerphilosophen: Alchemie und das Streben nach dem Neuen* (Zürich: Chronos, 2015).

38 Heinz Schott, “Heil und Heilung: Zur Ideengeschichte der Alchemie in der frühen Neuzeit,” in *Goldenes Wissen: Die Alchemie—Substanzen, Synthesen, Symbolik*, ed. Petra Feuerstein-Herz and Stefan Laube (Wiesbaden: Harrassowitz: 2014), 103–105.

39 The visualization of drop and flame refers to the ambiguous character of every picture. It fixes its individuality, it summarizes the original's richness. The consistency of the drop and flame is a permanent reminder that this static abstraction is always in flux.

40 Jörg Völlnagel, *Splendor Solis oder Sonnenglanz: Studien zu einer alchemischen Bilderhandschrift* (München: Deutscher Kunstverlag, 2004).

Donum Dei, which is preserved in almost 150 manuscripts and consists exclusively of depictions of flasks.⁴¹ On the one hand, the vial filled with visual scenes can appear as the straightforward visual image of a vessel, as in *Donum Dei*. More common, however, was the vial embedded in a pictorial background; it is particularly painterly in the alchemical splendour of *Splendor Solis*. In printed books the vial as a stage is dominant in works such as Johann Daniel Mylius' *Anatomia auri* (Frankfurt a.M., 1628), where in three panels the twelve-stage process of making the Philosophers' Stone unfolds in vivid scenes. The most comprehensive series of images of vessels in the history of alchemy is printed in the *Elementa Chemiae* (Leiden 1718) by Johann Conrad Barchusen. In the third part nineteen full-page copperplate engravings show no fewer than 78 vials or tondi.⁴² What is this all about?

Recently, a learned person came to me; he gave me the following pictures, which he said came from a Swabian Benedictine monastery; he also had a manuscript of which he would not allow me to take a copy. In any case, these pictures, which are said to be more than two hundred years old, seemed to me to be connected with the making of the Philosophers' Stone, and they also seemed to me to be more explicit than any others of which I had knowledge, both for their own excellence and for their sequence: I therefore considered it necessary to win the gratitude of those who strive for the art of Chrysopoeia by having them engraved in an etching in the present treatise.⁴³

41 Paolo Galiano, *Il Pretiosum Donum Dei* (Roma: Simmetria, 2018).

42 Alexandre Foriani, "Commentaires sur dix-sept figures attribuées à Jean Conrad Barchusen," in *Alchimie: Cahiers de l'Heremtisme*, ed. Antoine Faivre (Paris: Albin Michel, 1996), 75–128.

43 "Haud pridem me invisebat vir doctus, qui mihi ostendebat icones sequentes, de quibus referebat, non dudum eas in Suevia, in cœnobio religiosorum, qui instituta religiosi Benedicti tenent, repertas; adfuisse etiam librum manuscriptum, cujus, quamvis possessorem enixe rogaret, ut sibi eum exscribendi copiam daret, non potuit cosors fieri. Quandoquidem vero hae icones, quas volunt abhinc amplius ducentis annis adumbratas, mihi videbantur apprime lapidis philosophici confectionem referre, & meliori non solum ordine, sed etiam momento quodam & iudicio præstantiori, quam ullæ hucusque a me visae, dispoitiae: id icro me Chrysopœiæ tironibus vehementer gratum esse facturum, existimavi, quum has icones æri incidi curaverim, adeoque ipsis ad has inspiciendas copiam effecerim." Johann Conrad Barchusen, *Elementa chemiae, quibus subjuncta est confectura lapidis philosophici imaginibus repraesentata* (Leiden: Haak, 1718), 502f. (transl. by the author).

This is how Johann Conrad Barchusen (1666–1723), a German pharmacist and doctor who went on to forge a successful career for himself at the University of Utrecht,⁴⁴ described his discovery of an extraordinary source,⁴⁵ a version of *Coronatio Naturae*.

Actually, Barchusen was more a chemist or rather a ‘chymist’ than an alchemist.⁴⁶ Among other things, he worked on succinic acid and carried out analytical studies of blood and bile. He is regarded as one of the first practitioners of chemistry as an independent academic subject, which until then had been considered a branch of medicine. Barchusen taught only chemistry throughout his life and wrote four textbooks on the subject. Thus in Leiden in 1698 *Pyrosophia* appeared. Nowhere in this work does Barchusen indicate that he considers a refinement of metals by a special ingredient likely.

This book dating to the end of the 17th century was reprinted twenty years later in a revised version under the title *Elementa chemiae*. In it Barchusen surprised his readers with an appendix that was as mysterious as it was spectacular. It aimed at presenting the alchemical process of transmutation for the production of the Philosophers’ Stone in a detailed sequence of pictures that was unprecedented until then: 78 pictorial elements in 19 full-page copperplate engravings (Fig. 8). The series of pictures depicts the laborious path to the *lapis philosophorum* which, under the influence of the philosophical agent *mercurius* or the substance *azoth*, leads through numerous distillations to the purification of matter and the extraction of the true elixir. The regularly ascending and descending dove thereby symbolizes the material spirit, the distillate of the process, which is released and repeatedly combines with matter—the dove flies up and down a total of 27 times before the stone can be gained with the 28th step. Afterwards, the *lapis* in the form of a dragon is also subjected to a permanent sublimation process before finally rising as the Philosophers’ Stone.⁴⁷

44 In 1694 the magistrate of Utrecht gave Barchusen permission to teach courses in chemistry at the university, which he was not actually entitled to do because he did not have a degree. The courses were so successful that the magistrate funded the building of a chemical laboratory for him, the first of its kind in Utrecht.

45 Owen Hannaway, “Johann Conrad Barchusen (1666–1723)—Contemporary and Rival of Boerhaave,” *Ambix* 14 (1967): 108–109.

46 On the distinction between chemistry, alchemy, and chymistry as in-between terms in this period, Lawrence M. Principe, *The Scientific Revolution: A Very Short Introduction* (Oxford–New York: OUP, 2011), 80–86.

47 See the detailed description in the chapter “Strange Doings in an Alchemist’s Flask,” in Arthur Greenberg, *From Alchemy to Chemistry in Picture and Story* (Hoboken, NJ: Wiley, 2006), 125–135.

