THE UNIVERSITY OF CHICAGO

UNFOLDED WORLDS: ALLEGORY, ALCHEMY, AND THE IMAGE AS STRUCTURE OF KNOWLEDGE IN EARLY MODERN NORTHERN EUROPEAN SCIENTIFIC BOOKS

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE DIVISION OF THE HUMANITIES

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF ART HISTORY

BY

ALEXANDRA MARRACCINI

CHICAGO, ILLINOIS

JUNE 2018

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“The library will endure; it is the universe. As for us, everything has not been written; we are not turning into phantoms. We walk the corridors, searching the shelves and rearranging them, looking for lines of meaning amid leagues of cacophony and incoherence, reading the history of the past and our future, collecting our thoughts and collecting the thoughts of others, and every so often glimpsing mirrors, in which we may recognize creatures of the information.”

— Jorge Luis Borges, ‘The Library of Babel’

By this art you may contem
plate the variation of the 23 letters .
. .The Anatomy of Melancholy, part 2, sect. II, m
em. IV. The universe (which others call the Library)
is composed of an indefinite and perhaps infinite number
of hexagonal galleries, with vast air shafts between,
surrounded by very low railings. From any of the
hexagons one can see, interminably,
the upper and lower floors.

Abstract

"Unfolded Worlds: Allegory, Alchemy, and The Image As Structure of Knowledge In Early Modern Northern European Scientific Books" focuses on alchemical book illustration. It places the corpus of alchemical images 1450-1650, found as both print and manuscript in significant British collections, within the broader scope of the intellectual history of Northern European books. I argue that alchemical book images do the essential work of making humanist arguments about matter as allegory, and transmitting those arguments across space and time. These images simultaneously serve as sources of beauty, codes for laboratory procedures, and statements about the order of the universe and the position of man in it

Specifically, my first section focuses on Elias Ashmole, antiquarian, scientist and founding member of the Royal Society, and in particular on his alchemical and botanical manuscripts and their relationship to one another. In addition to my previously published work on the Ripley Scrolls, mysterious 25-foot long encoded alchemical symbolic manuscripts, I also draw out a new Neo-Platonic reading of embedded and recovered knowledge in alchemical imahes.

My second thesis section focuses on Glasgow MS Ferguson 6, whose illustrations reflect the tendency of alchemical material in particular to draw both text and images back from the print corpus into manuscript again. Here I discuss the intentional use of manuscript as a way of conveying meaning and change outside the basic copied textual material. I also propose a framework for the alchemical miscellany not as a hodgepodge, but as a carefully selected whole within a general epistemology that frames the acquisition of secret knowledge as physical, mental, and spiritual desire.

I also address, in my third chapter, garden books and alchemical books taken together within the sphere of an Early Modern library. The illustrated borders of Elias Ashmole's published print anthology, the *Theatrum Chemicum Brittannicum,* and Bodleian MS Ashmole 1423, a manuscript formula book with unique botanical-themed illustrations and intriguing garden fauna, form key case studies. This chapter discusses the relationship between antiquarianism and the materiality of the book, and that of the garden and garden literature, in light of 17th century conflicts and ideas about how to create a more perfect universe in light of man's ultimately fallen state. The role of the archive and garden as salvific technology is connected to alchemical book illustration as a locus of these intersecting beliefs and ideas, all within a period of ecological change and growing awareness of both the botanical and chemical processes of nature.

Finally, my last thesis section draws these themes together, employing them in a study of Michael Maier's *Atalanta Fugiens*. This emblem book, printed by the house of Merian and De Bry, references an account of the Palatine wedding procession and the designs for the palace garden at Heidelberg by Salomon De Caus. I argue that this book is a means of reading alchemical secrets embedded within the *Hortus Palatinus* and the broader world, and that it also addresses essential questions about the idea of re-creating a lost Edenic paradise, universal languages of truth, and the interconnectedness of text, collection, image, textile, horticulture, dance, and song in the Early Modern learned worldview.

In viewing the Ripley Scrolls, the *Theatrum Chemicum Brittannicum*, MS Ferguson 6, and the *Atalanta Fugiens*, among many other books in context, my doctoral thesis connects these key

cases with reference to period literary works. I raise new and questions about the relationship between images, language, and meaning creation in Early Modern scientific books.

Dedication

For my family, who have always given me endless love, curiosity, and books: Robin Marks, John Marraccini, Miranda Marraccini.

(& Lewis, Oberon, Pom, and Flora)

The distribution of the galler
ies is invariable. Twenty shelves, five long
shelves per side, cover all the sides except two;
their height, which is the distance from floor to ceiling,
scarcely exceeds that of a normal librarian. One of the free
sides leads to a narrow hallway which opens onto
another gallery, identical to the first and to all
the rest. To the left and right of the
hallway there are two very small

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Figure List

ALL FIGURES ARE OMITTED FOR REASONS OF COPYRIGHT

Chapter 4: Figures

Preface: Alchemical Images, Folded And Flying

CECI N'EST PAS UNE GRUE PLIÉE.

One of the hardest things I learned whilst writing this dissertation was how to fold a good origami crane. The initial folds are easy. All origami birds have the same elongated triangular base, which you make by unfolding and refolding the square paper at an angle. The hardest part comes at the end, which, when you are making tiny cranes, requires a delicate manipulation of the fingers. A mountain becomes a valley, which is to say you reverse the fold on the crane's tail and neck in the other direction, something the paper doesn't naturally want to do, but that is crucial for the delicate tail and head. The tail you angle slightly beneath the newly creased wings, but the head you press out just a bit for a head and a beak. How much you press, and the angle and shape, are up to you. This is what makes it a bird and not anything else at the end.

Writing on antiquarianism and specifically alchemical books as its object is very much like folding such a crane. The base, the collections themselves-- in this case many of Elias Ashmole and some elsewhere—is as common in structure as many seventeenth century libraries are. It is in the details, the reversal of folds, when one begins to examine the relationships of antiquarians, patrons, and readers to these books, that things get a bit tricky. This doctoral thesis is not a hierarchical tree or argument. It is not a great city in which one can be a flâneur and meander happily. It is both extremely precise and lined

carefully in certain matters, and in others wholly a chance of art, a mountain fold reversed into a valley and then made crooked, ever so slightly, into the likeness of a bird's tapered head. This is unusual, but with such unusual material to write on, it is perhaps better to fold the paper to the archive and not the other way around.

Since this work of art history is inseparable, as Sidney would have it, from the passport of poetry, allow me to lay out the chapters for you using the poetry that is integral to them all. There is a reason alchemy is often called the language of the birds, and here I steal Milton's description of their creation—including the crane specifically-- from Book VII of *Paradise Lost* (lines 425-36):

> Part loosly wing the Region, part more wise
> In common, rang'd in figure wedge their way,
> Intelligent of seasons, and set forth
> Thir Aierie Caravan high over Sea's
> Flying, and over Lands with mutual wing
> Easing their flight; so stears the prudent Crane
> Her annual Voiage, born on Windes; the Aire,
> Floats, as they pass, fann'd with unnumber'd plumes:
> From Branch to Branch the smaller Birds with song
> Solac'd the Woods, and spred thir painted wings
> Till Ev'n, nor then the solemn Nightingal
> Ceas'd warbling, but all night tun'd her soft layes….

Chapter One, "Open Secrets," loosely wings the region of the corpus of alchemical images the whole thesis treats. It describes and explains the iconography of Elias Ashmole's copies of the Ripley Scrolls, twenty-five foot long cryptic alchemical manuscripts now held in the Bodleian. This is the first scholarly explanation of this iconography in detail, and draws on the background work of Jennifer Rampling and Stanton Linden on Ripley's textual production, but even more on the wider work of

Francis Yates on alchemy and hermetic humanism and philosophy. I aim to be intelligent of the season in which the Scrolls were made, including in this chapter an analysis of the idea of chemical ensoulment and its Brunian and Ficinian roots.

This first chapter, 'Open Secrets', touches on a theme that I return to again and again in the thesis: the very small and the very large. The link between macro-and microcosm in alchemical discourse is as fundamental as the triangular folds that underpin every origami bird. It links almost all of the texts and images in this thesis like underpinning, unnumbered plumes, holding them both together and aloft in connection across chapters. While I begin with this theme in the tiny roundels on the giant scrolls, I return to it in MS Ferguson 6, other alchemical and learned manuscripts in Ashmole's collection, and finally in the printed copy of the *Atalanta Fugiens*, an alchemical emblem book. Origami cranes can stand up on their own because of the four creased 'legs' that form at their base when folded correctly. For this thesis, the macro- and microcosm are those folds, supporting the base of wings and feathers.

Chapter Two, 'Fleshy Wisdoms', is an analysis of Glasgow MS Ferguson 6, a previously unexamined alchemical miscellany. This miscellany contains a wordless copy of the famous *Aurora Consurgens*, but also much more. It is an 'Aierie Caravan', darting between manuscript and print as media, because it copies the basic forms of the Aldine *Pretiosa Margarita Novella*, and yet alters its images in vivid paint. The phenomenon of alchemical texts re-entering manuscript back from print is interesting in this period, and this chapter examines both this concept and the idea of a miscellany as the desire for

knowledge. This desire is also profoundly bodily, referencing Wisdom as an embodied female figure.

The scholarly influences in the literature I use in Chapter Two are deep and varied. I question the primacy of text as a mode of humanist transmission, both engaging and sparring with Anthony Grafton's *Defenders of The Text*. Leah De Vun and Barbara Newman each provide helpful frameworks for engaging with bodies and wisdom, including those derived from the manuscript images of the Virgin Mary. Pamela Smith's work on alchemy, commerce, and artisan practises, underpins the idea that this one manuscript collection, bound in an intact sixteenth century volume, could have come from many hands, illustrators, and intellectual influences. These influences come on mutual wing, as it were, with Lawrence Principe and William Newman's probing of the term 'alchemy' and what it means for Early Moderns to use this word, but this is something I intend to return to in the conclusion of the thesis when you have seen what I make of it.

Chapter Three, 'Vegetable Love', again returns to the collection of English antiquarian, scientist, and early founding member of the Royal Society, Elias Ashmole. Using the work of garden historians, particularly Leah Knight, I try to situate what gardens meant to Early Modern antiquarians and collectors, particularly in their context as natural attachments to libraries. The key purpose of this chapter is to link vegetal and alchemical worlds that existed side-by-side in Ashmole's books and collections, which might not otherwise be immediately connected by scholarship.. This chapter is particularly

inseparable from its poetic sources, from Drayton to Evelyn and Marvell, and is a testament to the inseparable nature of writing such narrative history. The Prudent Crane steers by Windes and Aires, but runs along the magnetic ley lines and the points of stars set into the orb of the world, and for this chapter, English poetry about the green world is the line of migratory passage.

In analysing the border engravings of Ashmole's published compendium, the *Theatrum Chemicum Brittannicum*, I attempt to bridge the English-Continental divide, which in truth seems not much of a divide at all during this period of the 'Republic of Letters' and frequent knowledge exchange. The engravings animals are of particular interest, both for their Dutch natural-historical origins (evoking the work of DaCosta Kaufmann on Hoefnagel in particular), and for their role in establishing a proto-nationalist English alchemical authority. Finally, they also link the printed book to Bodleian MS Ashmole 1423, again a previously untreated manuscript, that is an alchemical formula book contain lively garden-themed drawings added by its copyist. These illustrations include delightful watermelon-coloured moths, nominally ammonium sulfate, that 'spred thir painted wings' ever larger across the book's pages. These moths raise the questions Christoph Lüthy and Alexis Smets pose about scientific diagrams, but also the questions Sianne Ngai proposes about the theory of cuteness and affect. What are period readers of alchemical texts supposed to feel? You look at an origami crane with a certain gentleness that you do not see in the sheet of paper it was folded from.

Chapter Four, ‘Pattering in Winter’, is a description of how the content of the alchemical emblem book the *Atalanta Fugiens* is part and parcel of the designs for Salomon De Caus’ *Hortus Palatinus* and other modes of artistic and linguistic expression during the brief reign of Palatine Elector Frederick V and his English bride, Princess Elizabeth. It is consciously in dialogue with Walter Benjamin *Ursprung des deutschen Trauerspiels* and Benjamin’s prescient conception of the baroque and the idea of loss in modernity. ‘Patterning in Winter’ is the solemn Nightingal of this flock. It solaces the wood but also laments as night settles. Like Benjamin’s own work, it darts from branch to branch—an ephemeral bird made of paper, a sketch—rather than a traditional essay. This is intended as a scholarly intervention to change how we treat the material of both the emblem book and the Gesamtkunstwerk in the alchemical world of the Palatinate. While work like that of William Poole on universal language, John Steadman on representations of truth in Early Modern rhetoric, and Tara Nummedal’s book on alchemy in the Holy Roman Empire give this chapter the winds on which to take flight, it is also fundamentally different from all of these in literary character.

The lands over which all these chapters range and nest are in many ways, very close to Milton’s own. Each chapter asks how Early Modern alchemists sought both to pick the fruit of the Tree of Life, and that of the Tree of Knowledge, and if such a thing is really a good idea at all. In a fallen, Post-Lapsarian world, to we attempt to rebuild, to remake, to fashion anew with all the knowledge that God has imbued in nature? Or is it all a fevered dream, an impossible stone, the image of a Bird of Hermes that bites its own wings? In reading this thesis, and encountering its historical actors and their books and collections,

as they fold and crease into one another, such a question is not truly answerable. Yet, it can be observed, in passing as one would a crane, pausing to dip its bill into a running stream for sustenance.

Alexandra Marraccini

Bodleian Libraries, RBMSS Reading Room

7 November 2017

Chapter 1: Embryon Atoms

"For Hot, Cold, Moist, and Dry, four champions fierce,
Strive here for maistrie, and to battle bring
Their embryon atoms: they around the flag
Of each his faction, in their several clans,
Light-armed or heavy, sharp, smooth, swift, or slow,
Swarm populous, unnumbered as the sands
Of Barca or Cyrene's torrid soil,
Levied to side with warring winds, and poise
Their lighter wings. To whom these most adhere
He rules a moment: Chaos umpire sits,
And by decision more imbroils the fray
By which he reigns: next him, high arbiter,
Chance governs all. Into this wild Abyss,
The womb of Nature, and perhaps her grave,
Of neither Sea, nor Shore, nor Air, nor Fire,
But all these in their pregnant causes mixed
Confusedly, and which thus must ever fight,
Unless the Almighty Maker them ordain
His dark materials to create more worlds—"

Paradise Lost, II. 898-916

I.

The void of matter before creation in Milton[1] is awesome and terrifying, here giving even the intrepid fallen Satan pause, before he spans it to return to the Earthly sphere. Within it, in a state of primordial chaos, matter is split into its four essential qualities; hot, cold, moist, and dark. Each quality has its champions, creatures of the abyss of timelessness that fight for them. These are "embryon atoms"—swollen, still emerging, as yet unformed. God has not, as Milton specifies, employed them yet to create more worlds like ours. There they must wait, buffeted in the womb of the universe, until they can be used.

[1] Milton is, of course, John Milton (9 December 1608 – 8 November 1674), the poet. Normally, names in this dissertation will initially be given as both first and last name, even for iconic figures. Rumour has it Milton's father almost named him James…

Elias Ashmole, antiquarian and scientist of the British 17th-century, was tired of waiting. Throughout his life as an aristocratic scholar, and later as a founding member of the Royal Society, he sought to unpack the secrets of God's creation all the way back to the moment of ordering. Born into relative wealth but on the 23rd of May 1617, Ashmole would go on to amass one of the most important scientific and antiquarian collections of his age. The gardens of the Johns Tradescant[2], the books from many dissolved monasteries, and treasures from around the known world all came into his acquisition[3] as he rose to prominence as a supporter of Charles I. As a New Man[4], eventually exiled from London during the Interregnum, he took up residence near Oxford, where he went on to study the esoteric arts of astrology and alchemy in earnest.

[2] The Johns Tradescant, father and son (c. 1570s – 15–16 April 1638 and 4 August 1608 – 22 April 1662 respectively), were English naturalists, collectors, and the foremost gardeners of their age. They assembled an 'Ark' of specimens and a garden in South London, both of which Elias Ashmole eventually acquired, along with the eponymous 'Tradescant Orchard Book' (MS Ashmole 1461).

[3] The contents of Ashmole's manuscript collections can be found in: Black, William Henry, William Dunn Macray, Elias Ashmole, William Kingsley, Edward Lhuyd, and William Borlase. *A Descriptive, Analytical, and Critical Catalogue of the Manuscripts Bequeathed Unto the University of Oxford by Elias Ashmole: Also of Some Additional MSS. Contributed by Kingsley, Lhuyd, Borlase and Others*. Oxford: Univ. Press, 1845. The Ripley Scrolls were also exhibited briefly in the Bodleian's 'Magical Books' exhibition (23 May - 27 October 2013), which did not have an MSS catalogue produced. MS Ashmole 53 briefly made an appearance in the Weston Library's treasures gallery, on rotation for public view in 2016. I gave the public lecture for the Scroll on display at this juncture. Whilst American collections, partly due to their limited scope, are very well catalogued, the Bodleian does not have the staff or the resources to update the 19th-century Finding Aid (available as a scanned .pdf) for the Ashmole collection. Any hand written annotations to the physical catalogue in the reading room itself are again my own, done under the supervision of Dr. Bruce-Barker Benfield or Dr. Martin Kauffmann. Everyone would like there to be more finding aids, but they're simply aren't for this material! Hence, in part, this thesis.

[4] That is, someone named to the aristocracy rather than born into it my inheritance.

This dissertation chapter is not a biography of Ashmole, nor explicitly a survey of his collections. Vittoria Feola's *Elias Ashmole and The Uses of Antiquity* [5] already explores the bibliographical material in great depth. Feola also touches on how Ashmole used his manuscript material for self-fashioning as a public many of letters and antiquarian. I use many Ashmole manuscripts here because they have the advantage of having been preserved in an intact library for historical and bibliographic context. I also explore, with Glasgow MS Ferguson 6, and in my final thesis chapter on the *Atalanta Fugiens*, how the alchemical image corpus migrates beyond the material contained in libraries like Ashmole's, both to and from the Continent to Britain.

The Milton epigram here is also intentional as a signifier for the broader aims of this dissertation as a whole. This dissertation often invokes texts of period, particularly poetry, as historical sources for contextualising alchemical books and manuscripts. Since alchemical material has moved from a central or foregrounded space in the Early Modern imagination to a marginal or esoteric one in the post- 'Scientific Revolution' world, Early Modern literature often proves a valuable source for interpreting it in period context. The material this dissertation treats varies from 15th century material in 17th century collections, to material produced explicitly as commentary on medieval objects in those same collections and libraries. Since the Early Modern definition of *scientia* is incredibly broad and does not at all match a narrow, post-19th century definition of 'science', this chapter and all that follow will hew to the earlier use of the term, ranging from the nature of chemical combination to universal language to patterns in hedges. While this dissertation is grounded in alchemical book illustration, it touches on the broader

[5] Vittoria. Feola, *Elias Ashmole and the Uses of Antiquity* (Paris: Blanchard, 2012).

approach of the Early Modern antiquarian archive as a means to read – and even repair—a fundamentally Post-Lapsarian world.

Alchemical images have been treated lightly in the scholarly literature. The body of work of Frances Yates pioneers their historical context and overall framing, coming into play in this first chapter in the evocation of Neo-Platonic[6] memory and later on in Rosicrucian terms in the Palatinate. In a mirror study of sorts, Tara Nummedal has done the equivalent historical survey of alchemy in the Holy Roman Empire. The work of Pamela Smith on alchemy and artisans in a mercantile culture has been generally influential, though not necessarily applicable to the particular case studies I discuss here. Though I cite Jennifer Rampling's work on Ripley's textual corpus throughout this chapter especially, she has not written at length on any of the Scroll imagery, and often approaches the material purely through the lens of chemical reaction, something I see as fundamentally reductive. Although I cite Lawrence Principe's work here on the basilisk, he too tends to discuss Early Modern alchemy as if it somehow exists outside the currents of theology and hermeticism, often in a teleology leading to experimentalism and Boyle. As a counterpoint to this approach, I attempt to use images in some of the same way Grafton evokes authority in *Defenders of the Text*. Although it does not explicitly touch on the images in this thesis, Daston and Park's *Wonder and The Order of Nature* was also helpful as a model for an approach to material.

[6] I use Neo-Platonism here to refer to Brunian and Ficinian theories specifically, and often in a Yatesian/Warburgian reading, but it obviously has much broader connotations for Early Modern thought (and a much broader bibliography), that will be addressed in the coming monograph of this thesis. A good general overview for the history of science specifically can be found in: James Wilberding and Christoph Horn, *Neoplatonism and the Philosophy of Nature* (Oxford: Oxford University Press, 2012).

Ashmole's own writing on alchemy is helpful here as well. In his seminal work, the *Theatrum Chemicum Brittanicum*, published in 1652[7], uses he his lengthy prologue to explain that, just as Christ was given to the world of men for post-Lapsarian spiritual salvation, so too did God give the directions of the Magnum Opus, the work of making the Philosopher's Stone, for material salvation, but also for the privilege of knowing as only the blessed knows:

"For they being lovers of *Wisdome* more then *Worldly Wealth,* drove at *higher* and more *Excellent Operations:* And certainly *He* to whom the whole *Course* of *Nature* lyes open, rejoyceth not so much that he can make *Gold* and *Silver,* or the *Divells* to become *Subject* to him, as that he sees the *Heavens* open, the *Angells* of *God* Ascend|ing and Descending, and that his own Name is fairely written in the *Book of Life."*[89]

In order to do this one must be in a proper state with God in the first place, as Ashmole was, in view of his own private election to the alchemical 'priesthood' by the man he saw as his spiritual father, William Backhouse.[10] The next step is to read the secrets of the art from their intentionally obfuscating or difficultly allegorical language. Only the man who has both the state

[7] The period edition I have used for this chapter is Bod 4A Med.BS, 'printed by J. Grismond for Nath. Brooks, at the Angel in Cornhill' in 1652.
[8] *Theatrum* Prologue, P. A4R (the prologue is numbered differently than the rest of the volume, with dual letter/numbers.
[9] All transcriptions of Early Modern English will retain their original Italics, capitalisation, and period orthography, both in print, and where possible, in manuscript. Latin orthography, including unconventional scientific Latin/Early Modern spellings, shall also be retained. As many abbreviations in the MSS throughout this dissertation are not citable via Capelli (they are much later, English, and from odd sources), they are expanded at the author's discretion throughout. Much transcribed Latin is not strictly grammatical in the original MSS, and often includes English interjections and loanwords.
[10] Bruce Janacek, *Alchemical Belief: Occultism in the Religious Culture of Early Modern England* (University Park, Pa.: Pennsylvania State University Press, 2011).
P.152. This volume's chapter on Ashmole provides a much more complete introduction to him as a figure and scientist than I can here.

of the soul, and the ability of the mind to decipher the core principles of the alchemical art, can successfully make the Stone. The intended audience for the Ripley Scrolls (and for the *Theatrum*) is a kind of alchemical elect, trained in their own hieroglyphics of image and stock phrase, as well as vested in the idea that the lost fruit of the Tree of Knowledge was possible to reclaim. This is the "course of nature" that lies open in the Prologue.

If the world in which unformed atoms roil in darkness was chaotic, so too was embryon Humanistic thought, exchanging itself between the Continent and England, variously praised and banned. Just before the start of the sixteenth century, a pestering Medici[11] interrupted Ficino's early translation work on Plato's *Parmenides* to procure a translation of the *Corpus Hermeticum*, containing the earliest esoteric and alchemical texts harvested from Greco-Egyptian Papyri. Ficino's interest in the state of matter though, persisted beyond translation, and he writes explicitly about alchemical production of gold and the quintessence of matter in his *De vita coelius comparanda*, a text which spawns many subsequent explorations including Agrippa von Nettesheim and Bruno and the atomists.[12] These editions were controversial, and some, like Agrippa's, suffered physical losses, while others circulated relatively unscathed.

The influence of these mostly Continental texts (excluding Fludd, who is an interesting case all his own) circulated back to England, and specifically Oxford, sometimes only shortly after they were printed. Collections in the Bodleian and catalogued college incunables and Early Print

[11] That is Cosimo di Giovanni de' Medici, b.1389- d.1464.
[12] William Royall. Newman and Anthony. Grafton, *Secrets of Nature : Astrology and Alchemy in Early Modern Europe* (Cambridge, Mass.; London: MIT, 2006).P.24-25.

collections, contain many Neo-Platonist discourses, among them early Aldine editions.[13] The use of Neo-Platonism in scientific discourses and images produced in the following century is well documented, although studies in English literature of the period and *its* Neo-Platonic influences is much broader and well-traversed.[14] Nonetheless, the interest in Neo-Platonic theories of matter and ensoulment that populates many of the texts of the *Theatrum Chemicum Brittannicum* is a common theme among English alchemical materials.

The materials of which this chapter makes a study take on this Neo-Platonic theme in differing ways. The Ripley Scrolls belonging to Elias Ashmole were donated at the same time as his entire library was, to the early Bodleian. They are numbered Bod MS Ash 40, Bod MS Ash 52, Bod MS Ash 53, Bod MS Ash 54, and Bod MS Bodley Rolls 1. Out of 20-25 extant copies of the Scrolls in British archives, these five provide excellent examples of possible varia. MS Ash 40 is incomplete, giving insight into production of the Scrolls. MS Bodley Rolls 1 is very early, perhaps dating to just the cusp of the 16th century, providing a basis for speculating about the

[13] This is documented clearly through the acquisitions of not only Ashmole, but those he would have used when located at Oxford earlier in his career, on the whole printed during the lifetime of Aldus Manutius himself. The Aldine collections that are the basis for the library of Corpus Christi College are an apt example here, although a similar example can be made of Brasenose College, where Ashmole was largely based at the time. The catalogues of New and Brasenose incunables was completed in 1902 by bibliographer Robert Proctor and can be viewed in the Reading Room of the Bodleian's Weston Library, but many incunables in college libraries remain undercatalogued to this date, making the tracing of specific Neo-Platonic works and editions more difficult. Brasenose has started to re-catalogue all antiquarian books, including some then overlooked by Proctor, in 2007. There is also currently an ERC funded project on the Early Modern Booktrade in Oxford collections that will, in several years, produce more comprehensive catalogues of the Aldine and other material of this nature Ashmole would have had access to during his time in Oxford.

[14] One example, in addition to Grafton and Newman above, is: Stark, Ryan J. *Rhetoric, Science, & Magic in Seventeenth-century England*. Washington, D.C.: Catholic University of America Press, 2009. The author frequently cites Donne and Herbert as transmitters of Neo-Platonic influence.

evolution of the Scrolls' imagery. Bod MS Ash 52 is an excellent later copy. Bod MS Ash 53 contains variant Rosicrucian images throughout, and Bod MS Ash 54 is a hybrid of woodblock prints and inked drawing.

All Ripley Scrolls treat the same topic in condensed form, often in images without words; the production of the Philosopher's Stone. This is described in twelve stages, or 'gates' of George Ripley's *Compound of Alchemy*[15], although the extent to which the Scrolls actually adhere to the poem's text varies greatly and their given name as a group is perhaps deceptive. Much has been made of Ripley's poem itself (reprinted first in Ashmole's *Theatrum*). Rampling's studies of the Ripley corpus treat it in detail as both chemistry and didactic exercise.[16] Stemmae of the Scrolls' Middle English verse (where it does occur) have been produced, and they have largely received attention, despite their illustrations, as textual objects.[17]

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[15] These are:
The First Gate - Calcination
The Second Gate - Solution
The Third Gate - Separation
The Fourth Gate - Conjunction
The Fifth Gate - Putrefaction
The Sixth Gate - Congelation
The Seventh Gate - Cibation
The Eighth Gate - Sublimation
The Ninth Gate - Fermentation
The Tenth Gate - Exaltation
The Eleventh Gate - Multiplication
The Twelfth Gate - Projection

[16] Jennifer M. Rampling, "Establishing the Canon: George Ripley and His Alchemical Sources," *Ambix : The Journal of the Society for the Study of Alchemy and Early Chemistry.* 55, no. 3 (2008): 189; Jennifer M. Rampling, "The Catalogue of the Ripley Corpus: Alchemical Writings Attributed to George Ripley (d. Ca. 1490)," *AMBIX* 57, no. 2 (2010): 125–201,
[17] Anke Timmermann , "Verse and Transmutation : A Corpus of Middle English Alchemical Poetry (critical Editions and Studies)," 2013,

The Ripley Scrolls are huge. Excepting four 'tiny' four foot long copies in the British Library,[18] they are each 25 feet long, and roughly 1-1.5 feet wide (diagram of basic schema of a Ripley Scroll, Figure 1.1). They have mixed paper and vellum compositions, and vary widely in quality. What all have in common, however, is a range of illustration scales, starting from a human-sized figure holding an alchemical flask, ranging down to roundels the size of illustrations in quarto and smaller volumes. The first roundels cover the production of the 'White Stone' from *prima materia* through repeated evaporation. The set of figures surrounding a tree of life and grapes represent putrefaction and fermentation, leading to the 'Red Stone,' and then the subsequent stages represented by larger animalia represent joining the existing components into the Philosopher's Stone.[19]

The state of matter as Milton describes it in the void, chaotic and as of yet unformed, is a matter of concern in many of the books in Ashmole's library. At the start of Robert Fludd's creation in his *Utriusque*, the universe is a black plate etched out from the reverse ground of shining copper and smeared with the mixed matter of printer's ink. This black plate, in one of the later books in the alchemical-hermetic corpus related to Elias Ashmole, mirrors perfectly centuries of medieval creation narratives in Ashmole's earlier manuscripts, These rings of matter—earth, air, water, and fire—all derive from the initial mixed chaos of the first state. This is the battlefield of the embryon atoms. In the Ashmole Bestiary the mixed matter is laced with the pure gold ground of the creation sequence's miniatures. In a *Coronatio Naturae* drawn in Ashmole's own hand (MS Ash 1456, Figure 1.2) the mixed matter, labeled "chaos" in Greek, is more diagrammatic—it

[18] BL Add.5025-(1-4).
[19] For a closer reading of how these 'gates' line up with their images, see my article: Alexandra. Marraccini, "Open Secrets : Alchemical-Hermetic Imagery in the Ripley Scrolls," *Charming Intentions / Ed. Daniel Zamani.*, 2013, 65–83.

contains all the planetary signs and chemical ones, punctuated by seven-pointed yellow stars encircled in the orbs. Later, in the flask, it appears a radiant mixture of rainbow hues.

Getting back to this state of mixture, the swirling morass of matter before it becomes a subtype of earth, air, water, or fire, is one of alchemy's central goals. The alchemist aims to turn back the clock as it were, to return the moment just after Creation and before everything else, to when the dark materials of making worlds are laid bare. The fact that this is possible in a fallen world, after original sin and various turmoil of the Reformation, sounds wondrous in and of itself. The fact that the agent of the creation of this *prima materia* is not God this time, but the alchemist himself, a mortal and fallible man, is even more remarkable.[20] In the flask, or in the even more radically experimental space of the flask of the mind, the alchemist becomes a priestly, even demi-god like agent, who through understanding the nature of the macro- and micro-cosm can change its very substance. Through artifice, the alchemist reaches back to the first and most primal state of nature.

This is why the Ripley Scrolls begin with a man holding a life-size flask with a life-sized toad in it (Figure 1.3). The universe of the alchemical flask is scaled to the size of the giant Hermes figure and what he holds, roughly five feet of the 25 foot total scroll. That is, the Scrolls set the size of the experimental universe to that of a real, day to day man, framing the act of alchemical

[20] This is not to say most claims of alchemical proficiency were believed. Nummedal memorably describes the ghastly fates of *Betrüger*, or fraudulent alchemists, in court circles of the Early Modern Holy Roman Empire. Similarly Jonson's eponymous play expresses the public sentiment that this feat of chemical re-creation might not be entirely possible. [Tara E. Nummedal, *Alchemy and Authority in the Holy Roman Empire* (Chicago: The University of Chicago press, 2007). See page 6 for the term *Betrüger*, and the entire introduction for an anecdote of executing 'false' alchemists].

creation on a human scale, even in the face of its divine implications. The scrolls are huge compared to other manuscripts, but compared to the size of God creating the entirety of matter in the cosmos, they are infinitesimally small. Specifically, they're person-sized. The tiny roundels inside the flask (Figure 1.4), themselves containing tiny human figures representing chemicals, are another case of scaling down to symbolise the experimental world's relationship to the human world as a whole, and the human world's relationship to the scale of God's cosmic plans in turn. There are flasks within tiny flask, a tiny toad fermenting within sight of its life sized brethren. The alchemical task of creating the Philosopher's Stone by first deriving *prima materia* from ordinary matter requires these universes within universes, these operations across multiple universal scales and orders of magnitude. Each microcosm reflects the macrocosmic structure of the whole *and* a specific experimental step in the flask. It is unclear where these nested universes would end if one pushed the Scrolls' philosophical system beyond the realm of the visible (the smallest drawings are incredibly tiny miniatures on par in size with those in contemporary Books of Hours).

This use of scale, and the tiny roundels on the giant surface, is a result of a mathematical problem for the illuminator and whoever initially designed the scroll formation. Collapsing *n* space to *n-1* space always requires proportionally much more space in the plane of the lesser dimension. Consider a tesseract, or a four-dimensional hypercube, that is visible as 'unfolded' cubes in three-dimensional Euclidean space, or of three-dimensional cubes unfolded into two-dimensional configurations of squares. Even if the Ripley Scrolls represented the only the unfolding of a simple laboratory procedure across space and time alone – and I shall argue that they allegorically contain far more knowledge than this—collapsing their content into the two-

dimensional frame of a page is a problem for any artist or alchemist. It seems very much more efficient to do this in folio form, so the choice of scroll, especially one of such unusually large dimensions, is at first puzzling, even if the scaling of the initial Hermes figure to man himself grounds the project in the macrocosmic order.

Scrolls are used to represent knowledge passed down from antiquity in the plates of the *Theatrum Chemicum*, figures I will return to in the third chapter of this dissertation, 'Vegetable Love' (figure 3.3a). This could certainly be a motivation for the choice of scroll format, as Hermes Trismegistus, the giant figure on each scroll, is ostensibly at Late Antique figure from whom alchemical knowledge has been handed down directly in a coherent line of inducted elect, of whom Ashmole considered himself the latest member. Given that the scrolls of the Alexandrian library were also a prominent them in Early Modern emblems and texts, the use of a scroll could also be a symbolic gesture to the manuscript-as-preservation-technology and the continuation of supposedly 'lost' antique knowledge. The Tradescants called the collection that Ashmole later purchased an 'Ark', and just like Noah's ship of animal exempla, the Ripley Scrolls preserve essential chemical knowledge, not boarded up in wood against a flood, but encoded in allegorical images against an event like a future Dissolution or censorship of texts—events which were common during Ashmole's lifetime.

Just like an Ark or the specimens in a Wunderkammer, the Ripley Scrolls are also creaturely as soon as you unroll them. The first image inside the flask the Hermes Trismegistus figure holds is a putrefied toad, life-sized and fleshy to the point of near trompe l'oeil. This is the toad from the alchemist Ripley's dream—described in a poem that does not appear on the Scrolls themselves—

that imbibes grapes to the point of bursting, dies, putrefies, and then from putrefaction gives rise to a cure for venom.[21] This is an allegory for the Stone itself, triggered in the memory of the viewer by each Scroll's vivid, life-sized toad. The triggering of memory, the pull on the invisible chain of human recall, is a technique the Scroll's images employ again and again.[22] While superficially about chemical praxis and manufacture, this use of remembered knowledge, of knowledge that is *required* to be pre-lodged in the knowing viewer's mind for the Scrolls to 'work', suggests that the praxis of the Ripley Scrolls is also a kind of gnosis that relies on the memory arts.[23] In the traditional Platonic model of truth, only the philosopher has true gnosis of the forms, whilst the painter, a craftsman in the realm of *techne*, merely has access to their models (παράδειγμα)[24]**.** The Neo-Platonic alchemist, who in the form of the Scrolls' working figures is shown emphatically as both a craftsman and true philosopher, uses some methods of both. The toads, birds, fountains, and dragons, on the scrolls are παράδειγμα—models, patterns, in the literal translation, paradigms, for the types of worlds one must engender in the flask, and in turn conceptualise in the flask of the mind.

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[21] For a reading of this verse in the context of Ripley's *Compound of Alchemy*, see: Alison. Adams and Stanton J. Linden, *Emblems and alchemy* (Glasgow: Dept. of French, University of Glasgow, 1998). P.90-92.

[22] Of course this particular pull on memory only works if the viewer is a member of the 'alchemical elect'—i.e. those already predestined by both reading and Godly selection to be able to correctly approach the process of making the Stone. This is not dissimilar to Plato's original class of the philosopher-kings. See: Gareth Roberts, *The Mirror of Alchemy : Alchemical Ideas and Images in Manuscripts and Books : From Antiquity to the Seventeenth Century* (Toronto; Buffalo: University of Toronto Press, 1994). P.4.

[23] An entire additional chapter on Lullian memory, Hermeticism, and the reading of related images and texts by Frances Yates could be added here, but I will reserve this enterprise for the eventual book form of this thesis, as it would be out of place to the limited argument I make here.

[24] Republic VI, 484a-d. In the Loeb edition: Plato. C. J. Emlyn-Jones, and William Preddy. *Republic Books I-V*. (Cambridge, MA: Harvard University Press, 2015).

But what then of the alchemist's access to true gnosis of the forms—particularly the form of matter itself? Ironically, this is depicted by painting itself on the Scrolls, showing a truly different relationship to the role of images in the pursuit of truth than the original, classical Platonic corpus allows. In entrusting transmission of the sacred, Hermetic knowledge of macro- and micro- cosmic matter to images, the creators of the Ripley Scrolls endow them with the power of giving their viewer access to gnosis of the forms via their allegorical images—given, of course that they have the prerequisite knowledge required to interpret them, and the practical ability to stage the experiments. The triangular relationship between gnosis, praxis, and epistemology, with each necessary but not sufficient for access to the other, is clearest in the Scrolls when it comes to the question of "quintessence" or *prima materia*. The question of epistemology with regard to *prima materia* is raised for Neo-Platonists of Early Modern Europe by Ficino, who posits that in and of itself the nature of matter is not knowable, but may be approached by hierarchical analogy.[25] Snyder puts it thusly: "To borrow a description from Bonaventure, matter is not only known through it relationship with form, but is, for Ficino, grasped in itself as an ―intelligible darkness." That is, we know darkness because we know it as an absence of light—something that is seeable and knowable, while darkness technically is neither, in and of itself. The hierarchical analogy used to explain *prima materia,* both in terms of its manufacture and nature, is present in the Scrolls' first set of roundel images.