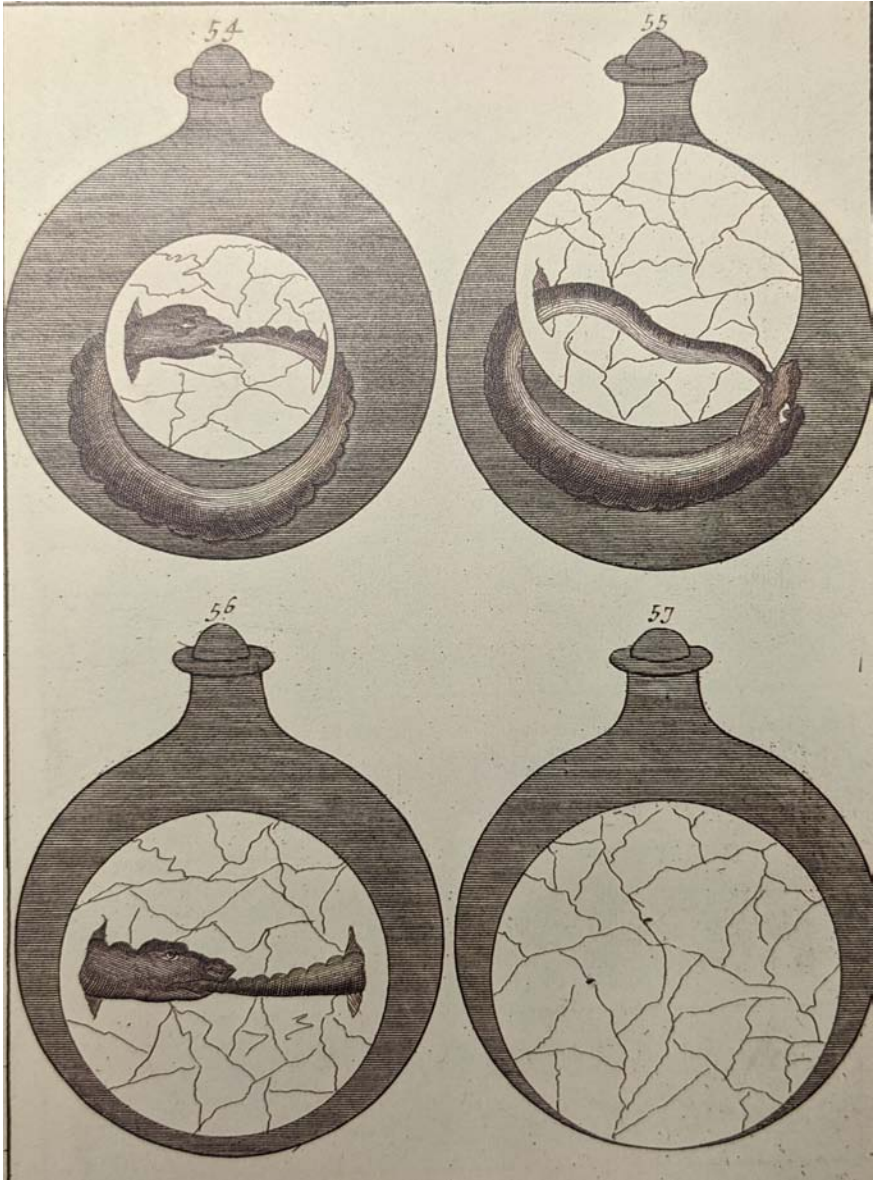


FIGURE 8 Four scenes on one page. The dragon absorbed by the stone
BARCHUSEN, *ELEMENTA CHEMIAE*, P. 514

The similarity of the scenes in the vials to MS Digby 127 is astonishing, as if they had been meticulously copied from it. All the more striking, however, are the differences. Intriguingly, this printed version with 78 drawings goes far beyond the usual 67 pictorial motifs. This is mainly due to the fact that it is preceded by a kind of frontispiece with five tondi. In the first, as a sort of summation of the contents, one sees the angel with the *lapis philosophorum* within a gloriole. This oval is surrounded by protagonists from the animal world, among them the pelican, the dragon, the toad and the lion—which could also be viewed as the driving forces of the process. In the second tondo the communication between the adept and God the Father in Heaven is visualized in an idyllic interior.⁴⁸ Some additional pictures show that this print version is probably based on a particularly inventive template. A purely empirical representation also emerges, completely without allegory or emblematics: we see a smoking oven in which a vial is bubbling away.⁴⁹ In some of the tondi the image even continues outside the frame, such as on level 20, where a heavenly hand pours water from a jug into a prone crescent moon—from outside the circle to inside the circle. At the bottom water from the sea flows over the lower frame of the tondo and cascades in a waterfall onto a meadow, which is shown outside the circle diagram.⁵⁰

The question of what is actually different when one changes medium from handwriting to printing is rarely asked in alchemy. In terms of the rendition of colour, an illuminated manuscript is clearly superior to a printed book. Alchemical pictures are semantic pictures. Meaning is not only generated by the lines of the drawing, but also by the way the figures are coloured, as we have seen in *Coronatio naturae*. Although the chemical transformation process may show a wide range of variation in its details and in this respect there are hardly two alchemists who follow exactly identical instructions, *Coronatio Naturae* is characterized by a typical course. One distinguishes four phases that differ in colour, namely: *nigredo* (blackening), *albedo* (whitening), *citrinitas* (yellowing), and as the crowning finale *rubedo* (reddening).⁵¹

48 In the third tondo there is a wreath of clouds with the inscription of God in the middle, in the fourth a coat of arms and in the fifth the hand of God extends out of the clouds in a scene probably intended to spiritualize the four elements. See the illustration of this sheet, which probably served as the picture to the title page: Jörg Völlnagel, *Alchemie: Die Königliche Kunst*, (München: Hirmer, 2014), 207.

49 See the vial in step 16: Barchusen, *Elementa chemiae*, 505.

50 See the vial in step 10: Barchusen, *Elementa chemiae*, 504.

51 Spike Bucklow, "Alchemy and Colour," in *Colour: The Art & Science of Illuminated Manuscripts*, ed. Stella Panayotova (London-Turnhout: Harvey Miller, 2016), 108–118; Claus Pries-



FIGURE 9 A: How the four elements are distinguished by lines and grey hues; B: How the four elements are distinguished by colours

A: BARCHUSEN, *ELEMENTA CHEMIAE*, P. 500; B: LONDON, BL, MS SLOANE 12, FOL. 20

Even if the engraver and printer usually do not have the actual colours of these processes at their disposal,⁵² they have other means of depicting the transformations of substances by using hatchings and different shades of grey, and also by using geometric shapes creatively. It is interesting to see how the four elements in the vials are distinguished simply with a drawing pencil. The band for earth is a homogeneous dark grey, almost black, while the band for water is homogeneously light, almost white. At the top is the band for fire, which is represented as usual by flickering flames. And in the field for air below, against a grey background the outlines of a chain of vials catches the eye. They are drawn in the manner of a picture puzzle, so that they also appear to be upside down depending on how the cognitive perception is focused (Fig. 9a). The vial, wherever there are particles of air and where liquids evaporate, appeared to the artist as a meaningful symbol for this invisible element. One might now think that here, an engraver or a printer would compensate for the deficiency of the colour palette. But this was not the case. In the British Library is a particularly colourful version of *Coronatio Naturae*, where the shape

ner, "Farben," in *Alchemie: Lexikon einer hermetischen Wissenschaft* (München: Beck, 1998), 131–133.

52 Ad Stijnman and Elizabeth Upper, eds., *Printing Colour 1400–1800: Histories, and Techniques, Functions, and Receptions* (Leiden-Boston: Brill, 2014).

of vials can also be identified in the section of air, by the way in which a flickering restlessness is conveyed that corresponds to the glitter of the glass (Fig. 9b).

6 Movement in Protected Spaces

Even if it seems to be the shared self-image of this source to remain enigmatic, the interpretive ambition of today's researcher is permanently triggered by this source. Does the tableau of an allegorical action film now hide instructions, concrete recipes for the production of the philosopher's stone⁵³ or does it not want to stimulate more than a theoretical meditation, to develop a feeling for how nature actually works? The essay tends toward the latter.