Yet it is not only a Ficinian theory of matter that can explain the imagery of the Ripley Scrolls. Ficino's theory of quintessence in turn is integrated into Giordano Bruno's, who associates

[25] This theory as Ficino expresses it in his *Platonic Theology* is explained in detailed, and given some Scholastic origins, in: James Snyder, "The Theory of materia prima in Marsilio Ficino's Platonic Theology," *VIV Vivarium* 46, no. 2 (2008): 192–221.

knowledge of the universal architecture with knowledge of its smallest matter (this is the Neo-Platonic *scala naturae*). For Bruno, the dynamic soul has a 'fanciful cell' where operations, including memory, take place. One of the goals of memory is to recall, by using the internal writing of the soul [*engraphia*], the structure of *prima materia* as created by God on the model of the Platonic demiurge in the *Timaeus.*[26] One of Bruno's main tools is a post-Lullian memory wheel, visualisations of which resemble the roundels in the flask at the head of the Ripley Scrolls. Images in Bruno's theory of memory are *colligantia*, or simulacra that function as ties to the real primal structure of first matter. Instead of excluding images as modes of access to truth, as in the strictly Platonic mode, this Neo-Platonic mode suggests they are the *primary* means to approach the truth of *prima materia*. The words on the Ripley Scrolls' roundels, then, merely serve as organisational labels. The images in the roundels are the epistemic wedge that gives the alchemist access to the true forms of knowledge.

The first allegorical roundel, which is also the last roundel in a circular reading, is an image of *prima materia* made possible both by the alchemical procedures in the flask-images that produce the White Stone, and by the memory of the forms the roundel images evoke in the mind of the alchemist. They are literal guides to physical alchemy, but also iconographic guides to memory alchemy that renders clear the form of matter. This first roundel (figure 1.5) is an image that is fundamentally a paradox if taken on purely experimental terms. On the one hand, the male and female figures, hands modestly at their chest in multiple manuscript copies, could be taken as Adam and Eve, standing on each side of the biblical Tree of Knowledge, from which they have

[26] Alessandro G. Farinella and Carole Preston, "Giordano Bruno: Neoplatonism and the Wheel of Memory in the 'De Umbris Idearum,'" *Renaissance Quarterly Renaissance Quarterly* 55, no. 2 (2002): 596–624.

just plucked and eaten the fruit. On the other hand, the presence of Venus and Vulcan, along with the fountain of life, and the moon for the female figure along with the sun for the male one, suggest instead that they are the Male and Female alchemical essences. These pure essences, present in either *prima materia* at the start of Creation or, crucially, during the production of the Philosopher's Stone, imply at least a partial reversal of the fate engendered by the Fall. If successful, a Philsopher's Stone allows the alchemist to live forever, thus reclaiming the lost fruit of the Tree of Life that Adam and Eve lost access to when cast out of paradise. The phrase 'the best of both worlds' is literalised here, with one world – the Post-Lapsarian solution to one of the main problems of original sin—layered on top of the other (the act of that original sin), in a single image.

What is for Bruno *engraphia* is here a kind of *exgraphia*. Images are written inside the chamber of the flask as painted on the scroll so as to be readable outside the sealed, inaccessible chamber of the flask of the soul and its knowledge of the first forms, as well as a state of original, now inaccessible, Biblical purity. Ironically, it is within *another* sealed chamber, the larger pelican flask the life-sized Hermes Trismegistus figure holds, that this previously closed-off knowledge emerges as accessible. In this roundel, and each that follow it, allegorical figures are all tied together with chains binding them to the central image. These red lines and chains are literally *colligans*, fastening the total together, binding the roundels to Neo-Platonic truths.

After this scene, the "soul" of each chemical —that is the properties that are attached to each chemical's base of matter—in each roundel is represented as a bird (Figure 1.6). The soul as a bird is common in both the liturgical corpus, the Holy Spirit being the prime model and

exemplar, as well as the alchemical one[27]. The peacock, raven or crow, the pelican, and the phoenix each play roles in representing stages of the production of the Philosopher's Stone.[28] Alchemy, itself a secret language of matter, is often called the "languages of the birds."[29] The stone itself is the "Bird of Hermes," usually a dragon or basilisk, to which I shall return later. The first use of bird imagery in the Ripley Scrolls is in the roundels within the large top flask. The text on the flask's double handles reads (Figure 1.3) " You must make water of the Earth & Earth of the ayre & ayer of the fyer & fyer of the Earth." This transformation, an exchange of properties of basic elements[30] to create the White Stone, occurs step by step alongside the images in the roundels' Latin text of MS Ash 52, MS. Ash 40, and MS Bodl Rolls 1.[31] The decision to represent the chemical elements of the Stone as little homunculi, with birds for souls and plaintive facial expressions as they boil and expire in turn on the furnace, is an interesting artistic choice. So too is the use of the first person in the roundel captions. After the first roundel (Figure 1.7), where the male essence "forsoth is his sulphir" [MS. Ash 40], in the second roundel, the male and female essence have faces sketched as blank expressions, as if drained of being. The

[27] An image of this "soul" underlying all matter and its properties can also be found as a curious diagram in BL Sloane 1171, f.7r. This manuscript, also early 16th century at latest, is closely related to the type of English alchemical thinking on the Ripley Scrolls. These slightly variant images, however, suggest that unlike a strictly Ficinian, Brunian, or even Aristotelian conception of matter, the visual corpus retains some 'wiggle room' on its philosophical nature.
[28] See the many entries for birds in: Lyndy. Abraham, *A Dictionary of Alchemical Imagery* (Cambridge, UK; New York, NY: Cambridge University Press, 1998).
[29] Gareth. Roberts and Centre for the Book., *The Languages of Alchemy* (London: British Library Centre for the Book, 1997).
[30] The association of certain properties with certain elements and the recombination of these properties goes back to Aristotle and earlier, but alchemically is codified in Lull's alphabetic abbreviations for just these types of chemical exchanges. See: Frances A. Yates, *Lull and Bruno.* (London: Routledge and Kegan, 1982).
[31] The correspondences of this text to Ripley's *Compound*, and in turn to literal chemical processes, is covered in more depth in my article on the Scrolls: Alexandra. Marraccini, "Open Secrets : Alchemical-Hermetic Imagery in the Ripley Scrolls," *Charming Intentions / Ed. Daniel Zamani.*, 2013, 65–83.

text from MS Ashmole 52 (Figure 1.8) reads: "+ A calideo et – humido primo est illis pasce qui debilis sum."[By the heat and by the first humidity, that you must feed, is that by which I am weakened.] These elements of matter, these analogies, appear to breathe and succumb like their human counterparts. The simulacra might serve as a way to access chemical knowledge, but in doing so they cannot avoid the simulation of emotion, as much transmitted to the viewer as the more directly relevant 'scientific facts'.

Along with the soul-bird of the first roundel, another homunculus, ambiguously gendered and aged, emerges from the two bodies in the flask, and haloed, is deposited into holding flasks on a side table (Figure 1.8). The *illis passce [illis pasce* in Bod Ms Ash 40 and Bodl Rolls 1, with qui as quoniam*]*, is created by the viewer or user of the scrolls as he tends the fire, feeding it in order to weaken the elemental bonds between matter and essence (the wet affixed to the water, the hotness affixed to fire and so forth). The little homunculi look downright miserable by the third roundel, their soul-birds exchanging about them, their essences resting on other flasks. The text now reassures the alchemist (Figure 1.9, righthand side): "+ Et leniter disgestiis ----- animabile sum ideo et exalta in grossioribus [And it is slowly by digestion—I am the life-force and therefore am exalted in greater.]" Animabile *sum*. The chemical essence, extracted from the homunculi and formed now as a symbolic bird, speaks for itself to the viewer. It is personified, and tangle of I-you constructions in a theoretically abstract world that is also emotionally immediate. The tiny dot eye of the bird in the background of this roundel stares out at the viewer, a spot of black ink the size of a pin tip, beckoning a return gaze. If you could look into Bruno's secret chamber of the soul, bound up in a flask, if you could see its chemical actors, you might

just feel sorry for them, burning up and liquefying, dying in the name of *prima materia.* Is not the human soul, too, drawn as a little bird?

Yet, there is an analogy that is an additional tie between us, the viewers, and the world of the homunculi in the roundel flasks. This level of in-between is occupied by the viewership built into the Scrolls themselves, in the form of monks viewing the experiment in each roundel. Each of the roundels is at once diagrammatic and figurative; diagrammatic because each is an experimental step with specific chemical consequences as described by the circular text-borders, and figurative because they display, sometimes in grisaille surrounding the miniature flasks and in colour homunculi within them, reactions of both the chemical beings themselves and a set of monastic-garbed observers to each step. The second roundel shows the monks anxiously puffing out their cheeks and touching the flask on the furnace during "Solucia" in a way that evades the definitions for medieval and early modern types of scientific diagrams outline by Obrist and Luthy[32] and touched on by Rampling for alchemical objects. While Rampling is certainly correct in asserting that these types of images in general contribute to the establishment of alchemy as "*scientia* and *ars*"[33], the emotional expressions of the monks do nothing to explicate either the text or the processes within the flask that is the coloured, central portion of each roundel. We may not be bound by the red lines of the chemical homunculi or the chains that bind each roundel to the central Book of Life, but as human viewers we too are being tied in, again *colligans*, by the pull on our emotive strings. If one of the goals of the Ripley Scroll imagery is

[32] Christoph Lüthy Smets, Alexis, "Words, Lines, Diagrams, Images: Towards a History of Scientific Imagery," *Early Science and Medicine* 14, no. 1/3 (2009): 398–439.
[33] Jennifer M. Rampling, "Establishing the Canon: George Ripley and His Alchemical Sources," *Ambix : The Journal of the Society for the Study of Alchemy and Early Chemistry.* 55, no. 3 (2008): 189.

to pull out the Neo-Platonic deep secrets of the soul, to write on the visible surface of a manuscript what is invisible in the depths of spiritual contemplation, these are the ties that bind us to the images. They reel us in like fish, using our emotions as hooks to anchor themselves.

In the third roundel the monks faces look strained as they peer over the flask anxiously and pray (it helps to recall Ripley's own monastic status at Yorkshire to explain the figures' garb and apparent tonsures). In the fourth, a chubby cheek monk pours the contents of one flask into another as two look on, and in the fifth the same existing monks, with their distinct body shapes and facial expressions, are joined by a fourth observer with an upturned flask, as they once again look on. Our chubby monk's mouth forms a little 'o' of wonder in the finest of black-ink lines in the rear of the furnace (Figure 1.10). In the sixth and seventh roundels, the monks are joined by more assistants and observers, make more faces of anxiety and wonder, and prod both the furnace and the flask curiously with their hands, holding additional, smaller flasks to the side and growing in number gradually While the chubby monk looks rather shell-shocked by the proceedings of six and seven, by roundel eight he is smiling again, presumably having reached the final step of this subsection of the scroll, with its goal printed below the giant flask holding all the roundels in large text. The monks have made the "White Stone"—the first of three needed for the production of the Philosopher's Stone as a whole.

While the roundels contain scientific data, and the means to access it as knowledge, in the flasks at their centres, each representing a step in distilling, re-distilling, and purifying, it is their miniature monastic viewerships, encapsulated within the worlds of their internal experiment, that are most provocatively different from most images of scientific procedure in the modern world.

The diagrams depict effect, that is to say the chemical effect of each experimental step, but they also model affect—the response of the experimenters to each step. While the internal homunculi and the birds of their souls provide the epistemic means to access the gnosis of the Stone's material form, and the roundel text provides chemical praxis, the monks provide the human mirror for both. They are figurative eyes into the secret chamber of the chemical soul and its workings, which map on to the literal eyes of the viewer as s/he produces the stone him or herself. If the homunculi teach us how to think about matter, the monks teach us how to feel about it. Feeling is part of neither the *episteme* nor the *techne* of making the Stone, but it is somehow necessary; it is the murky, ineffable human element that makes one part of the alchemical elect able to access the procedure in the first place.

It seems the Ripley Scrolls are not unique in this approach in the alchemical corpus, a topic this dissertation later touches on at length with the examples of Glasgow MS Ferguson 6 and the *Atalanta Fugiens*, among many other illustrated alchemical books. The Ripley Scrolls scaled literally to the human form, are also scaled figuratively to the human heart. The roundels ask us to think about how we think—and feel about the experiment we are using them to perform. Am I the variable, emotive chubby monk? Am I the anxious, older monk who mostly keeps his cowl up and stares intently, focusing on the flask? In a sense, perhaps viewers are both. The monastic figures in the roundels prepare us for all that we might feel in the intensely personal, soulful process of making the Philosopher's Stone, as they are in a sense, our stand-ins in the manuscript. They are also our figurative range of emotions during the process, jostling for space in the roundels of our minds. If alchemy is *scientia* and *ars* here, it is also *affectus*—mood, emotion, and response. If the homunculi are the παράδειγμα for what the philosopher's matter

must undergo, the monks are the models for what happens to the matter of his self, models for how he might feel about the chemical and theological processes taking place. Praxis and gnosis here are chained by the literal links drawn on the manuscript surface, but also by the affect present in the monks' expressions and the viewer's own experience. The alchemical secrets of the Ripley Scrolls are not known by deciphering some formula alone, but also by feeling one's way to knowledge, a type of epistemology in which emotion cannot be ignored. Half of the work of making the Philosopher's Stone may involve stewing literal sulfurs and salts into mercury over a furnace, but only if the other half, the work of the soul and the feelings that move it, also occurs in sequence. If the mechanics of the inner soul are a Brunian secret, the externality of the monks emotions on the Scrolls, and in turn the viewer-alchemist's emotions provide an external, visible link to at least some hint at what might be roiling inside.

All of the roundels are bound, chained, in fact, to a central book, anchored again with red points, a colour scheme that links them to the red lines inside the smallest roundels. Hermes Trismegestis and Ripley hold the book, presumably the Book of Nature or perhaps the Book of Life itself (Figure 1.11). Why a book? Why not another flask? One answer is the passage from Revelation (20:12) about the names in the Book of Life:

And I saw the dead, small and great, stand before God; and the books were opened: and another book was opened, which is the book of life: and the dead were judged out of those things which were written in the books, according to their works.

To be able to see one's own name in the Book of Life on, or even before Judgment Day, implies the alchemist can either directly access the divine at any time, or that he lives forever, until the end of the world. These scenarios both recall Ashmole's initial description from the *Theatrum* prologue that began this chapter.

Another reason to depict a book in the central roundel lies in the physical situation of the scroll itself, shelved in a library full of medieval and Early Modern books bound in folio form. For Elias Ashmole, we know the exact contents of this library[34], which was vast and preserved almost in its entirety in the Bodleian collection of the same name. The scroll nested into a shelf, like a soul-bird to its *nidus*, like a memory to its cubby.[35] The *nidus* is also the Brunian chamber of the soul, its obscure centre of dynamic operations. It too, is the closed book. All of these things, these iconographic levels, are within a giant pelican flask[36], itself named in the period for a Christological bird. The roundels are nested in many ways, worlds within other worlds, eggs in round protective frames. The flask is, as Ashmole himself calls it, and *ovo diaphano*, a giant transparent egg that makes the generative processes of obscure matter visible.[37] Chyrsopoeia, at the apogee of recalled Neo-Platonic knowledge of the forms and application of that same knowledge, is eggs within eggs, birds within birds, nests inside nests. If the macro- and micro-

[34] Jennifer Summit, *Memory's Library : Medieval Books in Early Modern England* (University of Chicago Press, 2008).
[35]Mary Carruthers, *The Book of Memory : A Study of Memory in Medieval Culture* (Cambridge: Cambridge University Press, 2013).. P.42
[36] The names of particular flasks are often the same as those of birds, and the flasks are even drawn next to images of their namesake birds, as in *De Distallatione*: Porta, Giambattista della. 1609. *[Ioannis Baptistæ Portæ Neapolitani, De distillationibus, libri IX.: Quibus certa methodo, multipliciq́ue artificio, penitioribus naturæ arcanis detectis, cujus libet mixti in propria elementa resolutio perfectè docetur*. [Argentorati]: [Sumptibus Lazari Zetzneri bibliop.].
[37] This is on an otherwise coded page of MS Ash 1423, written in Ashmole's own hand. For more on this MS and page, see Chapter 3, 'Vegetable Love'.

cosm as nested realities, the process of understanding those worlds is itself a nested construct, folding back into itself recursively, each level chained, sometimes by the literal image of ties, to the other.

One of the earliest allegories of chyrsopoeia[38] is the birth and death of the basilisk, another category of strange bird[39]. Theophilus, as paraphrased by Principe, describes the process of breeding basilisks and extracting gold from them as follows[40]:

> They[the Muslims] lock up two old roosters in a narrow place and overfeed them until they copulate and lay eggs. The eggs are given to toads, who hatch them into chicks who soon grow serpents' tails and mature into basilisks. The basilisks are raised underground in kettles and are later incinerated, their ashes mixed with vinegar and blood, and the paste smeared onto plates of copper. Exposure to fire then turns this copper into fine gold.

This process has obvious allegorical ties to the one laid out in the Ripley Scrolls—toads and birds among them. Following the flask of roundels on the Ripley Scrolls is set of fermentation and putrefaction images, analogous to the kettles, ashes and vinegar stage. Then, in every scroll, there is a representation of the "Bird of Hermes". Sometimes this is a bird with a human face,

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[38] From the Greek χ ρ υ σ ός, khrusos, "gold", and π ο ι ε ῖ ν, poiein, "to make"—to make (or transmute) into gold

[39] Mylius and Fludd, among others, picture the basilisk alongside other more prosaic alchemical birds such as the crow or swan. This process if including the fantastic with the quotidian avian species extends to documentary engravings of the period, including Virgil Solis' plates of bird species (See: Hollstein German (LXIV, 155, 476).

[40] This anecdote and its translation are related in: Lawrence Michael Principe, *The Secrets of Alchemy* (Chicago: University of Chicago Press, 2013).. P.54

sometimes a bleeding dragon, and sometimes a combination of both (Figure 1.13). This bird is explicitly called a basilisk at least three times in the *Theatrum Chemicum*, and the reptilian-bird confusion is explained by several centuries of philological cross-pollination, with Plutarch, Pliny, and Isidore to blame or praise respectively.[41] The text on the scrolls above this strange bird reads (here modernised): "The bird of Hermes is my name/ Biting my wings to make me tame!" The blood that flows from the bird/dragon/basilisk is the *elixir vite* or the Stone itself, coloured a vivid red (Figure 1.14).

Out of the strange egg of the flask and the nest of Neo-Platonic memory of forms and alchemical practise has hatched the impossible thing. Mercury, which cannot be fixed, is fixed solid by the Stone, just as a basilisk 'fixes' its victims with its gaze. A gaze from a basilisk is deadly and kills instantly. One can only see a basilisk safely, like one sees Medusa—that is, using a mirror. Similarly, the "Bird of Hermes" is made tame using the mirror of images, the nested analogies that make it visible, both literally in terms of laboratory procedure, and epistemologically through allegorical and emotional knowledge of the structure of *quintessentia.* Quintessence, like the basilisk, cannot be directly seen. Knowledge of the whole structure of God's macrocosm is reserved for God alone because, without the hieroglyphic tradition of alchemical images to encode it, it would overload the human mind, explode the pigeon-holes of the brain's library and render its victim, like that of the basilisk, dead for having looked upon it. The Bird of Hermes must bite its wings, that is, break itself down to allegorical images, to be tame enough for the

[41] A fascinating article on the name and character of the basilisk that expounds these changes at length, but is however, a bit dated in tone is: R. McN. Alexander, "The Evolution of the Basilisk," *Greece & Rome* 10, no. 2 (1963): 170–81.

human alchemist to behold it. The Ripley Scroll must be a somewhat obscure mirror because to gaze directly at alchemical knowledge would kill the viewer.

This essential structure of the universe is the thing that cannot be seen and simultaneously is explored through the allegoreisis of the visible. This is the secret at the top of the *scala naturae,* the basilisk of the Philosopher's Stone, is thus the crux of a peculiar procedure. The Ripley Scrolls not only invoke chrysopoeia, but also invent a *chrysopoetics* along with it, in order to safely encode the required knowledge in human terms. How to view the images on the Scrolls is evoked by the hints embedded in Scrolls' images themselves. How to use them is to make Neo-Platonic recall of the true forms of matter is a *praxis* that turns into a kind of *gnosis*. The Ripley Scrolls portray what is superficially a *techne,* the combination of chemical matter in the flask, that with the theological pre-requisites and implicit consequences for the procedure, also becomes and *ars*, no mere practical knowledge.

Chrysopoetics is fundamentally Orphic in structure and tone on a number of levels. Ficino literally adopts Hermes and Orpheus along with Plato, listing him in his line of *prisca theologia*[42]. The way in which Ficinian and other Neo-Platonic conceptions of *prima materia* are inflected in the images of the Ripley Scrolls are in keeping with the Orphic[43] theme of katabasis and anabasis from a sort of death or underworld. Bird-souls and homunculi die, and some re-emerge from death re-formed, while others fail to do so. The Stone itself is made from putrefaction and black matter, only to re-arise as vital blood-red matter. Earthly matter is turned

[42] Richard. Marback, *Plato's Dream of Sophistry* (Columbia (S.C.): University of South Carolina, 1999). p.54-61.
[43] I mean this in a general, literary sense, rather than a specific cultic or religious/theological one.

back to a state of heavenly matter, only to return to the use of the earthly domain of the alchemist. Shining, solid gold emerges liquid mercury, stinking sulphur, and common salt. Where Orpheus has failed, though, alchemy succeeds. In this version, Eurydice lives because Orpheus doesn't need to look back. The mirror of images saves the alchemist, the viewer of the Scrolls, from the deadly basilisk's gaze, whilst simultaneously giving her the gift of the basilisk itself: epistemic access to the structure of the world, matter stripped bare and reconstructed again.

Every Ripley Scroll ends with a beggar figure that resembles the life-sized Hermes holding the flask (Figure 1.15). He gestures upward toward the unfurled Scroll above him, this time holding a staff shaped with the nib of a pen, with a small scroll drawn as rolled onto it. This scroll is tied up, bound, *colligantia*, if you will, with tiny red lines just like those in the first roundel of *prima materia*. This suggests that the Scroll is here representing itself, nested into its own universes of meaning. The Scroll tells here us how to use itself; it is self-unpacking. This anticipates a future elect, perhaps finding it hidden in some ruined library, that might be guided back to the life of the alchemical mind by its visual cues, its secret runes. This too, is Orphic, it is the idea of the manuscript or archive of manuscripts as salvational device, a kind of special technology for knowledge-resurrection in a Post-Lapasarian, and very uncertain world. Since the period of production for the Ripley Scrolls roughly encompasses Restoration to Reformation England, this is an understandable mentality. Veering between Protestant and Catholic orthodoxies, censors and patrons, and the occasional outright war, the time Ashmole and his possessions lived in meant planning for this sort of existential uncertainty in what the antiquarians of the period

repeatedly call a fallen world. This discourse, and the ways in which alchemy guides us to live in this sort of world, form the conclusion to this dissertation.

The structure of the Scrolls reminds us that when finished, they must be bound up too, returned to their pigeonholed homes in the collection and library. The knowledge in a Ripley Scroll is so essential, so fundamental to the workings of the world that like the chained book at the centre of its upper flask, or the basilisks and dragon-birds of its lower half, it must be kept both secret and safe. In the face of God's vast structure for trees and oceans, fishes and atoms, we are all, like the final Hermes figure, humble beggars. We sit on the first rung of the ladder of forms. We carry impossible knowledge bound up in possible images, wrapped tightly, preciously, on the staves of our annotating pens.

Chapter 2: Fleshly Wisdoms

Introduction[1]

Glasgow MS Ferguson 6 is a sumptuous thing to behold. It is a mid-sized folio (twenty-two by sixteen centimeters, 242 folios), bound in red morocco and stamped in still-shining gilt. The lettering on the front is terse but accurate: "M P Spruch der philosophen" roughly describes the contents of this alchemical miscellany, bound on paper watermarked to 1579. The leather feels like a well-worn chair, and indeed bears numerous use marks, including those of a now-missing set of clasps. The book is stamped on both front and back, and between each of the sewing stations on the side binding.

The manuscript contain numerous anonymous alchemical texts, many in a single sixteenth-century German hand, but there are at least six other hands—one perhaps Italian, one much later and perhaps English—that populate the heavily annotated book. Hundreds, if not thousands, of alchemical miscellanies from the sixteenth century exist. This one is unique for its condition of luxury in both binding and illustration. It contains not only excerpts from almost every major alchemical text known to be extant in print and manuscript at the time, but also copies of, and changes to, illustrations from those editions. Many of these illustrations, grouped in cycles from their original source material, are re-illuminated in vibrant greens, oranges, and pink-reds. Unlike

[1] A close version of this chapter, with additional appendices identifying the six sections and hands, was published in *Word & Image*. This version appears with permission. (See: Alexandra Marraccini, "Fleshly Wisdoms: Image Practices, Bodies, and the Transmission of Knowledge in a Sixteenth-Century Alchemical Miscellany," *Word & Image Word & Image* 33, no. 4 (2018): 339–61."

most miscellanies, MS Ferguson 6 is *mostly* painted pages, and ends with a cycle of entirely wordless illumination. Although its existence has been cited in footnotes, it has never been treated as a direct object of scholarship.

The printed miscellanies that the manuscript refracts and reflects include the bulk of the text and some of the images from the Aldine-printed *Pretiosa Margarita Novella* (1546), itself an alchemical miscellany. MS Ferguson 6 lifts illustration material, and extremely limited text translated into German, from the printed *Rosarium Philosophorum* (1550), an allegorical account of the chemical birth of the Philosopher's Stone, but also from the *Donum Dei* (c. 2nd half of the 15th Century), another similar, yet iconographically distinct account of the same process then circulating in manuscript form. Finally, the last cycle, without text at all, is only one of six known copies of the *Aurora Consurgens* (fourteenth–fifteenth century), an erotic, devotional, and scientific text that sees the creation of the Philosopher's Stone as a profoundly personal and invested act.[2] In this essay, I shall treat key images from each of these cycles, fitting them together and arguing that the miscellany is more than simple assemblage, but rather, a radically innovative act of love on the part of its creator and eventually, its readers and viewers.

The idea of an alchemical text being erotic and intentionally alluring to the reader is not new. Christian Rosenkreutz marries Mercury/Knowledge in the *Chemical Wedding*, personifying her and giving his life over to her pursuit.[3] In MS Ferguson 6, which draws on a wide variety of print

[2] The appendix published in the article version to this chapter lists all illustrations and major iconographic features of the manuscript, including those that do not fit into one of the named cycles.

[3] Johann Valentin Andreä. 1616. *Chymische Hochzeit: Christiani Rosencreütz*. Anno 1459. Arcana publicata vilescunt: & gratiam prophanata amittunt. Ergo: ne margaritas obÿci porcis, seu

sources as well as manuscript predecessors in the alchemical tradition, neither *eros* nor *philos* is in short supply. The manuscript is bound expensively. The paper is thick, the pigments rich and strange. There are numerous alluring naked women in each image cycle, some Knowledge herself, as well as alluring allegorical formulae for the Philosopher's Stone, both addressed directly to the reader's gaze. MS Ferguson 6 combines, for what is now the only known instance in the literature, six different and important image cycles that are themselves repeated throughout the alchemical print and manuscript corpus, strung together in a way that has never been explained before now. In order to lay bare this particular contribution, however, this reconfiguration of knowledge that shows how malleable the Early Modern "Republic of Letters" rendered texts and their images in personal, scholarly hands, one must think like the compiling alchemist.

Thinking like the compiler of an alchemical miscellany is difficult because alchemical miscellanies have received little to no scholarly attention, excepting laboratory notebooks, which are not miscellanies in the traditional sense. Frankly, we treat them as scrap work, lecture notes, or often nothing at all. But if—like Rosenkreutz, George Ripley, and the many anonymous dead kings and living scholars in the images of the alchemical corpus—we allow ourselves to fall wholly and boldy into them, these miscellanies become different. Knowledge herself, personified carnally and viscerally in many of the illustrations in the manuscript, is the guiding force for the alchemically inclined reader, and MS Ferguson 6 offers itself up to Knowledge and its reader simultaneously. Its first reader was probably also its compiler and perhaps illustrator, although it has a compelling later annotator who clearly also fell under its spell, and then transfigured the

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Asino substerne rosas. Strassburg: In Verlägung Lazari Zetzners.

cycles once again for Trinitarian purposes. If we see alchemical miscellanies as profound acts of love for, and testimony to, Knowledge, and of copying out, reproducing, and changing images as a way of making love one's own, they begin to make sense as wholes, and not simply pieces of a corpus that travels widely and fragments often.

Let us then read MS Ferguson 6, particularly in its form as a miscellany, as evidence of devotion, compiled. Anthony Grafton memorably recalls Early Modern scholars who copied books as *Defenders of the Text* in his book of the same title,[4] but MS Ferguson 6 is vulnerable. It defends nothing. It gives no justification for its own existence, no preface, and no reason beyond wanting to understand the macro- and microcosm for reading. To understand the combination and recombination of images in MS Ferguson 6 in terms of ways of knowing, one has to see them prefigured in terms of way of loving, of wanting, of immersing oneself in alchemical material like an Ovidian pool and emerging wholly transformed. The alchemist is most literally a philosopher, a lover of wisdom, but in MS Ferguson 6 he engages with that wisdom not only in reading and viewing it but also in compiling what he feels is an ideal collection of material that informs his view of what wisdom constitutes, in terms of both intellectual and emotional investment.

MS Ferguson 6 is a miscellany that forces us to reconsider what makes a miscellany—a text that is, by definition, selected and invested with personal need. In the Early Modern world, the learned miscellany, including dancing, sword-fighting, the study of fossils and stars, was a

[4] Anthony Grafton, *Defenders of the Text: The Traditions of Scholarship in an Age of Science* (Cambridge, MA: Harvard University Press, 1994).

quickly growing genre. Since this particular book is an alchemical miscellany, it demands perhaps more, an investment in the cryptic but shared iconographic commonalities of the alchemical corpus. This essay unspools this iconography, but also the general methodology of reading the learned miscellany as an act of love, as a means of understanding not only the *how* of the copyist of texts and images compiling a mixed book, but the *why*, the motivating desire behind the selections and their commonalities with each other in forming a greater whole.

I.

The historiography of Early Modern alchemy as a science is firmly set within a redemptive phase. After nineteenth-century experiential, spiritualistic approaches and the subsequent encroachment of Jungian psychological tropes on historical material, modern historians of Renaissance science have attempted to situate alchemy as just that: a scientific process with direct implications for early chemistry and physics.[5] Earlier histories of alchemy in the twentieth century, including those of Francis Yates and Betty Jo Dobbs, maintain the theological framework for the four- to twelve-step process of transmutation that creates the Philosopher's Stone—supposedly a source of eternal life and infinite gold. More recent historical works, including those of William Newman, Lawrence Principe, Tara Nummedal, and Pamela Smith, attempt both to pin down actual chemical processes in the historical furnace and to situate the

[5] The anthropomorphism of Natura and scientific knowledge itself is described as a definitional feature of the period by Lorraine Daston, "How Nature Became the Other: Anthropomorphism and Anthropocentrism in Early Modern Natural Philosophy," in *Biology as Society, Society as Biology: Metaphors*, ed. Sabine Maasen, Everett Mendelsohn, and Peter Weingart (Dordrecht: Kluwer, 1995), 37–56. For an overview of this shift, see William R. Newman, "What Have We Learned from the Recent Historiography of Alchemy?," Isis 102: no. 2 (2011), 313–321.

alchemist and his practice within social and economic frameworks of the time.[6] Drawing on both of these historiographic strands, this article situates alchemical practice within the locus of historical book and print culture in the sixteenth century and explores the Christological and other spiritual associations within the framework of alchemy as a model for nature and the universe.

The model of the overlaid macro- and microcosm, intersecting at the level of man, occurs frequently throughout the alchemical works in the Ferguson collection at the University of Glasgow. One of several excellent and comprehensive collections of alchemical material, John Ferguson's library contains both early print and manuscript sources.[7] These sources often occupied the same original collections, and as the Ferguson books evidence, alchemical knowledge travelled back and forth between manuscript and print well after the sixteenth century and even into the eighteenth century.[8] A particularly interesting example of this phenomenon, and one currently unexplored in existing scholarship, is MS Ferguson 6, an alchemical miscellany dating from the late sixteenth century.

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[6] Frances A. Yates, *The Rosicrucian Enlightenment* (London: Routledge, 2002); Betty Jo Teeter Dobbs, *The foundations of Newton's alchemy or "the hunting of the greene lyon"* (Cambridge: Cambridge University Press, 1992); William R. Newman, *Promethean Ambitions: Alchemy and the Quest to Perfect Nature* (Chicago, Ill: Univ. of Chicago Press, 2005); Lawrence Principe, *The Secrets of Alchemy* (Chicago, Ill: Univ. of Chicago Press, 2013); Tara E. Nummedal, *Alchemy and Authority in the Holy Roman Empire* (Chicago: University of Chicago Press, 2007); Pamela H. Smith, *The business of alchemy: science and culture in the Holy Roman Empire* (Chicago: University of Chicago Press, 2016). A good example of this practice in current scholarship is the Making And Knowing Project at Columbia University: http://www.makingandknowing.org/

[7] For an overview of Ferguson's life and collecting activities, see David Weston, "A Magus of the North? Professor John Ferguson and his Library," in *The Meanings of Magic: From the Bible to Buffalo Bill*, ed. Amy Wygnant (New York: Berghahn, 1996), 161–78.

[8] William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton: Princeton University Press, 1994), 6–10.

To use the word "miscellany" for a manuscript connotes a widespread collection of texts, and MS Ferguson 6 is certainly this. It was compiled by one Petrus Wintzig, named on the second recto, and contains excerpts from the pseudonymous Roger Bacon's *Mirror of Alchemy* translated into German, from the *Clavicum Salomonis*, and from other texts attributed to Arnoldus Villanova and variously, simply the mythical Hermes. What makes MS Ferguson 6 more than a simple miscellany, however, is its replication of almost every contemporary alchemical image cycle in both print and manuscript. In six parts[9], it first contains a diagrammatic furnace sequence, then pen-and-ink rebus drawings, and three painted summary panels. Next are sequences drawn largely from print sources; from the *Donum Dei*, the 1546 Aldine illustrations to Petrus Bonus's *Pretiosa Margarita Novella*, and from the 1550 Frankfurt edition of the *Rosarium Philosophorum*. Finally the manuscript's textual content drops off altogether, and it concludes with a nearly wordless copy of the *Aurora Consurgens* cycle.

These cycles, while wildly varied in iconography and format, all convey the process of chemical transmutation, that is, *nigredo, albedo, citrinitas*, and *rubedo*, each reflecting the color of the materials in the alchemist's flask at the time.[10] These four stages also represent returning matter to its initial state after creation, that is *prima materia*, a prelapsarian matter that is neither earth, air, fire, nor water, but retains the capability to become each.[11] This *prima materia*—sometimes

[9] The manuscript has six parts when divided by illustrating hand, not by the many additional annotating textual hands.

[10] Each process is described in detail with citations of original alchemical treatises in Lyndy Abraham, *A Dictionary of Alchemical Imagery* (Cambridge: Cambridge University Press, 1998), "nigredo," 135–36, "albedo," 4–5, "citrinitas," 42, "rubedo," 174–75.

[11] This concept has broadly Neo-Platonic roots in the wider Corpus Hermeticum.

called *quinta essentia* or quintessence—is then formed into the Philosopher's Stone.[12] The red stone, resurrected after the putrefaction of *nigredo* and emergence in the flames, is Christ-like, and is sometimes explicitly figured as Christ.[13]

Each of the six image cycles in MS Ferguson 6, then, is a mirror in multiple imagined senses: first of the chemical process that it allegorises, then of the macrocosm that is Creation, as well as the microcosm that is matter on the level of the elements. Each image cycle is also the mirror of the other, given that they convey the same process in radically different ways. Finally, each cycle is a historiographic mirror, reflecting a manner of depicting the alchemical process unique to its originary medium and illustrator. MS Ferguson 6 is unique in that it brings the diverse visual corpus of alchemical work together in one bound volume, and in doing so allows the visual corpus to reflect on itself.

Many aspects of the illustrations themselves are also unique to the manuscript. They are often more bodily, and more explicitly fleshly than their printed sources, and the *Aurora* and *Rosarium* respectively contain images that are often effaced in other editions. A series of annotations by later readers of the original compiled miscellany forms a worded corpus on top of this very corporeal allegory, drawing on Trinitarian unities, but also Psalms and other sources differing markedly from the text material associated with these images in other manuscripts and printed books. These alchemical bodies are in some sense naked without their typical explanations, but they are proudly disrobed by their illustrator. A green, glowing tempera is

[12] Abraham, *A Dictionary of Alchemical Imagery*, 75–76, 152.

[13] For example, in the extant manuscripts of *Die heilige Dreifaltigkeit*.

labeled as both the essential matter of the *terra* and of the human *corpus*, and reappears again and again throughout the image cycles. Green shoots emerge from flasks full of copulating, entwined, and hermaphroditic forms, all a pinkish, warm cast, bursting forth from the page limb by limb. The intercourse of all kinds may be allegorical here, but MS Ferguson 6 makes no secret in every image cycle of being, quite frankly, sexy, earthy, and full of fluids, chambers, and orifices.[14]

The first human form in the book is a rosy-breasted, lactating Sapientia. The penultimate is the two human forms representing the Galenic humors being exchanged as they each tear out their brains and genitals and switch with each other (Figures 2.24 and 2.27 respectively). Alchemical corpus-building is here literally *corpus* building, assembling bodies and chemical stones from blood, bones, guts, and the occasional set of wings. MS Ferguson 6 presents a six-fold narrative of the alchemical magnum opus as both fundamentally human and, above all, a matter for the body as well as the mind. The linked spiritus–anima– *and* corpus, a motto repeated in many illustration captions throughout the book, not only represents the Trinitarian unity of the Stone's nature, but also the mode in which it must be approached; spiritually through relevant Biblical–alchemical exegesis and commentary, mentally and philosophically through chemical technique, and finally bodily, through seeing and transitively feeling. MS Ferguson 6 thus represents a

[14] The case of alchemical images and texts in particular raises many profitable and, as of yet, unexplored questions about Early Modern sexuality. In this article I have examined the images within their own scientific–spiritual milieu, but a broader overview of the historiography of Early Modern sexuality reveals my attempt here, somewhat precariously, to balance the inescapable condition of being a modern reader with that of period readers' norms, and is a continual problem for these materials. For more on this historiographic problem, see Valerie Traub, "Making Sexual Knowledge," *Early Modern Women* 5 (2010): 251–59.

transmedial, transtextual, and cross-illustrated guide to seeing your way to the Philosopher's Stone, to feeling it as lover, to desiring it as body, spirit, and soul.