In the 17th century the visualization of movement was a subject of intense interest in art and science.⁵⁴ *Coronatio naturae* reflects nature which is characterized by the fact that it is anything but fixed, that it is movement, change, in constant flux. In the versions of *Coronatio naturae*, where the *recto* is no more than a vial whose contents change minimally from page to page, a flip-book impression can develop in the imagination of the user.⁵⁵ Such vial sequences could visualise flowing transitions before the invention of film—an effect that is not intended for amusement, but to express the core feature of nature: Nature is never static, it is never mere being but becoming. It is always about creating polar tensions which ultimately aspire to unification. With the *coniunctio* the tension dissolves, but not without it immediately becoming itself again as the starting point of a polarity charged with tension—and so on and so forth. The

53 Jennifer M. Rampling, "Transmuting Sericon: Alchemy as 'Practical Exegesis' in Early Modern England," in *Chemical Knowledge in the Early Modern World*, ed. by Matthew Daniel Eddy, Seymour H. Mauskopf, and William R. Newman, special issue, *Osiris* 29 (2014): 19–35; Timmermann, *Mit den Augen des Alchemikers*.

54 Carolin Behrmann, "Echsenkampf und Bienenzunge: Die *Accademia dei Lincei*. Gianlorenzo Bernini und die Visualisierung von Bewegung," in *Departure for Modern Europe: A Handbook of Early Modern Philosophy (1400–1700)*, ed. Hubertus Busche (Hamburg: Meiner, 2011), 685–701; Allen G. Debus, "Motion in the Chemical Texts of the Renaissance," *Isis* 64 (1973): 4–17.

55 See on the mechanism of the early modern flip book Jörg Jochen Berns, "Horribiliciniex: Von Geburt und Gebaren des Daumenkino-Flipp-Flick-Muto-Blow-& Gaukelbuchs," in *Daumenkino—The Flip Book Show* (Köln: Snoeck Verlagsgesellschaft, 2005), 26–33; see also Peter Matussek, "Bewegte und bewegende Bilder: Animationstechniken im historischen Vergleich," in *Kunst der Bewegung: Kinästhetische Wahrnehmung und Probehandeln in virtuellen Welten*, ed. Christina Lechtermann, Carsten Morsch, and Horst Wenzel (Bern: Peter Lang, 2004), 1–13.

production of the Philosophers' Stone involves a process of transformation that is permanently kept in flux by polarized agents.⁵⁶

The scene-filled vials in *Coronatio naturae* signal that there is a protected space for movement to unfold. This sequence of vessels is of great interest to the genre of scientific illustration because in its knowledge is set in motion by visual means—almost like in a cartoon film—such as the dove flying up and falling down or the dragon that writhes around the vial and the stone to visualize volatilisation and fixation during the transformation of matter. According to the alchemical world view, which is characterized by the unity of theory and practice, subject and object, this visual sequencing seems to capture the distinct dynamics of material transformation in the mirror of the inner pictures created by the alchemist.⁵⁷ Whereas in modern times, the motif “researcher looking at a test tube in the laboratory” was to rise to a heroic representation of progress, science and manhood,⁵⁸ the baroque adept is fully integrated into the *Opus magnum*. In vial representations not only is matter redeemed, but also the human being who handles it. Generally, the relationship between alchemist and vial often appears as if two living beings are meeting here, a fascinating encounter between human and thing staged by poets.⁵⁹ And a visual sequencing that attempts to capture both the material transformation of matter and the inner flow of the alchemist's imagination is an appropriate representation.

56 On the typology of the magic-mythical understanding of nature around key words like dynamism, animism, organicity, antagonism, and sympathy, see Karin Gloy, *Das Verständnis der Natur: Erster Band: Die Geschichte des wissenschaftlichen Denkens* (München: Beck, 1995), 31–72.

57 The question of whether alchemy is primarily a practical operation or a theoretical discipline cannot be answered unambiguously. Among the diversity of the early modern disciplines, alchemy seems to have been a field of knowledge that was particularly at home in transitional regions lying between theory and practice, between this world and the next, between magic and experiment, between fiction and document, between imagination and empiricism, between falsehood and truth, between strangeness and the self. Smooth transitions, the ambiguities and paradoxes that accompany them seemed to determine how alchemy saw itself. See Jean Marc Mandosio, “L'Alchimie dans les classifications des sciences et des arts à la Renaissance,” in *Alchimie et Philosophie à la Renaissance*, ed. Jean-Claude Margolin and Sylvain Matton (Paris: Vrin, 1993), 11–41.

58 See the famous portrait of Louis Pasteur by Albert Edelfelt (1885), and Kijan Espahangizi, “From ‘Topos to Oikos’: The Standardization of Glass Containers as Epistemic Boundaries in Modern Laboratory Research (1850–1900),” *Science in Context* 28 (2015): 397–425.

59 “Hail precious phial! Thee, with reverent awe, / Down from thine old receptacle I draw! / Science in thee I hail and human art. / Essence of deadliest powers, refin'd and sure, / Of soothing anodynes abstraction pure, / Now in thy master's need thy grace impart!” Johann Wolfgang Goethe, *Faust, Part 1*, trans. Anna Swanwick (New York: F. Collier & Sons Company, 1909–1914), lines 345–350.

Part 2

Coronatio naturae—A Telling Source in Its Variants

It is definitely worthwhile to take a closer look at *Coronatio naturae* in its different versions. We have found and identified 41 versions of *Coronatio naturae* so far, some of which have never been studied before.⁶⁰ To facilitate navigation of the manuscript data we assigned short titles to every version using the first three letters of the city where the library is located, and adding numeration where needed.

Abbreviation, city, library, and signature	Number of images	Dating
1. Cam Cambridge, Cambridge University Library, MS Gg.1.8.	67	XVII c.
2. Cop1 Copenhagen, Det Kongelige Bibliotek, MS 1785	60	XVII c.
3. Cop2 Copenhagen, Det Kongelige Bibliotek, MS 1786	60 (+4 sketches)	XVII c.
4. Dar Darmstadt, Staatsarchiv, D 4 Nr. 588/2	17	end of the XVIIIth c.?
5. Dre Dresden, Sächsische Landesbibliothek—Staats- und Universitätsbibliothek, MS N 36	67	XVIII c.
6. Gla1 Glasgow, Glasgow University Library, MS Ferguson 8	67	XVII c.
7. Gla2 Glasgow, Glasgow University Library, MS Ferguson 110	67 (+1 add. image)	XVIII c.
8. Gla3 Glasgow, Glasgow University Library, MS Ferguson 208	67 (+number of add. images)	ca. 1600
9. Gla4 Glasgow, Glasgow University Library, MS Ferguson 230	67 (+1 double of the first image)	1634–1635
10. Gla5 Glasgow, Glasgow University Library, MS Ferguson 245	67	XVII c.
11. Gla6 Glasgow, Glasgow University Library, MS Ferguson 253	67 (+3 sketches)	XVII c.
12. Got Gotha, Forschungsbibliothek Gotha der Universität Erfurt, Chart. B 1507	40	XVII c. (?)
13. Jer Jerusalem, National Library of Israel, Sidney M. Edelstein Library, MS Ed. 1	67 (+number of add. images)	XVII c.