The bodily form that opens the book (f. 4^{v}) (figure 2.1)[15] is that of an almost entirely nude Sapientia, the embodied female form of wisdom, both lactating streams, and standing on fountains of *prima materia*—that is, matter before it is shaped into one of the four elements by God at the time of the creation. Behind her is an intertwined tree of life with a sun and moon in the canopy, representing opposite alchemical gendered qualities. She stands astride a rainbow over a cleft in the earth, with a landscape that suggests the presence of architectonic alchemical furnaces in the background. Sapientia is neither new as an embodied form in alchemy, nor new in manuscript culture in general. As Barbara Newman explains, Sapientia, Natura, and Marian figures respectively have long held a personified status toward their (mostly male) readers and viewers.[16] Two images follow the Sapientia figure and are clearly painted by the same hand. A tiered structure, flanked by a lamb of God, represents the stages of work leading to the production of the Philosopher's Stone (f. 31^{v}) (figure 2.2). A two-headed royal figure in two colors on top of this tree of life represents the split, hermaphroditic nature of the Philosopher's Stone. Similarly, on the right-hand side, on the recto of the adjacent page (f. 32^{r}), a sun and moon/male and female pair each hold sets of keys, evoking the *Clavicula* text, but also a common, broader metaphor for accessing the secretive processes for making the stone. The two

[15] MS Ferguson 6 has two existing inconsistent sets of foliation numbers, one of which is cited in the catalogue, but places loose leaves inserted into the front into a markedly different order from the other. I here use a hand counted foliation from the time of examining the MS.

[16] Barbara Newman, *God and the Goddesses: Vision, Poetry, and Belief in the Middle Ages* (Philadelphia: University of Pennsylvania Press. 2003): see ch. 5 for Sapientia in general, and p. 234 for the start of the discussion of alchemical Sapientia in the *Aurora Consurgens*.

vases at the forefront, notably containing lilies, are also split in half by color, again evoking the split essence of the finished stone.

The lilies, the Sapientia figure, and the fact that the tiered structure is itself a *hortus conclusus*, are all Marian themes that are expanded upon in MS Ferguson 6's later illustration cycles. In between this cycle and the next, however, is a more prosaic set of figures, these showing only half-finished sketches, in black ink, of furnaces and partial excerpts of practical chemical texts toward production. The text that concludes the section—which contains both practical and allegorical advice directly related to alchemy—is annotated in a later hand as follows (f. 76^{r}):

THE ONE

The one is necessary

The one is both the first thing and the most recent thing

The one is the centre/medium/catalyst by itself and through itself dividing all things which are joined together and joining together all things which are divided.

The one receives all works and the one does all works
There is nothing more insignificant nor more valuable than the one in the whole world or in our teaching

Whoever recognises all things in the one and from the one can separate all things and can again reduce all things to one, s/he receives power over all things through the one, and with the one is successful in all things.[15]

The one is the centre between all extreme things, making all extreme things one through itself.[17]

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[17] UNUM

Unum est necessarium

Unum primum et Unum novissimum

Unum est medium in seipso et per seipsum omnia coniuncta dividens et omnia divisa coniungens

This text does not immediately read as alchemical without context. The first line seems to evoke Luke 10:42: "porro unum est necessarium Maria optimam partem elegit quae non auferetur ab ea."[18] While this line is later used to justify the doctrine of faith alone in Reformation-era documents, here it evokes the story of Christ's visit to the house of Martha, whose sister Mary sits at the foot of Christ rather than help prepare the meal. In this, it is often read that Mary takes spiritual rather than material needs ser- iously, a parable meant to indicate priorities for later interpreters of the Gospel.

The Sapientia figure on f. 4^{v} (figure 2.1) pours male engendered *prima materia* from her left breast, and female from her right. Like Christ at the Last Judgment, she stands enthroned on the rainbow, but unlike Christ she is not the end figure in an eschatology, but its beginning and in continual presence throughout. Matter entered the world shortly after the creation, and continues

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Unum recipit omnia opera et Unum facit omnia opera

Unum est inter omnia extrema medium faciens (coniungens) omnia extrema in seipso Unum.

Uno nil vilius et Uno nil pretiosius in toto mu[n]do sed seu Magisterio nostro

Qui in uno cognoscit omnia et ex Uno etiam scit separare omnia et rursum ad Unum potest reducere omnia, ipse imperium accipit per Unum in omnia et cum Uno proficit in omnibus

Qui Uno nihil addit et Uno nihil demit, in Uno hic consistit et per Unum foeliciter perficit.

The translation and transcription were significantly aided by the generous guidance of Allison Adams at the Stirling Maxwell Centre, University of Glasgow.

[18] But one thing is necessary. Mary hath chosen the best part, which shall not be taken away from her. Richard Challoner and James Gibbons. 2007. *The Holy Bible: translated from the Latin Vulgate, diligently compared with the Hebrew, Greek and other editions in divers language*s: the Old Testament first published by the English College at Douay, A.D. 1609, and the New Testament first published by the English College at Rheims, A.D. 1582: with annotations, references, and an historical and chronological index. London, UK: Baronius Press.

to be accessible to the alchemist in the world. As the text of the "Spiegel der Alchemeii" and the *Donum Dei* extracts in the manuscript make clear, alchemy is God's—and therefore Sapientia's—gift to man in order that he might perfect matter to its prelapsarian state and see his name inscribed in the book of life.[19] For the alchemist reading MS Ferguson 6, nothing can be more spiritual than the material. Matter is itself the instantiation of God's order inscribed into the world. This recalls the Paracelsian tria prima of Mercury, Sulfur, and Salt, another Trinitarian alchemical unity circulating widely in the sixteenth century. Paracelsian-related vitalism and closely derived theories of matter crop up throughout MS Ferguson 6, but the idea that matter is itself a means of access to the secrets of God's creation is fundamentally in keeping with both earlier proto-Paracelsian views and those of Paracelsus himself.[20] Divine hypostasis as part of sixteenth-century Neo-Platonic theories of matter is certainly in keeping with the text of the "Unum" page.

The rest of the "Unum" text does not invoke Luke, but rather the descriptions of Sapientia in the Book of Wisdom,[21] also associated variously with Mary Magdalene and Mary the Jewess, an early alchemist, by Zosimus. In turn, it also parallels the description of Sapientia/Mary in the *Aurora Consurgens*, she who is the origin and mediatrix of elements—but also inextricably part of a Trinity, a unity, an unum. While this turn toward the feminine embodiment of wisdom

[19] For the long, including pre-Christian, history of this concept, see Vladimir Karpenko, *Alchemy as Donum Dei* (Berlin: Hyle, 1998), http:// www.hyle.org/journal/issues/4/karpenk.pdf.

[20] Allen G. Debus, *The Chemical Philosophy: Paracelsian Science and Medicine in the Sixteenth and Seventeenth centuries*, 2 vols (New York: Science History Publ., 1977), I: 76–78.

[21] For a brief history of the figure, see Theodore Silverstein, "The Fabulous Cosmogony of Bernardus Silvestris," *Modern Philology* 46, no. 2 (1948): 92–116. See also the descriptions cited in Newman, *God and the Goddesses*, ch. 2.

and/or chemical mercury is the explicit subject of the Aurora cycle of illustrations later on in the manuscript, it seems implicitly to underlie every illustration cycle present from the first folio on.

The Trinitarian Mary as an alchemical figure can be traced as far back as the fourteenth–fifteenth centuries in about fifteen to twenty copies of a German manuscript called *Buch der heiligen Dreifaltigkeit*. As the title promises, it is in fact about Christ and the Trinity, but also about their alchemical embodiment— particularly with regard to the mystic figure of the Virgin Mary.[22] Marian alchemical versions from an early Herzog August Bibliothek copy (Codex 151 Extravagans closely mirrored by Cod. 433 Helmst. and Cod. 188 Blank. in the same repository) anticipate closely the Sapientia figure on MS Ferguson 6 f. 4^{v} (figure 2.3). They also closely recall the next figure in MS Ferguson 6, the woman at the start of the pen illustration cycle just following the "unum" page (f. 77^{v}) (figure 2.4). Like the star-crowned, Apocalyptic Virgin who stands on the moon and in front of the sun in Cod. 151 Extra. f. 89^{v}, this queen is starred and stands on mounted fountain blocks of prima materia with pictures of the sun and moon on them.[23] She wears what looks like period-appropriate dress for an Elizabethan or Rudolphine illustration, and holds a square mirror in each extended hand. These mirrors, paralleling the Emerald Tablet, signify the reflection of the macro- and micro- cosm of each other.

[22] For a more comprehensive reading of Die heilige Dreifaltigkeit images, see Marielene Putscher, *Das "Buch der Heiligen Dreifaltigkeit" und seine Bilder in Handschriften des 15. Jahrhunderts* (Wolfenb ̈ ttel: Herzog August Bibliothek, 1986). Wolfenbüttel: Herzog August Bibliothek. This fascinating manuscript group has received far less modern attention, especially in English, than it deserves.

[23] A similar figure to this Sapientia appears in the unique *Aurora Consurgens* cycle of Codex Vossianus 29, f. 95a (Leiden, Rijksuniversiteit Bibliotheek), but she holds a single dragon instead of two mirrors.

The reflection of the macro- and microcosm as mirrors of each other: and man himself as mirror of both—is a persistent theme in alchemical texts of this period.[24] Robert Fludd's later, emblematic illustrations present this more explicitly and diagrammatically, but the contemporary source of this illustration is the printed figures of the Rosarium Philosophorum from the 1550 Frankfurt *De Opuscula* (figure 2.5). The queen and king/sun and moon figures of the print *Rosarium* are split over several pages of the manuscript, as is the figure of the mercurial lion eating the sun, and several more synthetic, less literal borrowings from the printed illustration cycle. Jaroš *Griemiller's Rosarium Philosophorum*, a contemporary Czech manuscript to MS

Ferguson 6, also copied back by hand from print sources, shows a figure much like our virgin/queen/Sapientia, also standing on fountains of *prima materia* split into essential solar/ lunar male/female essences. Both manuscript copies echo the fountain of the print edition (figure 2.6). The printed edition of the *Rosarium* also contains, just like the earlier manuscripts of *Die heilige Dreifaltigkeit*, a Trinitarian Mary, sitting between Christ and God and topped by a holy dove (figure 2.7). Reflecting back and forth like light between two facing mirrors, print and manuscript recede into each other. Unlike a mirror image, however, each iteration of the images reflects change, difference, personalization by either the artist or the alchemist himself who copied the images. The alchemical corpus is unique for how long it stays in manuscript production, that is, up until the eighteenth century. It is not that Books of Secrets reject print. Rather, it is that their reinscription, and the subsequent reinterpretation that this entails, transform standard print sources into a mirror for the state of natural philosophy more broadly, whilst the manuscript copies from print are eminently personal. The Marian Sapientia holds mirrors to the

[24] Debus, *Chemical Philosophy*, vol. 1, 87, is an example of Paracelsian claims to this effect, but the metaphor is present both earlier and later in the alchemical corpus.

secrets of the cosmos, but these also reflect, in their simple black–brown inked form in MS Ferguson 6, the intellectual cosmos of their illustrator. To redraw a printed image by hand not only reinvests it with a singular material aura, but also shows a type of segregation, a selection of that image in particular from the ever-growing chemical corpus. A secret is not necessarily void because it is readily available in print from a bookseller in any major European intellectual center: it merely becomes an open secret, relying instead on the basic knowledge of its readership to cull the unworthy from its thicket of iconography and specific terms.

Perhaps the page is a mirror, in the sense of an image as reflection, of the alchemist himself in f. 115^{r}, where in black–brown amateurish pen a tilting hierophant struggles, balancing a giant flask on his head (figure 2.8). In the flask is a condensed rebus for the production of the Philosopher's Stone. First, the consumption and death of the conjugal bodies of matter types (at top), then their rebirth as a peacock or phoenix, then their seeming death at the stage of putrefactio as a crown, and finally, at the bottom, their infinite capacity as a dragon–ouroboros once they combine to form the stone. The sun and moon flank the figure, who also struggles to balance the forms of an equilateral triangle and perfect square, perhaps a reference to the theory of shapes in Plato's Timaeus, influential in the alchemical world. This particular image again epitomizes the idea of the open secret—it is eminently readable, and in a sense philosophically usable, to a person familiar with alchemy and its many classes of images, yet utterly baffling to an outsider to the field.

II

The next cycle of images in MS Ferguson 6, on ff. 129^{r}–171^{r}, retains both this difficulty of access to the non-adept and the quality of fusing many sources and media as inspiration. This

section contains manuscript illustrations capable of being sourced, at the time of composition, only from another manuscript,[25] deriving from the *Donum Dei*, showing figures both within and outside of flasks as metaphors for the production of the stone. It also uses images of tombs and risen human figures as metaphors, these originating in the 1550 Frankfurt printing of the *Rosarium Philosophorum*. Finally it excerpts—but not does copy all of—the Aldine image cycle inserted in the 1546 reprint of Bonus's *Pretiosa Margarita Novella.* As Barbara Obrist notes for texts of this type in general, both the text and the visual recombination apparent in this section of MS Ferguson 6 were common for the time:

> On the pictorial as well as on the verbal level, a limited number of *topoi* were subject to continuously varying combinations. Increasingly, alchemical texts and their illustrations became mosaics of already existing documents, which were elaborated in a more or less original manner.[26]

It is how MS Ferguson 6 unites these diverse *topoi* that is particularly interesting. The first image in the cycle (f. 129^{r}) (figure 2.9) is the fairly standard set of figures for the *Donum Dei*: a king and queen flank a flask, representing the chemical essences to be combined within it. The colors, however, are quite vivid and unique, with both the king and queen sporting green robes —the color of oxidized copper, and therefore Venus, anticipating their chemical wedding—but with the matter in the flask and the spring of flowers emanating from it also painted a matching green. A later annotating hand has tagged the king and queen as "spiritus [alba]" and "anim[a rubea]" respectively, labeling the green material of the flask "materia nostrae corporis" and completing the Trinitarian unity. The flowers above the vase represent the gases and essential natures

[25] The images were not printed until Basilius Valentinus and Michael Maier, *Tripus Aureus* (Frankfurt, 1618), which post-dates MS Ferguson 6.

[26] Barbara Obrist, *Visualization in Medieval Alchemy* (Berlin: Hyle with University of Karlsruhe, Institute of Philosophy, 2003), 131–170.

emanating from the flask within it. The annotator repeatedly notes variations on the sentence at the bottommost portion of the page: "Terra viridis semper vitro vel vasi a principio usque ad finem operis."[27]

And indeed, although the contents of the vessel change to small, allegorical versions of the king and queen throughout the process of making the stone, the land on which the vase rests is always deeply layered, shaded green, with touches of foliage added with flicks of the brush (figure 2.10). This land is missing from the other manuscripts of the *Donum Dei*. In MS Ferguson 6, the figures inside the flask—symbolically copulating, dying, and rising in strange forms against the green—create a Boschian *hortus voluptatis* that persists throughout the section, even when the *Donum Dei* ends. It is a reminder that although we, and the alchemists, live in a fallen world, the goal of alchemy is to create a prelapsarian form of matter, to access the Tree of Life using the fruits of the Tree of Knowledge.[28] As Michel de Certeau notes, the very existence of a *hortus* of this kind is inherently poignant:

> Could it be that the precondition of discourse is to be expelled from this paradise? One must have lost it in order to be able to make a text of it. In articulating it in a language, we unremittingly prove we are no longer there.[29]

For both de Certeau and Laurinda Dixon,[30] the discourse named here is that of the Garden of

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[27] A possessive dative is used: The green land/earth is always actually the glass of this vessel from the outset to the finish of the work.

[28] Georgiana D. Hedesan, "Reproducing the Tree of Life: Radical Prolongation of Life and Biblical Interpretation in Seventeenth-Century Medical Alchemy," *Ambix* 60, no. 4 (2013): 341–60.

[29] Michel de Certeau, *The Mystic Fable*, trans. Luce Giard and Michael B. Smith, 2 vols (Chicago: University of Chicago Press, 1992), I: 50.

[30] For a detailed explanation of this work's relationship to alchemy, see Laurinda S. Dixon, *Alchemical Imagery in Bosch's Garden of Delights* (Ann Arbor: UMI Research Press, 1981).

Earthly Delights, which draws on sources like MS Ferguson 6 for its imagery. But MS Ferguson 6 itself is a necessarily postlapsarian discourse. Lacking a pure womb[31] for the birth of the stone, the illustrator allegorically appropriates the flask.[32] It is an ectogenesis, with Sapientia again overlapping with the Virgin Mary. But this womb is crystalline, visible, and although it contains what appear to be the epitome of earthly forms and earthly matter in the form of the nude chemical essences, it presents the opportunity to access their transcendent opposite; the extra-bodily, unearthly secret to life itself, imbued in the structure of matter by God just after Creation.

This is the paradox of alchemical allegory. It seeks out the trans-human, divine knowledge of eternal life, yet is bound up in human longing, death, and experience. This is perhaps why the next images of the illustration cycle take up the *Pretiosa Margarita Novella* of Bonus, but instead of copying out the abstract chart of alchemical roots and shoots that opens the print edition's cycle of images (figure 2.11), it begins with the human drama of the servants of the Philosopher Stone–King, each a planetary element, kneeling at his feet (figure 2.12). In this combined, repetitive image cycle going through the twelve stages of transmutation a total of three times, each of the three component image cycles focuses on the bodily. If it is a mirror for its print sources, it is a fleshly one, not a dark glass, but one that is a bright pink of flushed cheeks and rosy nipples. Where the original *Pretiosa* engravings and *Rosarium* woodcuts have stark lines, each of these human forms is rounded, shaded, and supple (figure 2.13). The neoclassical restraint of the Aldine edition, and the relative linear simplicity of the 1550

[31] The alchemical womb is supposed to mimic the womb of the earth and accelerate the growth of metals; William Newman, *Promethean Ambitions: Alchemy and the Quest to Perfect Nature* (Chicago: University of Chicago Press, 2004), 75.

[32] The relationship between the uterus and the glass flask in medical illustration is explored further by Rebecca Whiteley (History of Art doctoral diss., UCL, forthcoming).

Rosarium, here turn into an almost palpable excess of green hillocks and the soft contours of hips and thighs.

Another notable addition to the 1546 Aldine *Pretiosa* is a degree of figural expressiveness that renders its murder–rebirth sequence (representative of various boilings down and then putrefaction and revivification in the flask) both eerie and emotionally evocative. The king smiles gently as his white-robed servant/son stabs him. The servant sits on the king's body, his white robes bloodied, staring blankly (f. 155^{v}) (figure 2.14a). He stares out of the page, locking gazes with the viewer. In the Aldine edition, the figure wears Roman-style armor, apparently free of most blood, and looks only downward at the king. In the first image of the stabbing, the Aldine king bows his head, seemingly already dead, never smiling. The father in the Aldine *Pretiosa* (figure 2.14b) does not seem to bear his death gladly, nor does his son seem as haunted by it, as in the MS Ferguson 6 edition. MS Ferguson 6's illustrations evoke the necessary trauma of the situation, and in turn implicate the viewer, who will be replicating the allegory in the laboratory flask.

The individuated servants in their different genders and costumes, too, differ from the Aldine edition. Yet from the close translation of the text into German[33] and from the close resemblance

[33] A. E. Waite and Petrus Bonus, *The New Pearl of Great Price: A Treatise Concerning the Treasure and Most Precious Stone of the Philosophers, or The Method and Procedure of this Divine Art; with Observations Drawn from the Works of Arnoldus, Raymondus, Rhasis, Albertus, and Michael Scotus* (London: Vincent Stuart, 1963). Waite's translation of this point in the process serves for both the German and Latin:

> Enter the Palace in which are fifteen mansions, where the king, his brow circled with the diadem, sits on a lofty throne, holding in his hand the sceptre of the whole world; before him, his son and five servants kneel in robes of different colours, imploring him to bestow upon his son and his servants a share of his power; but he does not even reply to their request. The son, incited by the servants, stabs the father as he sits on the throne.

of the figure sequence in general (figures 2.15a and 15b), we know that the Ferguson artist used the Aldine illustrations as his illustration templates. From print to manuscript, we see a personal addition of guts, clothes, and emotional resonance. This is science not as effect, but as affect. What does it feel like to stab your father? This is the question the viewer asks herself, even as she enacts it with the chemical ingredients of the Philosopher's Stone. Since the son who stabs the father is a subcategory of salt, in reality this is what the viewer is asking: how does salt feel about fixing and putrefying a solution of mercury so that it turns red and then black. Modern chemistry does not ask us how the chemicals feel about the reaction. The allegorical nature of alchemy forces us to consider this kind of strange material–human connection.

The strange, fleshly vulnerability of the manuscript bodies continues on into the next subsection, which is drawn closely from the 1550 printing of the *Rosarium Philosophorum*. The printed edition begins with a figure of philosophers debating amongst themselves, following several pages later with a fountain of *prima materia* (figure 2.16). MS Ferguson 6 abbreviates the text significantly, keeping barely two sentences, and paints the philosophers as the same planetary servants from the Pretiosa portion of the cycle. They are all pointing to a markedly different fountain of *prima materia* on the facing page (f. 160^{v}) (figure 2.17). The gesture of pointing is a kind of self-aware book-ness, a gesture across what the reader knows is a gutter, but of which the illustrations in the *Rosarium* show no awareness. It seems that the planet figures of MS Ferguson 6 know self-consciously that they are devices meant to aid in the viewing of a book.

Further, the *tria prima* of Mercury, Sulfur, and Salt is identified both by symbols and *putto* heads

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> (Let an amalgam be made with highly purified water, etc.) In the third picture we see the son catching his father's blood in his robe (which is the second process of our art, already explained in the method).

in the manuscript (f. 161^{r}) (figure 2.18). In the printed version there are inter- twined dragons and a sun and moon with faces, but no use of a particularly human form. Again here the illustrator of MS Ferguson 6 chooses the palette of the fleshly when it is not strictly necessary to the printed edition from which he draws his exempla. Further, since it is able to use color where the print image cannot,[34] the manuscript image uses the green of the earth—the same green that persisted so meaningfully throughout the *Donum Dei* and the *Pretiosa* portions of the cycle—for the fluid of the fountain. *Prima materia* inherently, then, can be derived from the earth. While the Fountain of Life may only exist in Eden, this suggests that an alchemical fountain of life, that is a Philosopher's Stone derived from *prima materia*, can come from the same ground on which the viewer stands every day, rich with ores of copper and veins of gold. Here manuscript evokes a secondary meaning that print cannot. It is not simply a mirror that reflects its source in copying the basic form of it, but also a lens through which it is filtered, altered, and reformed into something entirely new.

The formation of an entirely new type of object is also what occurs within MS Ferguson 6's image cycle at this point (f. 164^{v}). The manuscript picks up the *Rosarium* prints at the point of producing the stone as a hermaphroditic substance. This is represented by a series of hermaphroditic human forms, starting with the male and female essences, following the Ovidian model (figure 2.19), submerging themselves in a pool. As Leah De Vun notes, the alchemical hermaphroditic body is an intriguing theoretical construct:

> According to alchemists, their work combined male and female elemental qualities into a compound substance of both sexes—a hermaphrodite—that was capable of

[34] There are hand-colored printed editions of the *Rosarium*—we cannot be sure that the illustrator of Ferguson 6 was not using one of these.

> transmutation. This body (since chemicals and metals were often called "bodies" in alchemy) was both, but also neither, because the alchemical process held contrarieties in stasis, creating a new substance that was outside the norms of binary division.[35]

The hermaphroditic body is also, as De Vun describes in detail, outside the norms for bodies in general. [36] The male and female forms on ff. 161–62 do not cover their genitalia, but the hermaphroditic figure always does (figure 2.20). Again, here the illustrations of MS Ferguson 6 are constructed with an aware- ness of their viewership, in this case readerly curiosity about what the genitals of a hermaphrodite actually look like. The MS Ferguson 6 illustrator does not dehumanize the hermaphrodite, but like every other person in the book, the dual-headed figure has flushed, rosy cheeks and blond hair on each head. This figure is part of the spectrum of humanity like any other. Amongst the hermaphrodite illustrations, another depiction of Sapientia/Alchemical Mercury (f. 166^{v}) (figure 2.21), who closely resembles that of the manuscript's outset and those to follow in the Aurora section, reaffirms the proud strangeness of the alchemical bodily cosmos. She once again stands on two fountains of *prima materia*, but this time—as in the body of the hermaphrodite—the two streams of male and female essence meet in a flask at the bottom of the page. She is flanked by wings, crowned by a star, and unashamed in her nudity. She holds a cup of serpents in one hand and a dragon–serpent in the other. More sex, combination, and eventually resurrection of the dead king figure subsequently concludes the cycle. In the world of Sapientia these are not strange bodies, but magnificent ones, part and parcel of the *magnum opus* that defines the structure of God's green world, ever present in the

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[35] Leah De Vun, "The Jesus Hermaphrodite: Science and Sex Difference in Premodern Europe," *Journal of the History of Ideas* 69 (2008): 193–218, at 195 and 200–203.

[36] Daston and Park. The Hermaphrodite and the Orders of Nature: Sexual Ambiguity in Early Modern France,". in *Premodern Sexualities*, ed. Louise Fradenburg and Carla Freccero (New York: Routledge, 1995), 117–136.

land painted onto each page.

III

The last part of MS Ferguson 6 is an *Aurora Consurgens* cycle. The *Aurora Consurgens* is a fourteenth–fifteenth-century devotional text that fuses alchemical and Christological themes. It is nominally a translation of the *The Silvery Waters and The Starry Earth* of Muhammed ibn Umail al-Tamimi (900–960 AD), whom the text repeatedly refers to as "Senior." While there are six extant manuscripts of the image cycle, they all differ, and the Glasgow cycle has no text at all.[37] Barbara Newman places the text, mostly in the voice of a feminine Sapientia, within the traditions of Julian of Norwich and Henry Suso.[38]Newman's deft analysis of the text connects it to the earlier manuscripts of *Die heilige Dreifaltigkeit*, but also to the broader traditions of the Song of Songs, Gnosticism, and Apocrypha. The text's name is drawn from the invocation of the Virgin in the Canticles, and its first section echoes the eroticization, along with worship of Divine Wisdom. The text's second section, written sometime after 1420, adds the alchemical figures that make up MS Ferguson 6's entire cycle.

The text begins as follows in the other manuscript copies of the *Aurora*:

> All good things came to me together with Her, that Wisdom of the South, who preaches abroad, who utters her voice in the streets, cries out at the head of the multitudes, and in the entrance of the gates of the city utters her words, saying: Come to me and be

[37] Zurich, Zentralbibliothek MS. Rhenoviensis 172; Glasgow, University Library MS Ferguson 6; Leiden, Universiteitsbibliotheek, MS. Vossiani Chymici F. 29; Paris, Bibliothèque nationale de France, MS. Parisinus Latinus 14006; Prague, Universitni Knihovna, MS. VI. Fd. 26; Prague, Chapitre Métropolitain, MS. 1663. O. LXXIX; Berlin, Staatsbibliothek Preussischer Kulturbesitz, MS. Germ. qu. 848.

[38] Newman, *God and the Goddesses*, 234–44.

> enlightened, and your operations shall not be confounded; all that desire me shall be filled with my riches. Come, children, hearken to me; I will teach you the Science of God. [. . .] And her fruit is more precious than all the riches of this world, and all the things that are desired are not to be compared with her. Length of days and health are in her right hand, and in her left hand Glory and infinite riches. Her ways are beautiful operations and praiseworthy, not unsightly nor ill-favoured, and her paths are measured and not hasty, but are bound up with perseverance and day- long toil. She is a Tree of Life to them that lay hold on her, and an unfailing light.[39]

This description is consistent with images earlier in the MS Ferguson 6 miscellany, portraying the womb of the earth, the possibility of base materials to exceed their origins and become the divine unity of the stone, and a distinctly feminine view of Scientia/Alchemy itself. It is also consistent with the view of the alchemist as prophet of Christian history, expressed through the creation of the stone as a Christological rebirth and restoration of prelapsarian freedom from choice between the Trees of Knowledge and Life.[40]

This all said, the Glasgow copy begins not with this, but with a heraldic image of a sun-shield, and on the next page with the Virgin sheltering robed scholars in her cloak like tiny children (f. 215^{r}) (figure 2.22). Even the scrolls that surround the Virgin/ Sapientia are text-less. The sheltering Virgin is a common iconographic trope. Her furrowed brow and giant body size relative to the small scholars make her seem superhuman. For a reader without the Aurora's standard text, this image evokes the Franciscan and Dominican *Madonna Misericordia*. With her

[39] This translation comes from the dual Latin–English edition: Marie-Louise von Franz, *Aurora Consurgens; A Document Attributed to Thomas Aquinas on the Problem of Opposites in Alchemy* (London: Routledge & Kegan Paul, 1968). This edition is problematic in that it does not recognize the validity of the attribu- tion of the text to a later pseudo-Aquinas rather than Aquinas himself, and in that it was prepared for Jungian analytic purposes rather than historical ones. Still, it is the only extant compilation of texts from all the manuscript copies.

[40] Chiara Crisciani, "Opus and Sermo: The Relationship between Alchemy and Prophecy (12th–14th Centuries)," *Early Science and Medicine* 13, no. 1 (2008): 4–24, esp. 16.

cloak more traditionally sheltering the beings below from arrows of plague, this Madonna appears often in Italian altarpieces, or as the *Schutzmantelmadonna* in northern manuscripts. She does not appear at all in the Zurich *Aurora Consurgens* figures, in what is likely the origin manuscript for the Glasgow copy.

So why add her to an already well-defined iconographic program? Later on in the manuscript, the alchemist–scholars suckle at the teats of Wisdom (f. 220^{r}) (figure 2.23).They inhale her scent ("cinnamonum et balsamum et myrrha electa"[41]), riot in her meadows, and drink her "Virgin's Milk."[42] This milk, as portrayed in the first two illustrations of MS Ferguson 6, is *prima materia* itself, the crucial state of pure matter as it was at God's creation, ready to make a Philosopher's Stone. The philosophers are stern Wisdom's children as they hide beneath her cloak and suckle at her breasts, but they are also her lovers when she is tender, giving forth the secret knowledge they so crave.

Wisdom/Sapientia[43] in the *Aurora* is profoundly bodily. On f. 225^{v}, her menses define the months of the year and the astrological and alchemical signs associated with them (figure 2.24). As William Eamon notes, menses was a normal object of curiosity for books of secrets, given that Pliny ascribed supernatural powers to menstrual fluid and menstruating women, while retaining so much distrust of the womanly sphere as not to investigate in person (and this was a man who died investigating an erupting volcano!).[44] Bodily fluid is not an uncommon theme in alchemical

[41] Von Franz, *Aurora Consurgens*, 138.

[42] Ibid., 109

[43] The figure is labeled as Sapientia and as Natura interchangeably in the sparse text at this point.
[44] Eamon, *Science and the Secrets of Nature*, 25.

vitalism. In Glasgow MS Ferguson 67, while it is Sapientia's milk that fertilizes the womb of the earth with metals, it is her menses that supplies it with animals—including man[45] (figure 2.25). This is not an idealized Virgin whose womb is a *hortus conclusus*, because it is immediately apparently that her womb leaks blood. Yet this blood, this milk, is eminently sacred, godly, and essential to human salvation through knowledge. Rather than rendering the secretions of the normal female body dirty, the *Aurora Consurgens*, with or without its textual context, makes them soteriological necessities.

Yet there are no strictly normal bodies in the Aurora cycle of MS Ferguson 6. On f. 240^{r} an apparently male and female figure exchange organs (figure 2.26). They are like grotesque dolls, the right-hand figure holding a severed penis and offering up its own heart. His head is flipped open exposing a cavity that the female figure will presumably soon fill. These are not male and female bodies per se, but embodiments of the male and female essences of matter. During the production of the Philosopher's Stone, they exchange qualities[46]—wet for dry, cold for hot etc.—that are embodied by allegorical gendered innards in this figure. Where the illustrator could have chosen a dry, standard fourfold diagram to represent the humors, here he emphatically errs on the side of the bodily.

If these gapingly open, wounded allegorical human bodies are abnormal, so too is the figure that follows (f. 240^{v}) (figure 2. 27a). The last illustration of MS Ferguson 6 is, amusingly enough, of copulating chickens. While a female chicken normally sits on the nest of eggs, , the product of the unnatural union of two roosters is illustrated in an earlier figure—it is the basilisk (figure

[45] These lines are explicitly identified as menses in the adjoining text.
[46] Abraham, *Dictionary of Alchemical Imagery*, 146.

27b).[47] Each instance of the unnatural here results not in damage or condemnation, but in slightly monstrous, wondrous strength. From the *vulnera*, the wounds, of the Galenic figures, comes the endlessly powerful hybrid Philosopher's Stone. From the roosters comes the basilisk that can kill at a glance and be boiled down for gold. In the MS Ferguson 6 *Aurora*, from oddities, from vulnerabilities lurking at the far ends of the natural world, come great power and beauty; from broken things comes the most holy of wholes.

Such is the case for the triumphant black angel on f. 227^{r} (figure 2.28). Referring to the passage in Psalm 104 (KJV) she is "nigra sed formosa" and in the *Aurora*'s original manuscript text she offers the apocalyptic morning star to the hand of her lover at the beginning of a sensual speech describing their cosmic tryst in the service of true knowing.[48] She stands on the blue hill of the moon, her green Venusian wings spread wide, sheathed in a pure white dress. She holds open her own womb, red like the Philosopher's Stone, and bearing the caduceus of Mercury. This time of dawn is literally and figuratively pregnant—it is the time of infinite possibility when dark is balanced with light that Jakob Boehme later called the "Time of The Lily."[49] The aurora is rising. Anything is possible.

The annotator of MS Ferguson 6 has added a single line to this page, a reference to Psalm 103:

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[47] Lawrence Principe, *The Secrets of Alchemy* (Chicago: University of Chicago Press, 2013), 54.

[48] Von Franz, *Aurora Consurgens*, 133–34.

[49] For Boehme's original text and a translation, see Andrew Weeks, trans., intro. and comment., *Aurora* (Morgen Röte im auffgang, 1612) and *Fundamental Report* (Gründlicher Bericht, Mysterium Pansophicum, 1620) (Leiden: Brill, 2013), http://public.eblib.com/choice/publicfullrecord.aspx?p= 1582231. For more on the connections between alchemy and Reformation-era religious thought, see also Tara Nummedal, "Alchemy and Religion in Christian Europe," *Ambix* 60, no. 4 (2013): 311–22.

"Amictus lumine tamquam vesti- mento." The actual line from the Psalm is "amictus lumine sicut vestimento: Extendens cælum sicut pellem [. . .]" (you are dressed with light like a garment, while you stretch out heaven like a tent). And here on the page is our Sapientia, radiating spikes of gentle golden yellow, just as the annotator notes. The psalm says, like the original Aurora text, that the abyss is her garment, but goes on to describe the sated thirst of wild asses in her fields, the nesting of sparrows, the setting of the sun and moon and the fecundity of God's earth. This is the possibility of creation. It is also the realm of possibility of alchemy—a type of re-creation, stretched out like a tent over MS Ferguson 6, each image cycle repeating anew the same steps, encircling the stone and Wisdom as lover, calling out to the possibility of making matter itself new.

MS Ferguson 6 is thus a miscellany, but not a miscellany as random assortment or culled group of texts. It is instead a radical synthesis of iconographically distinct pictorial cycles that are all approaches to the Philosopher's Stone. It is also a testament of love, each cycle a mirror to the other, each the same but different, each diverse children of the same codicological stemmae, collected together at last. MS Ferguson 6 embraces the Trinitarian unity of the alchemical process, but also the unity of the media used to describe it. Print and manuscript, copy and original, are boundaries that no longer contain the manuscript's images.

Like Sapientia herself, MS Ferguson 6 is itself a mediatrix of elements—of type and engraved plate, of woodblock and pen, of tempera and ink. It is a catalogue of bodies, to which the philosopher–reader is both partner and divine manipulator at the furnace. The historiography of this particular book, its Neo-Platonic, Christian, and Gnostic roots, its relationship to both God and His Creation, is inscribed across it as we read. We are its lover and beloved, each image of knowledge sealed in the timeless crease of bound folia, our intertwined bodies and enraptured

minds illustrated in full; our hastened kisses as chemical fires, our struggle of elements enlivened as pages that are also rumpled sheets.

Chapter 3: Vegetable Love

I.

This chapter takes the book and manuscript illustrations from the collections of Elias Ashmole, currently held in the Bodleian Library, and makes them a case study for an affective methodology of imagining Early Modern scientific-alchemical illustration in light of the Early Modern garden and its associations. In particular, I shall connect the two main subcategories of Ashmole's scientific book holdings, the alchemical and the garden books, through their linked use of feeling to evoke the macro-microcosmic relation central to the Hermetic world. Ashmole's own published anthology, the *Theatrum Chemicum Britannicum,* carefully employs border engravings of plants and naturalia to legitimise and propagate its context amongst the rapidly growing ranks of the early Royal Society and the learned both mercantile and gentry scientific elite. MS Ashmole 1423, an alchemical formula book that uses the tropes of the garden, serves as a touchstone between the world of the Ripley Scrolls, and that of the Tradescant Orchard Book (MS Ashmole 1461), and other garden varia, including books of actual dried flowers. Taking these books together in the culture of growth and discovery in 17th-century England shows that they serve as both a powerful testament to the antiquarian desire to preserve knowledge, and to its vulnerability to human affairs.