60 The versions in Copenhagen, Darmstadt, Dresden, Gotha, New Haven and Zagreb have not been previously described at all or only briefly and broadly as part of the group of *Coronatio naturae* MSS. The list at Adam McLean also consists of 41 manuscripts: <https://www.alchemywebsite.com/crownmss.html>, accessed May 26, 2021. There are significant differences between McLean's list and our list. Ours does not list 13 that are mentioned by McLean, while McLean lists 12 that we have not (yet) been able to see. However, we must assume a number of manuscripts that clearly exceeds 50. See about some of the manuscript collections: Anke Timmermann, "Alchemy in Britain II: Sir Hans Sloane's Manuscripts," *Book Collector* 68 (2019): 230–245; Anke Timmermann, "Alchemy in Britain III: John 'Soda' Ferguson and James 'Paraffin' Young," will appear in the next issue of *Book Collector*.

(cont.)

Abbreviation, city, library, and signature		Number of images	Dating
14.	Lis Lisbon, Biblioteca Nacional de Portugal, MS IL. 194	67 (+4 add. images)	ca. 1620 (?)
15.	Lon1 London, British Library, MS Kings 287	67	XVIII c.
16.	Lon2 London, British Library, MS Sloane 12	66	XVII c.
17.	Lon3 London, British Library, MS Sloane 1687	67	XVII c.
18.	Lon4 London, Wellcome Institute for the History of Medicine Library, MS Wellcome 2456	67 (+1 add. image, 1 sketch)	XVIII c. (?)
19.	Lon5 London, Wellcome Institute for the History of Medicine Library, MS Wellcome 3558	40 (+1 add. image)	middle of the XVIII c.
20.	Lon6 London, Wellcome Institute for the History of Medicine Library, MS Wellcome 3561	40 (+4 sketches)	XVIII c.
21.	Lon7 London, Wellcome Institute for the History of Medicine Library, MS Wellcome 4365	40	middle of the XVIII c.
22.	Lon8 London, Wellcome Institute for the History of Medicine Library, MS Wellcome 4366	40	end of the XVIII c.
23.	Long9 London, Wellcome Institute for the History of Medicine Library, MS Wellcome 6072	77	ca. 1800
24.	Lon10 London, The Warburg Institute, Michael Innes Collection, MS FGH 100	4 (+2 add. images)	ca. 1725
25.	Los1 Los Angeles, Getty Research Institute, MS Manly Palmer Hall 19 ^a	51	XVIII c.
26.	Los2 Los Angeles, Getty Research Institute, MS Manly Palmer Hall 50	40 (+4 sketches)	XVIII c.
27.	New1 New Haven, Beinecke Rare Book and Manuscript Library, MS Mellon 57	63 (+2 add. images)	1650–1710
28.	New2 New Haven, Beinecke Rare Book and Manuscript Library, MS Mellon 110	Unknown ^b	ca. 1760
29.	Oxf1 Oxford, Bodleian Library, MS Digby 127	67	End of XVI c.
30.	Oxf2 Oxford, Bodleian Library, MS Ashmole 1433	66 (only 16 are painted) ^c	XVI c.
31.	Oxf3 Oxford, Bodleian Library, MS Ashmole 1456	39	XVII c.
32.	Oxf4 Oxford, Bodleian Library, MS Ashmole 1490	68 (all schematic drawings)	XVI–XVII c.
33.	Par1 Paris, Bibliothèque de l’Arsenal, MS Arsenal 974	40	XVIII c.
34.	Par2 Paris, Bibliothèque nationale de France, MS Lat. 18.512	40	XVIII c.

a Seven images are still missing.

b The catalogue entry mentions a series of “alchemical processes depicted symbolically taking place within flasks.” Laurence C. Witten and Richard Pachella, *Alchemy and the Occult: A Catalogue of Books and Manuscripts from the Collection of Paul and Mary Mellon Given to Yale University Library*, vol. 3, *Manuscripts 1225–1671* (New Haven: Yale University Library, 1977), 641–649.

c William Henry Black, *A Descriptive, Analytical, and Critical Catalogue of the Manuscripts Bequeathed unto the University of Oxford by Elias Ashmole, Esq., M.D., F.R.S., Windsor Herald, Also of Some Additional MSS. Contributed by Kinglsey, Lhuyd, Borlase, and Others* (Oxford: Oxford University Press, 1845), 1171.

(cont.)

Abbreviation, city, library, and signature	Number of images	Dating
35. Par3 Paris, Bibliothèque Sainte-Geneviève, MS 1032	40	XVII c.
36. Rom1 ^d Rome, Biblioteca dell'Accademia dei Lincei, MS Verginelli-Rota 37	40	XIX c.
37. StA St. Andrews, St. Andrews University Library, MS 38190	21 (alchemical album with some Crowning illustrations)	1710–1712
38. Sot MS Sotheby's 289226 ^e	67	XVII c.
39. Ven Venice, Biblioteca Marciana, MS 2424	40	ca. 1697
40. Vie Vienna, Österreichische Nationalbibliothek, Cod. 11359	60	XVI c.
41. Zag Zagreb	awaiting study	late XVIII c.?

- d According to the catalogue of manuscripts in Rome (*Catalogo dei manoscritti del Fondo gesuitico*, Roma, 313–314), there is an 18th c. version of *Coronatio naturae* in the Biblioteca Nazionale Centrale di Roma, MS Gesuitico 473, but we have not been able to verify this. As we list only the manuscripts to which we have been given access (either the original or in digitalized form), we could not include MS Gesuitico 473 merely on the basis of a catalogue entry. The same holds for MS 399 from Universitätsbibliothek Leipzig, which we have not yet been able to see with our own eyes.
- e <http://www.sothebys.com/en/auctions/ecatalogue/2014/english-literature-history-childrens-books-illustrations-114404/lot.410.html>, accessed November 25, 2019.

Oxfi, the manuscript from the Digby Collection in the Bodleian Library (Oxford), should be considered as the leading manuscript.⁶¹ The analysis of *Coronatio naturae* in this essay is based on the sequence of 67 pictures in this manuscript (MS Digby 127), which was made very early, probably a few decades before 1600.⁶² The 41 manuscripts can be divided into two groups: those featuring a short cycle, generally of 40 images (Los2, Oxf3, Got, Lon5, Lon6, Lon7, Lon8, Par1, Par3, Rom1, Ven) and those consisting of a long cycle (often 67 images, although some with fewer and some with additional images). The manuscripts in Darmstadt (Dar), Los Angeles (Los1) and probably Yale (New2)⁶³ are parts of a single manuscript cut into three parts, inasmuch as all the

61 Kenelm Digby (1603–1665) was an English courtier and diplomat. He was also a highly reputable natural philosopher and astrologer and known as a leading Roman Catholic intellectual.

62 The version from the Digby Collection is bound together with three other manuscripts, all of which date to the 16th century. A catalogue entry states that the Bodleian Library also had later versions made by Simon Forman (1552–1611), an Elizabethan astrologer, occultist and herbalist active in London from 1590 (MSS. 1433, 1490).

63 We have seen two photographs of “flask series” from the Yale manuscript, which definitely form part of *Coronatio naturae*, one of which was not in Los1 version.

emblems in manuscripts Los₁ and New₂ were painted on smaller sheets and glued to the folios of the bound volume, and Dar consists of a set of sheets of emblems alone with no manuscript, among which some of the images are exactly the ones that are missing from Los₁⁶⁴ and some are copies of emblems in Los₁.

Since the manuscripts of *Coronatio naturae* contain many similar images drawn by the copyists, it is not surprising to find a number of mistakes in the images themselves, in their numbering and order, or else that the copyists added something themselves or, on the contrary, skipped some elements. In the next sections these peculiarities are retraced in order to provide a complete overview of all the versions and their iconography for future reference by scholars.

7 Image Order

In these manuscripts it was important for the author to illustrate the alchemistic processes with the help of a finely honed sequence of vial pictures. For identification purposes, each picture bears a heading in which a chemical reaction is addressed that recurs in cycles. Title and motif fix a state whose dynamics are conveyed within the framework of a series of pictures. It is highly possible that *Coronatio naturae* was conceived as an illustrated manual-cum-aide memoire, visualizing all the stages in the preparation of the elixir. That is why the order of the images was remarkably important. Nonetheless, this rule did not inhibit the multiple reordering of images from version to version. Whether such variations were an artist's decision or a visualization of amendments by the alchemist to his methods and procedures based on his work in the laboratory is unclear.

The standard order which we find for example in Ox₁ is the following: 1: Planets; 2: Mercurius; 3: Preparation; 4: Division; 5: Distillation; 6: Acuation; 7: Green Lion; 8: Coitus; 9: Vegetable, animal, mineral; 10: Calcination (1); 11: Sublimation (1); 12: Solution (1); 13: Generation; 14: Putrefaction; 15: Conception; 16: Impregnation; 17: Fermentation (1); 18: Separation (1); 19: Conjunction (1); 20: Separation (2); 21: Conjunction (2); 22: Separation (3); 23: Conjunction (3); 24: Separation (4); 25: Conjunction (4); 26: Separation (5); 27: Unnatural fire; 28: Sunrise; 29: Fermentation (2); 30: Purgation; 31: Separation (6); 32: Conjunction

64 The sheets from Dar that are missing from Los₁ comprise number 28 (fermentation), 42 (solution), 44 (sublimation), 48 (multiplication), 51 (solution), and 45 (conjunction).

(5); 33: Separation (7); 34: Conjunction (6); 35: Separation (8); 36: Conjunction (7); 37: Exaltation (1); 38: Quintessence (1); 39: Fixation (1); 40: Projection; 41: Multiplication (1); 42: Imbibition (1); 43: Solution (2); 44: Congelation (1); 45: Conjunction (8); 46: Sublimation (2); 47: Calcination (2); 48: Fixation (2); 49: Multiplication (2); 50: Fermentation (3); 51: Imbibition (2); 52: Solution (3); 53: Congelation (2); 54: Sublimation (3); 55: Calcination (3); 56: Quintessence (2); 57: Fixation (3); 58: Multiplication: Fermentation; 59: Imbibition (3); 60: Calcination (4); 61: Sublimation (4); 62: Solution (4); 63: Congelation (3); 64: Conjunction (9); 65: Exaltation (2); 66: Quintessence (3); 67: Fixation (4).

If one takes a closer look at the order of the images in all the complete manuscripts in our list, it is noticeable that a number of manuscripts depart from this order. The most common variation is that the order of images 3, 4, and 5 differs from the standard scheme (in 12 out of 27 manuscripts, 9 of them in the same manner). Some versions have adopted their own image order, as for example Gla3 with 24 illustrations shifted, or Ca with 14 shifted.

Based on the differing order of the images in the series (as well as on the estimated dating), we can tentatively divide the manuscripts into six different groups consisting of four manuscripts and the relative copies for which they served as samples or models. The first group is formed of standard manuscripts without any deviations in the set order—these are the short cycle versions Got, Los2, Lon5, Lon6, Lon7, Lon8, Oxf3, Par1, Par2, Par3, Rom1, and Ven; and the long cycle versions Gla6, Lon1, and Lon3. The second group consists of Cop1, Cop2 and Vie, which are three exact copies with the same image order and iconography, in which Cop1 and Cop2 were created after Vie (which was probably a manuscript from the collection of Rudolf II). New1 forms the third group together with Gla3, Lis and Lon4; although Gla3 contains many more deviations in the order of the vials, the sequence fundamentally coincides with that of the other two manuscripts, and there is a resemblance between the iconography and the additional images in all four. The fourth group consists of Gla5 and Lon2; the fifth group of Gla1, Jer and Oxf1; and the sixth of Dre and Los1 (+Dar+New2).

The oldest MS of the third group is Gla3, which dates back to the beginning of the 17th c. Given that its multiple departures from the standard are just the same as those in Lis (ca. 1620) and are only partially present in the later copies New1 (1650–1710) and Lon4 (18th c.), it follows that they were copied from the same source, which has not come down to us. In the fourth group Gla5 and Lon2, which were produced in the 17th c., are similar both in their iconography and in their iconographical abnormalities; a vivid example is the crowned ouroboros in the image no. 41. But these two MSS differ from the image no. 9; apparently they were copied from the same source, but by different copyists.

Oxf1 and Oxf4 are the oldest existing copies of *Coronatio naturae*. It is logical to assume that in the fifth group MSS Gl1 and Jer, both from the 17th c., were copied sometime after the creation of Oxf1. In the sixth group Dre seems to be the oldest manuscript; moreover, it is the only complete one in this group. Thus, it appears obvious that Los1 (+Dar+New2) is a copy of Dre, despite minor differences in the order of the images.⁶⁵

8 Some Remarks on the Iconographical Tradition

It can be assumed that *Coronatio Naturae* was the first manuscript to adopt from *Donum Dei* the idea of a constantly changing sequence of images inside a flask, and to expand on it to the extent they became moving images. If one visits the “treasure house of books” that was the library of Duke August of Brunswick-Wolfenbüttel in Lower Saxony (Germany) one will find the late medieval booklet entitled *Donum Dei*. It has a deceptively inconspicuous appearance; it is only fifteen centimetres high and consists of just eighteen parchment sheets. The manuscript is remarkable because it presents images exclusively in the shape of vials. Corresponding to the twelve-tiered *Opus magnum*, twelve different pictures of vials are shown.⁶⁶ Vials painted in black reflect the first level of blackening (*nigredo*). At this stage it is necessary to trace the empirically found substance back to a primal substance common to all bodies, the *materia prima*, which in its lack of structure takes on the characteristics of decay (*mortificatio*). One must therefore imagine within this vial a malodorous, putrefying black soup (Fig. 10), in which the outline of a physically uniting human couple is clearly visible in an even stronger black—as a glimmer of hope so to speak.⁶⁷

65 Image no. 1 in Los1 actually appears at the end of the MS, but this is only due to the fact that all of the images are painted on smaller sheets sometimes randomly glued to the book pages. The order in which the images of distillation, acuation, and division are arranged differs in Dre and Los1.

66 Sven Limbeck, “Das Opus magnum in zwölf Bildern,” in *Goldenes Wissen: Die Alchemie—Substanzen, Synthesen, Symbolik*, ed. Petra Feuerstein-Herz and Stefan Laube (Wiesbaden: Harrassowitz, 2014), 246–256.

67 According to alchemists, transmutation could only take place when substances that are polar opposites enter into a constructive connection, and this tension between substances was often depicted metaphorically; here the merging is represented by the parable of the union of the masculine and the feminine. Marjorie Elizabeth Warlick, “Fluctuating Identities: Genders Reversals in Alchemical Imagery,” in *Art & Alchemy*, ed. Jacob Wamberg (Kopenhagen: Museum Tusulanum Press, 2006), 103–129.