Let us begin with the problem of Englishness[1], specifically the idea of English manuscripts and their style. It is often the case that we localise, catalogue, and even date manuscripts based on a

[1] *Pace* Pevsner, whom I shall address in the final monograph of this thesis at length.

set of characteristics loosely known as style. As in: "This is a Book of Hours of a typical 14th Century French Style" or "This is a 12th Century Psalter in an Anglian Style." National or proto-national styles tend to favour the Continent, excepting a group of East Anglian 14th century manuscripts, and English style is often pejoratively seen as at best deliberately appropriative, and at worst, as a bald imitation which fails to live up to the subtlety of the Continental exemplar in question. Foreigners imported to England to make art objects complicated the problem. Consider Bod MS Selden Supra 77 F.1r (Figure 3.1). Its only illuminated page border, a bright gold ground with acanthus and clearly delineated pinkish flowers, is described by Pächt in the catalogue[2] as an English imitation of the Flemish border style of the period. Scott[3], by contrast, includes it in her book of seminally English manuscript styles. Pächt's reasoning might derive from the use of acanthus and flowers, here more brightly delineated and less intertwined with tiny offshoots than a typical contemporary Flemish book. For Pächt, the brighter, nominally simpler flowers, the smiles in the small figures of the historiated initial, are perhaps, as English manuscripts are often described, charmingly naïve. For Scott, these features are not naïve at all, but an intentional stylistic choice that makes the manuscript not an English imitation of a Flemish style that fails in its relative simplicity, but an English style all its own.

The argument for an evolving English manuscript style over several types of book and several centuries is likely impossible to make—first, because we do not know who the illustrator of many books is, and from where he came, and whether or not the borders were a package deal.

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[2] That is, of illustrated manuscripts in the Bodleian Library. Pächt, Otto, and J. J. G. Alexander. Bodleian Library. et al., *Illuminated Manuscripts in the Bodleian Library, Oxford* (Oxford [England]: Bodleian Library, 1969).

[3] Kathleen L. Scott. *Dated & Datable English Manuscript Borders, C. 1395-1499* (London: Bibliographical Society : British Library, 2002). P. 118-119.

Secondly, the difference between monastic and commercial production loom, as does the problem of not-yet-stable national identity and borders. This would, at first glance, appear to be a thorny and as of yet unresolvable problem for the scholars of the 21st century. For Elias Ashmole, though, it was a quintessentially 17th century problem, and one that he and Robert Vaughan (circa 1600-circa 1660), the engraver he commissioned to illustrate the printed edition of his *Theatrum Chemicum Brittanicum*, had to resolve before the plates even went to press. The *Theatrum*, as its own prologue insists again and again, is a thoroughly English enterprise[4], designed to redeem English alchemy in the eyes of its compatriots and legitimise it in the wider sphere of European arts and letters. Ashmole opens the prologue with a mini intellectual history of Hermetic thought in England, asserting "Our *English Nation* hath ever beene happy for *Learning* and *Learned men,* and to illustrate this, I hope it will not prove distastfull." He then goes on to list English authorities, from the Saxons forward, whose works he has reprinted in the *Theatrum* in order to bring them to the wider world. The *Theatrum* is an anthology of alchemical works, mostly from Ashmole's own manuscripts, that also serves a distinctly social, and even political purpose in publication.

Robert Vaughn, who was like Ashmole, a Royalist[5] and an interested party in the Hermetic arts, chose to make the borders of the *TCB* reflect not only the content, but also the style, of the

[4] On the literary 'Englishness' of Ashmole's compliation, see Stanton Linden's Introduction p. xxx-xxi from Robert M. Schuler, *Alchemical Poetry, 1575-1700 : From Previously Unpublished Manuscripts* (London: Routledge, 2013).

[5] The National Portrait Gallery offers a short biography of Vaughn to this effect: http://www.npg.org.uk/collections/search/person/mp55536/robert-vaughan Similarly a biography from the Benezit dictionary of artists: https://doi.org/10.1093/benz/9780199773787.article.B00188879

Simon Turner, "Robert Vaughan and Monumental Brasses," *Print Quarterly.*, 2011, 305–9. There is very little biographical information available on this heretofore minor engraver.

manuscripts the anthology drew on. Looking at the first couple of borders from the *TCB,* three questions arise: If Vaughn was imitating English manuscript borders, were those originals, like that of Selden Supra 77 in Pächt's reading, simply imitating Flemish borders? What does it mean to have a printed imitation of borders that were themselves imitations of other manuscript borders from Flanders? If the borders of the original manuscripts, have, as Scott might suggest, their own unique stylistic vocabulary, what does it mean to replicate *that* in print? As for the text of each page, Ashmole again reminds readers in the prologue how fundamentally English it is: "As for the whole *Worke* it selfe, it is *sheav'd* up from a few *gleanings* in part of our *English Fields;* where though I have bestow|ed my *Industry* to pick up here and there…" The figurative fields of knowledge gleanings become the text fields of the *TCB*'s pages.

Of course, in the England of the 17th Century (and for approximately 10 or so centuries before that) one could not have a field without a hedgerow. A hedgerow, that is a group of scrubby shrubs, flowers, and fruits growing wild on the borders of cultivated land, is a quintessential English landscape feature, inscribed as early as 940 as the Old English word "heggeræw" and through most of English poetry and prose. The description of Toad's hapless motorcar trip in the second chapter of *The Wind in the Willows* as "The open road, the dusty highway, the heath, the common, the **hedgerows**, the rolling downs!" speaks to the ineluctable role the hedgerow finds itself in describing and picturing the Englishness of the English countryside. It makes sense then, that in a book whose fields of text are English alchemy, that its borders, the hedgerow of the page, should be themselves literal and figurative hedges of English composition. Robert Vaughn, if he did copy Flemish manuscript borders, sometimes populated them with quintessentially English plants and animals (Figure 3.2). Whether the manuscript border the printed book

imitated was truly Flemish or English in style or origin almost ceases to matter at this point, since Vaughn and Ashmole, through careful placement and choice of engraved subjects, render it as English as Chaucer, Lydgate, or the riverside of Rat and Mole. The Englishness of English Alchemy is thus embedded in a pictorial broadside, concerning the Englishness of English *naturalia* in book borders, even when those *naturalia* themselves were, in a direct contradiction, taken from Continental pattern books and sources. Just as Ashmole's act of anthologising makes Continental alchemical knowledge English, or makes it lend authority to English alchemy, so too does the border illustration make Continental border animals props to English alchemical and textual content.

What is not natural or at all wild is the initial frontispiece engraving to the *Theatrum.* This string of animals—eagle, serpent and toad—connected by a crescent moon embedded in a sun, represent a condensed form of the process for making the Stone as elaborated by the images of Ashmole's own Ripley Scrolls (Figure 3.3).[6] The descriptive text roll below this image reads: "Serpens et Bufo gradiens sup. Terra(m) Aquila volans, est nostru(m) Magisteriu(m)." The sequence of creatures, themselves metaphors for chemical and theosophic processes, are the key to the 'Great Work'. "Magisteriū" as a form of the word "magisterium" analogises the holy teaching power of the Catholic Church with the holy teaching power of this volume to the alchemical priesthood.[7] Above this image is Ashmole's fraternal pseudonym, *Mercuriophilus Anglicus*. Right below the image is the word "London" and the name of the printer (Nath.

[6] The poem on the scrolls, but not their image sets, is replicated in the TCB.
[7] Ashmole was officially adopted by William Backhouse as his spiritual son in the vein of continuing the transmission of this 'priesthood'. See: Robert M. Schuler, "Some Spiritual Alchemies of Seventeenth-Century England," *Journal of the History of Ideas* 41, no. 2 (1980): 293–318.

Brooke at the Angel in Cornhill). The context could not be more clear. Alchemy may have a long and storied Continental history and tradition, but the magisterium of this particular volume is one that like the eagle, snake, and toad of the frontispiece, springs natively from English soil and English minds, and comes off an English press. The pope may be in Rome, and the archbishop in Canterbury, but there is room for the Hermetic holy in one of the oldest wards in London, between Threadneedle and Leadenhall Streets.[8]

The first of Vaughn's full plates is at the opening to Norton's *Ordinall*, another alchemical text that describes the steps for making the Philosopher's Stone (p.12, Figure 3.2). The central plate shoes the dove of the Holy Spirit, with two angels, holding a text scroll, Below them, in a symbolically ornamented architectonic space, an alchemist figure, who appears to be Norton, as he kneels before a turbaned Hermes Trismgestus figure and offers a bound book to him. The book contains alchemical secrets he is giving to him, as its Latin text scroll, denotes, "Secreta Scientiae, Alkymiae secrete servabo". This plate of Vaughn's is included in Ashmole's manuscript copy of the *Theatrum*, without the borders, which were for strictly public consumption and rhetorical use. Further, the central plate, and in fact all the central plates of this set of illustrations, appears in close copy in Ferguson alchemical manuscripts in Glasgow, and Sloane manuscripts in the British Library.[9] This was a relatively standard illustration to Norton's *Ordinall* , that pre-dated the custom engraved borders for the book.

[8] Incidentally, London's first coffee house was also opened nearby the press in Cornhill in 1652, the same year of the book's publication. This reflects the growing public interest in both printed works, and discussion of, philosophical issues at the time (including alchemy).
[9] MS Ferguson 191

While the two human figures sit on a black and white checked floor receding perspectivally into the background two rabbits, directly below them, sit on a slightly receding engraved lump of earth in the marginal border (Figure 3.4). These are not the rabbit-types of the Luttrell Psalter[1011] or other known East Anglian manuscripts, which the antiquarianising Vaughn might have copied as models instead. These rabbits perform no burials, church services, or hunting of humans. The rabbit on the right, parallel to the Hermes figure, sits passively, whilst the one on the left plucks the leaf of a meadow plant. Within their own sphere, the rabbits perform roughly the same action of giver and recipient as the humans in the central plate do. Surrounded by wild strawberry, cherry, iris, and meadow flowers, just as the humans are surrounded by carved columns with sculptural allegorical figures for knowledge, they inhabit their natural order in the world. Norton gives his allegorical knowledge to Hermes as the Trinitarian God supervises. The rabbits exchange leaves as Norton and Hermes, and in turn God, supervise them. Directly below the right-hand rabbit is Vaughn's engraver's signature. There is a natural order to the alchemical world, the plate and marginal decoration suggest. First comes God, then his priests of matter the alchemists, then the animals of matter itself, and not to be forgotten, the engraver who cuts into copper to picture the whole scene. Rather than suggest subversion, or a world with malleable bounds, Vaughn's marginal illustrations enforces the hierarchy of the central plate. Everyone and every thing in its natural place. Alchemy, rather than reversing or perverting the world's order, here seems to fit into it, or even enhance its perfection. As Norton says on the facing page to the plate, alchemy "Forsaketh Extremities, with Measure is content." (p.13). The border is a locus of importance, and not merely as a *locus amoenus*.

[10] British Library, Additional MS 42130. For an overview of this manuscript, see: Michael Camille, *Mirror in Parchment : The Luttrell Psalter and the Making of Medieval England* (London: Reaktion Books, 1998)

To remind readers of the difference here, Ashmole's own copy of the *Theatrum* is richly coloured and gilded, but lacks Vaughn's borders surrounding the main plates.[12] This suggests that the borders were carefully targeted to Ashmole's book's audience and not the man himself. They were part of the *Theatrum*'s broader, propagandistic aims. Unlike the subversive borders of Michael Camille's exempla in *Image On The Edge*, these borders enforce the central textual aims of the book rather than subvert or problematize them. They are public objects for public consumption—and for public manipulation. Like the hedgerows that are simultaneously a marginal space on the edge of English fields and also a means of policing their borders, the *Theatrum'* marginal *naturalia* are simultaneously a little wild, but also a border against true wilderness.

Chapters two through five of the *Ordinall* section are populated with two plates that illustrate the book's methodology of learning by assemblage of a multitude of texts. In Chapter 3, Ashmole's transcription of Norton notes why this is necessary[13]

> For Auctors which of this Arte doe write,
> Besought God as witnesseth Democrite,
> That he unpained would fro this Worlde take
> Their Soules whom he tought Bokes thereof to make
> For greatly doubted evermore all suche,
> That of this *Scyence* they may write too muche :
> Every each of them tought but one point or twayne,
> Whereby his fellowes were made certayne
> How that he was to them a *Brother*,
> For every of them understoode each other;
> Alfoe they wrote not every man to Teache,
> But to shew themselves by a secret Speache :
> Trust not therefore to reading of one Boke,

[12] See Bod MS Ash 971-2.
[13] TCB p. 40

> But in many Auctors works ye may looke ;
> *Liber librum apperit* saith Arnold the greate *Clerke*,
> *Anaxagoras* said the fame for his werke :
> Who that slothfall is in many bokes to see,
> Such one in Practice prompt shall never be…

To paraphrase, each 'Brother', or God-recognised holy man endowed with special alchemical knowledge, is snatched from the world by God after writing only one book that claims to contain the whole of the 'Great Work' of making the Philosopher's Stone. In reality, each book written by each man only has *part* of the secret, making it impossible, until this very compilation where they are all set beside one another for the reader to access. Further, the philosophical brotherhood of the alchemists uses a kind of 'secret speache'—either emblematic language, actual hieroglyphic or encrypted images, or sometimes quite literal encryption. The reader must have both the knowledge of the secret speech and access to the library of multiple books each containing part of the Stone process. Taken together, with the advent of print that allows many disparate manuscripts from his own collections to be combined, Ashmole provides both. Anyone who reads the *Theatrum* properly can now join the sacred, secret brotherhood of the elect alchemists—if they manage to make a Philosopher's Stone correctly, of course.

The first central plate on p. 44 features four of the alchemical masters of the past (Geberus, Arnoldus, Rasis, and Hermes himself) each handing down one step, via hanging scroll, to anonymous men working below (figure 3.5). The masters inhabit a fictive architectonic space that is outside the and time of the world below, which mirrors our own. Like the actually Ripley Scrolls, of which Ashmole owned five, the dangling texts connect the eternal world of alchemical knowledge with the living world of present alchemical practise. This process looks distant, as the figures of the past never directly interact with those of the present. Yet, Norton's

text, reflecting a language of personal interaction and intimacy within alchemical writing as a whole, makes this knowledge transfer seem almost tender (Chapter 2, p.33):

> 'My very trusty, me deere beloved *Brother*,
> I must you answer, it may be none other;
> The tyme is come you shall receive this Grace,
> To your great comfort and to your Solace:
> Your honest desire with your great Confidence,
> Your Vertue proved with your Sapience;
> Your Love, your Trewth, your long Perseverance,
> Your steadfast Mind shall your Desire advance: …."

One deceased master/brother speaks both in the present in the Norton text, and in the past to the reader because he transfers knowledge from his received writing and not his own mouth. Yet though literally speaking from the grave, he uses the phrase 'deere beloved' and the second person to address his recipient. United through their shared 'love' and 'trewth', their rhetoric is one of emotion.

The mouse in the bottom of the page border can be read along the lines of this theme with several variations. The mouse looks as if it is copied from Dutch naturalia, particularly the engraved work of Joris Hoefnagel (figures 3.6a and b). Common to such works is the use of the Erasmian adage "Mus non uni fidit antro."[14] [The mouse does not keep only one hole]. In full the Erasmus text reads (with Toronto translation below):

> *Adagium V i 4 (ASD)*
>
> *Mus non uni fidit antro — A mouse keeps more than one hole*
>
> *Locus:*
>
> *Prudentia*

[14] For more on this connection see: Thea. Vignau-Wilberg, *Die Emblematischen Elemente Im Werke Joris Hoefnagels,* (Leiden: Universitaire Pers, 1969). P. 186-7.

> *Nihil hodie est decantatius apud vulgus, quam eum murem esse miserum, cui non est nisi unus cavus. Idem Plautus expressit in Truculeto: Sed tamen cogitato mus pusillus quam sit sapiens bestia, Aetatem qui uni cubili numquam commitit suam. Quta si obsideatur unum, aliunde praesidium gerit. Locus erit adagio si quem admonebimus, ut sibi plures amicos paret, aut una cum opi- bus studeat philosophiae, ut si fortuna quod suum est eripiat, in literis sit praesidium.*
>
> One of the most common popular sayings today is 'It's an unhappy mouse that only has one hole.' Plautus has the same idea in Truculentus: Just consider how wise a creature is the little mouse, Who never to one hidey-hole alone entrusts his life. If siege is laid to one, he finds at another his defence. This adage will find a place if we advise someone to provide himself with abundance of friends or to give thought to philosophy as well as to material well-being, so that if Fortune removes what is hers, learning may provide some defence.

The alchemist looks *both* to philosophy and material well being in the production of the Philosopher's Stone, for it in theory should provide infinite gold as well as understanding of the structure of the universe. Hewing more closely to the *Ordinall's* text though, the philosopher-mouse must also have many friends, specifically dead ones in secret books, because no one book written by any one philosopher gives the full secret away. Fortune can, and has, make the books disparate from each other (recall the fate of monastic libraries during the Dissolution that held many early English alchemical texts, which took Ashmole almost his whole life to attempt to reconstruct). Thanks to the *Theatrum's* existence the philosopher as mouse always has another hole to dive down, another newly transcribed and printed manuscript to examine for clues.

The mouse is accompanied by a vine of walnuts, which is its food in the Hoefnagel prints as well. It can pluck them off the vine like books off a shelf, or in this case, texts from an anthologized collection at the ready. The hunting dog to his right (figure 3.5 detail) is disproportionately small, and clearly added by Vaughn to a mouse model inconveniently large for it. It is somewhat poorly positioned, so that its legs disappear into the page. Nonetheless it

does what the mouse doesn't have to; it has flushed the catch out for the hunter. In this case, the reader is a hunter of texts. The four winged insects at the top half of the page, like the four masters on the balcony, belong to the airy heavens, where one ascends once one has written one's alchemical secrets down for the brotherhood of posterity.

The second plate in Chapters 2-5, on p. 51 of the *Theatrum*, plays with architectural space and the passage of time in a similar way. Adam and Eve gesture to one another across the vaulting (figure 3.7), alluding to the pre-Lapsarian garden and the Tree of Knowledge alchemy aims to return to.[15] The time of Adam is decidedly not the historical time of the alchemist figure, who is again linked to it by ribboned scrolls of knowledge. Sitting at a money changer's table, the alchemist sorts not gold, but the sun and moon, which represent the masculine and feminine essences of matter. Two workers purify elixirs, as described in the following text chapter, on the furnaces below. Three birds inhabit the marginal plate (figure 3.7 detail). One is possibly an old world songbird, but two have distinctly New World nasal passages and beaks. Alchemy, known as the 'language of birds', requires comprehensive knowledge of the natural world; a world which in Ashmole's time had been vastly expanded and contained mysterious and humbling variety to account for.

The chapter that follows links the use of language describing the earth or the garden to that of alchemy. On page 65, Norton describes the properties of the colours in the purification process, and the entry for green reads:

> "*Greene* as a *Smaragde* is of Water cleere,
> With Erthy substance Combust mixt full neer:

[15] I discuss this theme at length in Chapter Four of the thesis.

> And the cleerer suvstance that the Erth be,
> The cleerer, greenness theoreof ye shall see"

The green of beryl and emeralds, linked to the green of the Pre-Lapsarian garden, is also explicitly a phase of production for the stone. Garden and hedgerow are never too far from library or laboratory.