FIGURE 10
The production of *materia prima* in the nigredo phase, *Donum Dei*, parchment, 15th century WOLFENBÜTTEL, HERZOG AUGUST BIBLIOTHEK, COD. GUELF. 77.2, FOL. 5^v

The oldest alchemical images depicted in the frame of vessels date back to the second half of the 14th c. In the treatise written in Middle Dutch and entitled *Alchemical Verses Written in the Language of Lower Germany*,⁶⁸ the alchemist Gratheus creates a story about three persons: Ylarius, Virgo, and Multipos. In one of the flask images Ylarius and Virgo want to be together, but their enemy Multipos disturbs their intercourse. In the next flask Ylarius and Virgo have sexual intercourse in an attempt to conceive a child called the “primus puer,” and both are depicted as terioanthropomorphic creatures. The shape of the flasks is strongly reminiscent of a womb, in an iconography probably derived from medieval anatomical books. These images do not form a large series as in *Coronatio* and form part of the heterogeneous imagery of the period without flask frames.

68 Österreichische Nationalbibliothek, Vienna, Cod. Vind. 2372. See Helmut Birkhan, *Die alchemistische Lehrdichtung des Gratheus filius philosophi in Cod. Vind. 2372: Zugleich ein Beitrag zur okkulten Wissenschaft im Spätmittelalter* (Wien: Verlag der Österreichischen Akademie der Wissenschaften, 1992).

Other early examples of allegorical vials with planets, humans or animals are limited. *Aurora Consurgens*, which was created between 1410 and 1420, contains at least four images of animals, humans or plants inside alchemical vessels.⁶⁹ There are planets, a raven, a phoenix and an ouroboros-dragon in the single image to be found in the 15th c. copies of Cadolzburg's version of the *Book of the Holy Trinity*⁷⁰ written by Ulmannus in 1433. The same and other flask images are presented in the modified version known as *Pandora*.⁷¹ Different animals appear within a flask in the Czech treatise *The Rightful Way* written in 1457: "lion is gold, scorpion is our mercury /?/, crayfish /?/ is Sulphur of Philosophers, eagle is air."⁷² There is a vial containing the Moon, two birds and an ouroboros-dragon holding four flowers in its paws in a 15th-century alchemical miscellany from Krakow.⁷³ But none of these can match the complex iconography of *Coronatio naturae*; there are never more than a few vials, and sometimes only one, with almost the same set of animals within.

There are two images of flasks in the famous MS Harley 2407 from the second half of the 15th c., which also contains an alchemical version of Lydgate's *The Churl and the Bird*.⁷⁴ Some of the pictures from this manuscript, especially a sequence featuring a dragon (107^r–111^r), bear the closest resemblance to the iconography of *Coronatio naturae* that we have found. In the first flask, which is shown separately before the vial series (16^v), the images of the Sun and the Moon approach each other inside the vessel, producing red rays that shine down on the naked couple ready to make love: they are flanked by two dragons

69 Zürich, Zentralbibliothek Rh. 172.

70 Dresden N. 110 fol. 146^r (1492); Wolfenbüttel, Cod. Guelf. 188 Blank. 291 (1471); Prag, Nationalbibl., Cod. XXIII.D.135 (15th c.).

71 Philadelphia (Pennsylvania), Chemical Heritage Foundation (c. 1450–1475), The University of Manchester Library, MS German 1 (15th c.).

72 Praha, Národní museum, Cesta spravedlivá. V H 21. See Vladimír Karpenko, "The Oldest Alchemical Manuscript in the Czech Language," *Ambix* 37 (1990): 61–73; Otakar Zachar, *Mistr Antonia z Florencie Cesta spravedlivá v alchymii (1457)* (Praha: Šimáček, 1899); Benedek Láng, *Unlocked Books: Manuscripts of Learned Magic in the Medieval Libraries of Central Europe* (State College: Pennsylvania State University Press, 2010), 155–157. John Ferguson, *Bibliotheca Chemica* (Glasgow: Maclehose, 1906), 2: 10; Joachim Telle, "Laaz, Johannes v.," in *Lexikon des Mittelalters* (München-Zürich: Artemis&Winkler 1991), 5: 1601.

73 Kraków, Biblioteka Jagiellońska, MS 837 is one of the oldest alchemical manuscripts with allegorical illustrations. It contains various medical works by Pseudo-Galenus, Pseudo-Hippocrates and Rasis, as well as others (*De pestilentia*, etc.). See: *Catalogus codicum manuscriptorum medii aevi Latinorum qui in Bibliotheca Jagellonica Cracoviae asservantur*. vol. 6, *Numeros continens inde a 772 usque ad 1190* (Cracoviae: Bibliotheca Jagellonica, 1996), 338–344.

74 London, British Library, Harley 2407. See R.H. Bowers, "Lydgate's 'The Churl and the Bird,' MS Harley 2407, and Elias Ashmole," *Modern Language Notes* 49 (1934): 90–94.

and there is a toad between them (Fig. 11). In a second, separate image (57^v) there is a vial with the same couple within, they are immersed in a golden liquid and surrounded by a dragon forming a crescent Moon with a toad on it, while above a dove soars out of the vessel into the air. Most of this imagery, particularly iconographic elements specific to English alchemy such as the toad and the crescent Moon, are also present in another famous illustrated alchemical manuscript produced in England, *Ripley's scroll* (mid-15th c. or later),⁷⁵ as well as in *Coronatio Naturae*. This could not be a random coincidence, as these treatises were all originally written in England. The two artists may have been drawing on the same familiar pool of figures and tropes that circulated in 15th-century England. We see very similar, but still different imagery, which could suggest that the concept of a consistent series of vials with moving dragons etc. was not entirely invented by the illuminator of *Coronatio naturae*, but that this treatise possibly relied on *Ripley's scroll* and such important alchemical compilations as MS Harley 2407 and others, which did not survive.

9 Extra Images and Iconographical Abnormalities

The history of the copying and reception of the *Coronatio* manuscripts is characterized not least by the unique extra images, which usually appear at the beginning or the end of the cycle, making them easier to append to the logic of the visual narrative without affecting the basic meaning of the original *Opus magnum*. Among the unique images we find title pictures that serve as frontispieces for manuscripts Cop1, Cop2 and Vie.⁷⁶ Instead of the usual astrochemical diagram, they allegorically depict an alchemical furnace in the form of a building in which three flasks denoting three principles—sulfur, mercury and salt—are being heated. In Cop1 they are labeled with the words *mascula*, *foemina* and *corpus*, i.e., the male, the female, and the body (Fig. 12). The female and male flasks are connected by a tube, while plant stems grow out of the central one, ending with the images of fruits representing metals/planets or their pictograms. Next to them there is a flower, a bee, crossed bones and a toad. Above the sign of mercury which crowns the image the words *prima materia*

75 Oxford, Bodleian Library, Bodl. Rolls MS 1. See R. Ian McCallum, "Alchemical Scrolls Associated with George Ripley," in *Mystical Metal of Gold*, ed. Stanton J. Linden (New York: AMS Press, 2007), 161–188.

76 Likewise the manuscript that Barchusen used as his model began with a kind of frontispiece; see section no. 5 in this paper.



FIGURE 11
Sun, man, woman and toad in a vial
BRITISH LIBRARY, MS HARLEY 2407,
F. 16^v

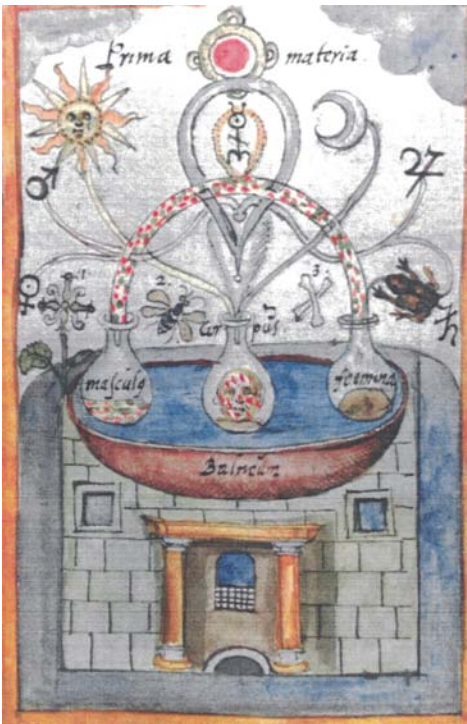


FIGURE 12
An additional image serving to decorate
the title page
COPENHAGEN, DET KONGELIGE BIB-
LIOTEK, MS 1785, FOL. 2^v

are written. This image shows the main aim of the possessor of *Coronatio*—to make a Philosophers' Stone—more clearly and expressively than the one from the standard manuscript.

Lon5 has a very unusual extra image: the standard image which allegorizes sexual intercourse (N^o 8) is replaced with a picture of the lion entitled *Les Vertus* [the Virtues] (Fig. 13). It was a bold decision on the part of the illuminator to draw a second lion in the series and thereby balance the fauna of the treatise, which contains numerous images of dragons on a par with birds. Lon5 ends up with an additional image of 8 letters corresponding to the different alchemical substances and two French mottoes written in a circle.

There are many departures from the standard manuscript in the different alchemical operations depicted in *Coronatio naturae*. For example, there is an entire forest instead of the usual couple of trees in the image of *mercurius* (no. 2) in Gla2. The phoenix in the image of *quinta essentia* stage (N^o 38) is replaced with a bird similar to sparrow (Los1) or even with an owl (Lon3, Gla5). In Gla3 and Lis the shape of the flask also changes, while in Lis the bird is absent. The projection (no. 40) is depicted in Lon1 as a standard broken flask but with the anatomical model of a man standing on it (Fig. 14). It is highly possible that the image of a man depicted above the vial as the result of an alchemical process symbolizes the primacy of humans over nature, or it could be an allegory of the medical properties allegedly possessed by the Philosophers' Stone.

The image called *vegetall anymall mynerall* (no. 9) probably is the one showing the most variance in the *Coronatio* manuscripts (Fig. 15). There could be two (Dre, Gla2, Gla4) or three (Cam, Cop1, Cop2, Gla1, Gla3, Jer, Lis, Lon4, New1, Oxf1, Vie) trees, but what is more interesting, also two trees and a snag (Got, Los2, Lon2, Rom1, Ven), or even two trees and something similar to a leg (sic!) (Gla5, Gla6, Lon1, Lon3, Lon7, Lon8, Oxf3). The reason why the leg appears in the images may lie in the way in which the snag is depicted in some manuscripts, where it is drawn with a pencil: it looks very similar to a leg. Some copyists could perceive this incomprehensible snag depicted as a leg and then later illuminators produced other, more realistic copies with the trees and a human leg (Lon5, Lon6, Par1, Par2). The leg, although amputated, should embody the realm of living beings, it perfectly reflects the idea behind the title: the unity of the mineral (rock), vegetative (trees) and animal (leg) worlds.

The most detailed picture we've seen so far in all the manuscripts is the *mercurius* (no. 2) in the Zagreb (Zag) version, which also contains many departures (Fig. 16). Conventionally this kind of image has the river, the rock, and in the background a tree on a cliff. But in Zag there is an entire story: shepherds lead a flock of sheep out of the stable on the left, while on the right a man in a hat

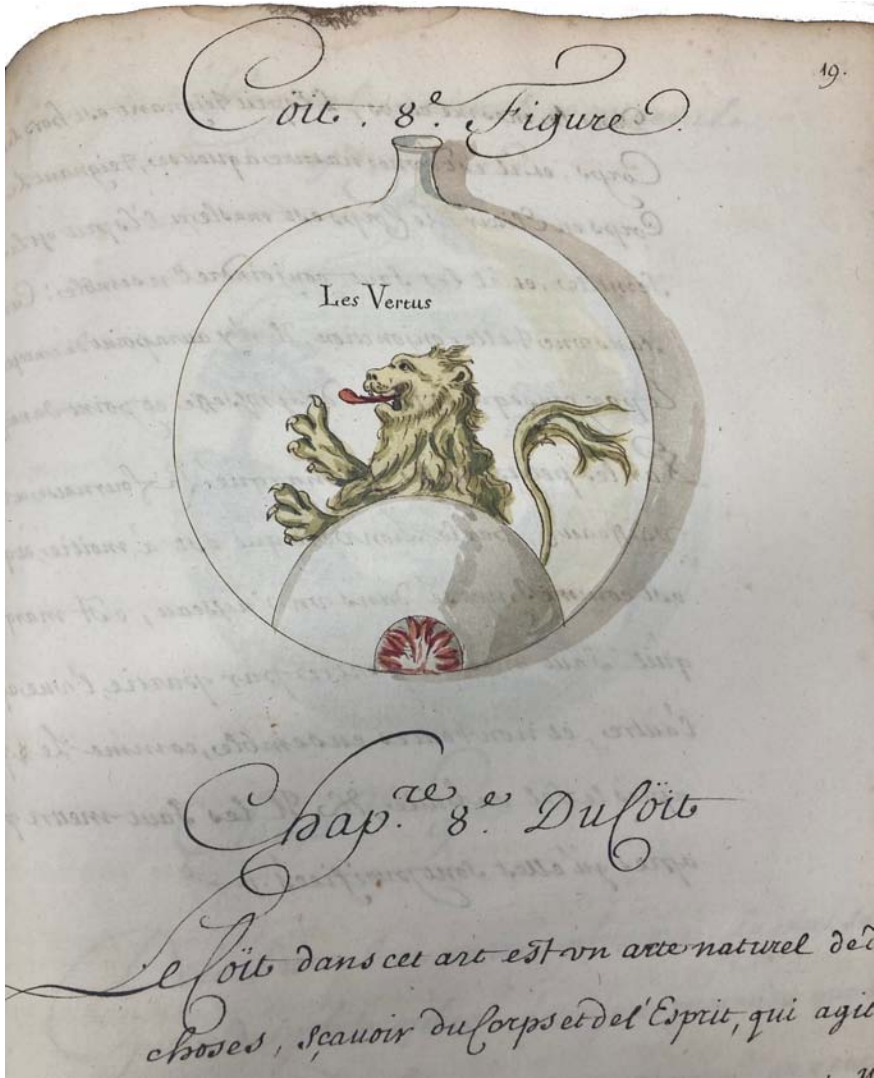


FIGURE 13 The standard image of sexual intercourse is replaced with the picture of a lion, entitled *Les Vertus*
 LONDON, WELLCOME INSTITUTE FOR THE HISTORY OF MEDICINE LIBRARY, MS WELLCOME 3558, P. 19

is trying to fish coral out of a stream with a stick. This uncommon alchemical motif of gathering coral can be found only in one other image, again from the Zagreb collection.⁷⁷ There is an androgynous figure with a caduceus in each

77 This is probably the *Kinder-Bett Des Steins der Weisen* (Hamburg: Liebernickel, 1692).

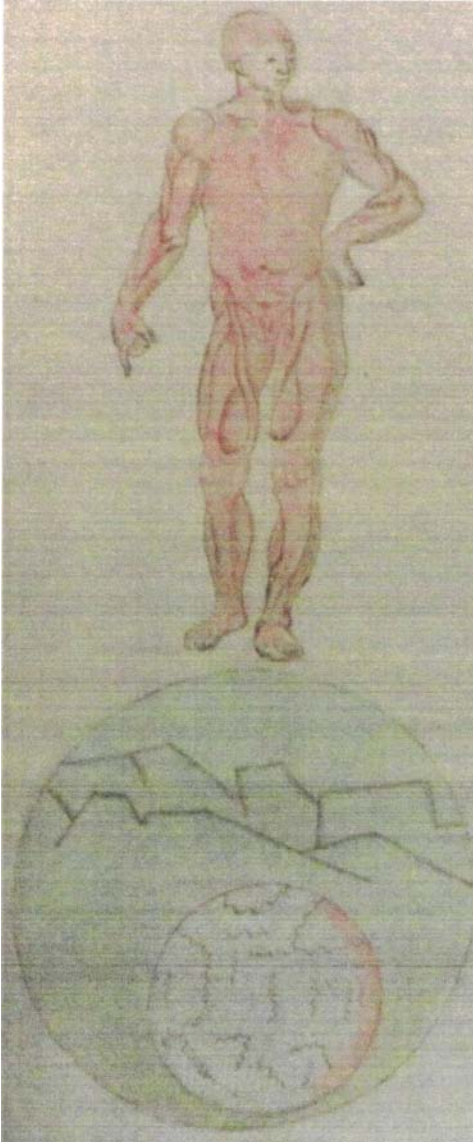


FIGURE 14
 Projection: A broken flask surmounted
 by the anatomical drawing of a man
 LONDON, BRITISH LIBRARY, MS
 KINGS 287, FOL. 81^R

hand. In a heraldic composition, on the left Moses stands producing water from a rock with his staff, while on the right is the figure of the coral gatherer holding a stick and wearing a hat. The coral imagery could be associated with beliefs regarding the magical properties of corals as talismans. In addition, the coral is a prime example of camouflage, an item whose nature, lying somewhere between mineral, plant and living being, cannot be precisely classified. It was



FIGURE 15 The unity of the mineral (rock), vegetative (trees) and animal (leg) worlds
PARIS, BIBLIOTHÈQUE NATIONALE DE FRANCE, MS LAT. 18.512, P. 51

also believed that both the caduceus and Moses' staff were magical wands, and both Hermes and Moses were considered to be masters of the alchemical arts. The unique drawing from Zagreb shows how intensively the motif of mutability also radiates onto individual accessories of the representation.

Often variations can be observed in the manuscripts, where their creators tried to rethink the traditional series by making images three-dimensional, or more detailed or elaborate. But in any case, adding extra images or producing

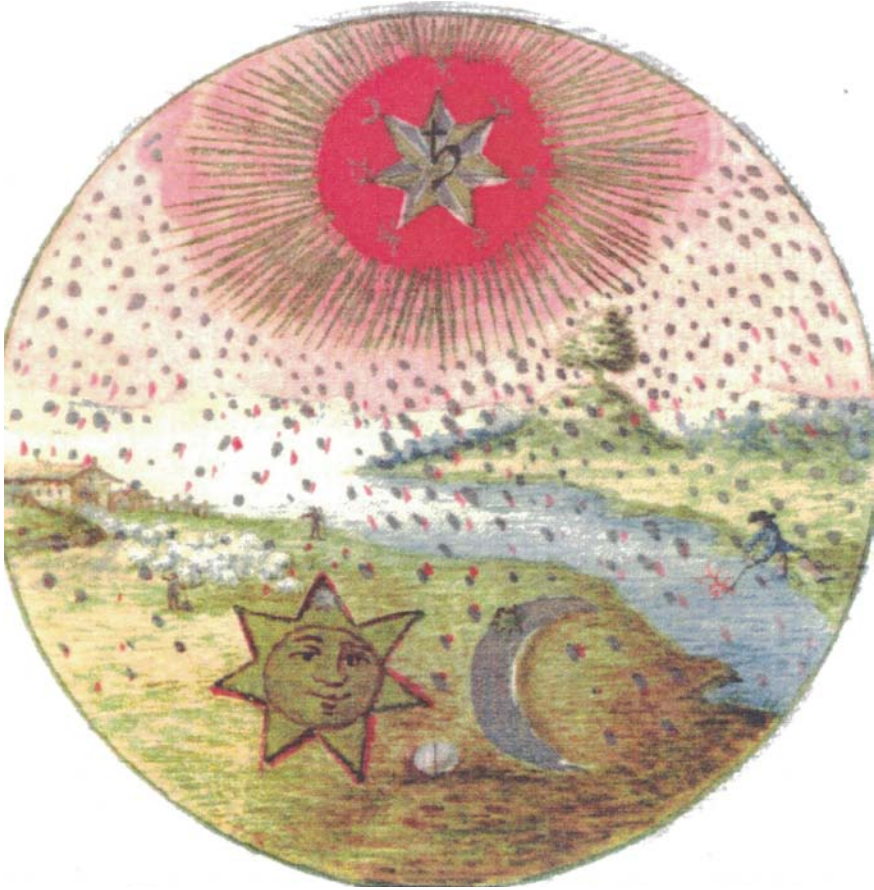


FIGURE 16 Between sheep and coral
ZAGREB, NACIONALNA I SVEUČILIŠNA KNJIŽNICA

different versions of the old ones was an attempt to diversify the copies of *Coronatio*, which generally were commissioned by aristocratic patrons. It was very important for collectors to possess an original manuscript, and not a mere copy. Again, even the incorporation of variations or extra images did not detract from the authoritativeness of the manuscript as an alchemical text: it remained the *Coronatio Naturae*.

In the *Coronatio Naturae*'s series of vial paintings, the significance of the imagery extends far beyond its illustrative function. The question whether illustrations in a codex or book are limited to making verbalized ideas visible or whether they also have an independent effect by compensating for deficits in the textual culture, could be fruitfully explored by studying a combination of the various versions of this remarkable manuscript.

Acknowledgments

Stefan Laube wrote sections 1–6; Sergei Zotov wrote sections 7–9. Both authors read and approved the final draft of the paper. The overview and inventory provided here was made possible through many research trips made during the DFG-project *Bilder aus der Phirole: Untersuchungen zur Bildsprache der Alchemie in der frühen Neuzeit* (Herzog August Bibliothek Wolfenbüttel, principal investigator: PD Dr. Stefan Laube).