The library, laboratory, and garden as *loci* of Early Modern emotion are not limited to Ashmole, nor his citation of Norton's *Ordinall*. Like Ashmole, Bacon was another iconic Early Modern antiquarian who used his collections, and poetic writing about them, both for self-fashioning and world-fashioning.[16] Bacon's poetic language in his 1625 essay *Of Gardens* is iconic in this manner:

> God Almighty first planted a Garden; and, indeed, it is the purest of human pleasures; it is the greatest refreshment to the spirits of man; without which buildings and palaces are but gross handy-works: and a man shall ever see, that, when ages grow to civility and elegancy, men come to build stately, sooner than to garden finely; as if gardening were the greater perfection.

Ashmole, in his preface to the TCB, refers to the secret of the Philosopher's Stone as "treasur'd up in the bosome of Nature" (A2r), and describes in great detail several local products of the Vegetable Stone (a sub-creation of the Philosopher's Stone):

> For, by the Vegitable may be perfectly known the Nature of Man,
> Beasts, Foules, Cities, together with all kinds of Trees , Plants,
> Flowers &c, and how to produce and make them Grow, Flourish &
> beare Fruit ; how to encrease them in Colour and Smell , and Men
> and where we please, and all this not onely at an instant Experimenti
> gratia, but Daily, Monethly, Yearly, any Time, at any Season ;
> yea y in the depth of Winter. And therefore not unlike, but the Wall-
> nut-Tree which anciently grew in Glastenbury Church-yard, and

[16] See for a detailed discussion of the two men's libraries and this tendency in general Vittoria. Feola, *Elias Ashmole and the Uses of Antiquity* (Paris: Blanchard, 2012).. Chapter 3, p. 60-105. "Uses of textual antiquities: Ashmole's libraries for Baconian antiquarianism and self-fashioning".

> never put forth Leaves before S.Barnabies Day , yet then was fully loaded with them, as also the Hawthorne there, so greatly fam'd for shooting forth Leaves and Flowers at Christmas, together With the Oake in New-Forrest in Hampshire that bore griene Leaves at the fame Season; may be some Experiments made of the Vegitable Stone.

Gardens, especially alchemical and scientific gardens, were wonders that were part of English life and the aim of perfection that pre-occupied the antiquarian experiments of the period. They were also, like the texts that guided them, infused with longing for a new Garden of Eden in a fundamentally fallen world.

Texts, and libraries full of texts, were themselves a type of garden and privy to the some of the same affective and poetic contexts literal gardens were. Both Leah Knight and Rebecca Bushnell devote book-length studies[17] to the book as garden, noting the connection between "poesy" and "garlands" of verse with posy flowers, the nature of both printed and manuscript herbals as miniature gardens in and of themselves, and the physical composition of books as related to plants and their byproducts. Ashmole's own collections include two *Hortus Siccus,*[18] or dried flower, manuscripts, in which one can still smell the grassy odor of the pressed plants, themselves arranged in shapes reminiscent of the early printed herbals of John Gerard. Ashmole's other holdings, including the *Tradescant Orchard Book*, are discussed at greater length in this context below.

[17] See both: Leah Knight, *Of Books and Botany in Early Modern England : Sixteenth-Century Plants and Print Culture* (Farnham: Ashgate, 2009).. And: Rebecca W. Bushnell, *Green Desire Imagining Early Modern English Gardens* (Ithaca [N.Y.]; London: Cornell University Press, 2003).
[18] Bod MSS Ashmole 1456 and 1502

The works of Hugh Plat, John Evelyn, and Michael Drayton, solidify the connection between both gardens and alchemy and gardens and affect, both in terms of illustration, and of language, evoking the greenery of the Early Modern garden and forest as inherently symbolic, personal, and designed to make the viewer feel deeply. Plat, Evelyn, and Drayon were roughly contemporaries of Ashmole's Royal Society at different times, and reflect a cross-section of English learned culture at the time. Plat, (bap. 1552, d. 1608), the author of a treatise entitled the "Philosophicall Garden" as well as a collector, inventor, and mercantile gentleman, used both Petrachan sonnets and alchemical texts by Della Porta as personal models, while providing everything from month-by-month planting guides to botanical fever remedies.[19] Evelyn (1620-1706)[20], a copious diarist and author of other works, also started writing the *Elysium Britannicum* in 1652. The book was a comprehensive garden history of Britain, but also a poetic reflection on the nature of nature itself, extending to his late works like the *Sylva* on tree cultivation. Michael Drayton (1563–1631)[21] like Plat came from humble origins and had a personal closeness to the land, but his meteoric rise as a poet led to a meditation on nature and English nature more generally in his 1612 "*Poly-Olbion, or, A chorographicall description of all the tracts, rivers, mountaines, forests, and other parts … of Great Britaine*." In the Second Song (lines 3-18), he deftly unites landscape, Godly secrets, and emotive feeling in verse, with emerging British national sentiment:

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[19] Summary of Plat's life here based on the Oxford DNB: Sidney Lee, 'Plat , Sir Hugh (bap. 1552, d. 1608)', rev. Anita McConnell, first published 2004, 1157 words http://dx.doi.org/10.1093/ref:odnb/22357

[20] Again I use the DNB as a guide here: Douglas D. C. Chambers, 'Evelyn, John (1620–1706)', first published 2004; online edn, Jan 2008, 4493 words, with portrait illustration. http://dx.doi.org/10.1093/ref:odnb/8996

[21] Ibid: Anne Lake Prescott, 'Drayton, Michael (1563–1631)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004; online edn, May 2015 [http://www.oxforddnb.com/view/article/8042, accessed 25 Sept 2017]

Thou powerfull God of flames (in verse divinely great)
Touch my invention so with thy true genuine heate,
That high and noble things I slightly may not tell,
Nor light and idle toyes my lines may vainly swell;
But as my subject serves, so hie or lowe to straine,
And to the varying earth so sute my varying vaine,
That Nature in my worke thou maist thy power avow:
That as thou first found'st Art, and didst her rules allow;
So I, to thine owne selfe that gladlie neere would bee,
May herein doe the best, in imitating thee:
As thou hast heere a hill, a vale there, there a flood,
A mead here, there a heath, and now and then a wood,
These things so in my Song I naturally may showe;
Now, as the Mountaine hie; then, as the Valley lowe:
Heere, fruitfull as the Mead, there as the Heath be bare;
Then, as the gloomie wood, I may be rough; though rare.[22]

Thomas Moundeford (1550–1630), whose creation of MS Ashmole 1423 I shall return to, was a part of these same learned circles, and share many of the polymathic concerns of Drayton, Ashmole, Evelyn, and Plat. Moundeford was an officer of the Royal College of Physicians several times, and personal physician to Elizabeth I and James I. He was also the translator of Du Laurens' French language treatise on melancholy, a subject on which he was expert, into Latin as '*De morbis melancholicis Tractatus'* (it was then subsequently translated into English shortly thereafter by Surflet). MS Ashmole 1423 is a collection of paper copies of alchemical formulae found in a purported medieval manuscript in the then-dissolved Nostall Abbey in Yorkshire, situated in a rough and 'gloomie' Northern wood. The hand is Moundeford's, but his name is effaced on the frontispieces, perhaps due to later political concerns about his Stuart and Catholic sympathies. The relatively small volume (14.5 x 4.5 x 20 cm), now in the Bodleian Libray, is rebound in Ashmole's own 17th century standard leather binding, with intact heraldic-impressed clasped identifying it as part of his collection. The notes in the MS are mostly Moundeford's,

[22] This text is made freely available by the University of Exeter's Poly-Olbion project: http://poly-olbion.exeter.ac.uk/about/

although they contain occasional interpolations in Ashmole's own hand, indicating he read (and perhaps even tested) the formulae, which are mostly variations on widely disseminated standard approaches to 'fixing' mercury using various forms of sulfur and salt.

Although Moundeford was clearly not a trained illuminator, the very first frontispiece (3v) has a certain rhythmical whimsy, with the date of the copied text ("Anno 1437") at the top, and the date of composition of the copy ("Anno 1596") at bottom (Figure 3.8). Though Moundeford's last name has been scratched out, his initials remain prominent. Moundeford notes the location he was in at the time the book was copied (Nostall Abbey[23]), the author and that the original manuscript text was on parchment rather than paper. He does not note any illuminations or give any indication the original manuscript was illuminated, which would have been unusual for a scientific formula book of the period anyway. It is therefore hard to guess whether Moundeford's added decoration takes much from the now-lost original, but safe to suppose much of it was at minimum, highly inventive. Moundeford's note is ringed with Tudor roses, themselves set against a green ground, bracketed by pink and golden yellow sections that will form the colour palette for the manuscript as a whole.

The following page (4r) closely matches the way Moundeford has copied formulae in two other Ashmole MSS, nos. 1406 and 1459 [Figures 3.9a and b]. In all three cases he accents his formulae with touches of yellow, and sketches an Rx symbol that resembles a medieval initial, perhaps reflecting the manuscript he was copying from at the Abbey, but also possibly invented

[23] "Nostall Abbey" is more widely known as Nostell Priory, dissolved in 1540, is now a Palladian great house in Yorkshire—see a brief documentary history of the foundation: http://www.british-history.ac.uk/vch/yorks/vol3/pp231-235

from broader knowledge of medieval books in general. In all three cases, Moundeford colours important symbols yellow, as well as select letter descenders and side-loops in his rather loose secretary hand. In all three manuscripts, his symbol for 'Sal Ammonium' is a fuzzy, yellow dotted moth.

The question of whether this is truly *just* a symbol, or an illustration proper, is prompted by the contents bound later in the collation of MS Ash 1423, paradoxically copied *earlier* in date, more precisely, in 1595, as their frontispiece identifies [Figure 3.10]. This frontispiece features a border of acorns drawn in brown ink that looks like oak-gall ink, forming a sort of visual pun. Its text is outlined in a glowing green that persists throughout this section of the manuscript. The Rx's and other symbols become increasingly elaborate, and increasingly green and alive. Snakes, eagles, and faces emerge from the text [Figures 3.11 a/b/c/d]. The moths outgrow the boundaries of their text link, and become green, pink, and googly-eyed. They are now identifiably Elephant Hawk Moths (*Delphinia Elpenor*), which hover at the edges of English gardens at dusk, supping on petunia and honeysuckle [Figures 12a and b, c is actual moth]. Their garden emerges too, with Rx's bearing leaves, and even flowers, and on fol 34r of the third section, the word "Ars" itself bursts into bud on the page [Figure 13]. As on 72v, what are nominally elements of formulae become so large, and so colourful, as to take up major portions of the page—and of course, the viewer's gaze [Figure 14].

These are no longer only alpha-numeric or single character simple symbols—for mercury, tin, and ammonium salts—they are also creatures, full blown illustrations, nested in a green world of Moundeford's increasingly inventive pen-work. If the original manuscript was this highly

illuminated, it would be an unusual outlier in the alchemical corpus as a whole, and in fact for late 16th century copies, as other Ashmole MSS of this type are rarely so lively and colourful. Why did Moundeford see the formulae before him, and the world they acted on, in this particular way, as inflected by growing things he felt the need to either elaborate or add entirely to the page? And why do these parts of sixteenth century alchemical formulae read so emotively, in particular tenderly, to the modern eye?

The word "cute", which I tend to append to the moths in particular due to their large eyes and pigmentation, is, of course, an ahistorical usage. The idea of cuteness in language post-dates this manuscript significantly, and is in fact tied, in Sianne Ngai's productive analysis, to 19th century capitalism, particularly in America.[24] The idea of *green-ness,* however, is particularly period appropriate, and for Leah Knight, who argues that Tudor and Elizabethan reading was fundamentally an act framed in both the colour and the environmental implications of green, a book transforming into a garden is rather unremarkable. [25] Set within the words of Spenser and Drayton, the garden becomes an interior as well as an exterior world, a frame for metaphor and emotion within human space as well as outside it. Knight reminds us that, after all, some of the first printed books after bibles were herbals, which plays into the post-Lapsarian transformational aims of alchemy as well as gardening. Green, as a colour and as a sensation[26] in the garden, reminds us that we were both cast out of God's paradise and can, if we are very

[24] I thank Rebecca Zorach and Aden Kumler both here for each independently directing me to Ngai's truly illuminating work.
[25] Leah Knight, *Reading Green In Early Modern England.* (London: Routledge, 2016).. Introduction and esp. p. 17-25.
[26] *Ibid.* See especially Chapter 4 on "Writing Green" on the similarities between book-reading, book-marking, inscribing, and the emotions of horticulture. Knight also talks about the Orphic implications of Early Modern green-ness thoughout the volume.

skilled, in some ways re-create it on earth. This returns to the paradox of the cute moths as articulated by Ngai—they have a "pathos of powerlessness" that makes us, the reader, as their implicit guardian, empowered with a significant demand, in this case to reconstruct them a new (implicitly alchemical) Eden in which to dwell.[27] This Eden, this new garden from the fruit of the Tree of Knowledge, is implicitly linked to green-ness in Early Modern culture, but also to the formulae for fixing mercury, and in turn making gold from lead, in the formula book containing the moths themselves.

Ngai notes specifically that "… cuteness cutifies the language of the aesthetic response it compels, a verbal mimesis underscoring the judging subject's desire to reduce the distance between herself and the object."[28] The moths simplicity, their googly black-inked eyes and their diagrammatic pink and green brightness, recalls Ngai's description of simplicity, the cute, and the children's toy in post-WW II commodity culture. These moths, however, are a product of an entirely different political sphere. What the Early Modern, specifically the post-Dissolution 17th century experience of a Stuart learned doctor as manuscript copyist, has in common with Ngai's analysis is the reverse-- and implicit—violence in cuteness. Ngai employs an analysis of popular *kawaii* and then the Japanese *avant-garde* to this tendency.[29] Here I suggest, in tandem with the at the time widespread project of the recovery of antiquarian knowledge from dissolved monastic libraries, and as a response to the violent trauma of the Reformation to learned collections, that Moundeford's moths do something similar. The subject, that is the reader of Moundeford's copy, is compelled by the tenderness of the moths to reduced their distance to the object. The

[27] Sianne. Ngai, *Our Aesthetic Categories : Zany, Cute, Interesting* (Cambridge, Massachusetts: Harvard University Press, 2015).P.64.
[28] *Ibid.* P. 87.
[29] *Ibid.* This is the latter half of Chapter One: *The Cuteness of The Avant Garde.*

reader imbibes lost alchemical knowledge, sups on it like nectar even as he (Ashmole owned this notebook and most learned alchemical readers were male), protects the moth as a guardian of its future. He keeps it in his library, rebound in his own clasps. He prints the formulae it lives in. It may not be cute, exactly, but it is tender, like a green shoot after a long, cold frost. The violence behind the cuteness, or at least the sense of green ease, is always there. The English Civil War looms. This sense of violence—being cast out of paradise, the Dissolution, the destruction implicit in Ngai's cuteness-- I will return to at length later.

III.

Plat certainly plays into the narrative of the garden as a generator of solutions to post-Lapsarian problems, large and small, with both his printed book on garden and orchard planning, and his volumes of garden and household varia. During the Little Ice Age, even the humble urban vegetable garden received tender care. As Harkness describes the gentlemen-gardens of Lime Street, aristocratic and mercantile gardens were not simple affairs.[30] Plat's plans for greenhouses employing continuous heating elements were put into practical use, as were his more quotidian suggestions for covering plants from frost.[31]As Borlik notes, one must recall that the coldest winter of the Little Ice Age was in 1617, and even then hard frosts began early in autumn and lasted late into April. The Thames froze over. For the first time, the word "pollution" is used to

[30] See: Deborah E. Harkness, *The Jewel House : Elizabethan London and the Scientific Revolution* (New Haven: Yale University Press, 2007).
[31] See Plat's suggestions for heating as discussed in Cavert, W. (2016). The moral economy of fuel: Coal, poverty, and necessity. In *The Smoke of London: Energy and Environment in the Early Modern City* (Cambridge Studies in Early Modern British History, pp. 101-102). Cambridge: Cambridge University Press

describe the air of London, due to the increased burning of coal.[32] Due to the dual rising demands from ship-building and burning for warmth, the English forests began to be depleted dramatically, resulting in a wood shortage, which Parliament itself addressed in 1580's and which resulted in Elizabeth I commissioning a test farm of English oaks to address the problem.[33]

Green, when the world was white with snow and hoarfrost almost year-round, represented not just hope, but life itself—fuel for the hearth of the home as much as for the alchemical furnace[34]. Plat provides copious instructions for growing hearty crops against the cold (in one of his books, the opening plate shows the size of an ear of barley)[35]. Another index references growing a particularly large head of garlic [Figure 15].[36] In this climate, one could be forgiven for thinking Tallis' "Spem in Alium"[hope in one another] was, in fact, "Spem in Allium" [hope in garlic].

Stuart monarchists literalised this metaphor of planting hope in the pineapple, growing them as tributes to the presumed return of Charles II after the Interregnum. The importation and growth

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[32] Knight. *Reading Green.* Page 48-9.
[33] Todd Andrew. Borlik, *Ecocriticism and Early Modern English Literature : Green Pastures* (New York: Routledge, 2012).p.86. Borlik links the test farm to the projects of Lord Burghley, and in turn Sidney's caricature of Burghley in the *Arcadia.*
[34] This idea draws both on very traditional studies of Milton and the project of re-creating the *locus amoenus*, but also on current eco- and eco-feminist criticism. I was inspired by hearing about the proceedings of the January 2017 MLA panel "Radical Hope and Early Modern Ecologies" to seek out more reading on this evolving topic in Early Modern and (Post?) Anthropocene studies. See specifically the edited volume by Jennifer Munroe et al: Munroe, Jennifer, Edward J. Geisweidt, and Lynne Dickson Bruckner. 2016. *Ecological Approaches to Early Modern English texts: A Field Guide to Reading and Teaching*.
[35] This is again *The Jewell House of Art and Nature, p A1* but the theme is common to Plat's works and those of his contemporaries. Plat also offers advice on keeping citrus in winter. See extensive commentary in: Malcolm Thick, *Sir Hugh Plat : The Search for Useful Knowledge in Early-Modern London* (Totnes: Prospect, 2010).
[36] This is the index to Plat's *The Jewell House of Art and Nature.*

of the pineapple was a minor scientific miracle, and as a result the fruit is comically prominent and outsized in Parkinson's orchard manual frontispiece[37]—normally the Garden of Eden [Figure 16a/b].[38] In Ashmole's Oxford, pineapples are visible carved in stone as royalist symbols up until the Civil War front of South Parade. The "pineapple line" appears to divide the northern, formerly, Parliamentarian parts of Oxford from the south to this day.

In the back of his copy of Parkinson, Ashmole notes the plants he has added to the Tradescants' South Lambeth garden after the two gardeners deaths.[39] Although often separated into different categories of knowledge, Ashmole's alchemical and garden manuscripts are very much of the same vein, and the Tradescant Orchard Book itself features astronomical notation found in alchemical books elsewhere. Botany, in return, is cited in the canonical texts of alchemy, and a "Vegetable Stone" for growing things is an alchemical creation.[40] MS Ashmole 1423 is itself a union of these two types of early modern knowledge—its final pages feature flasks in green glass, themselves a sort of chemical garden [Figure 3.17]. The scenes in the Tradescant orchard book beside the fruits, in a different painterly hand, are similar to the moth drawings. They feature a smiling toad trying to catch a ladybug over several pages. On fol. 127r there is even a now-familiar elephant-hawk moth, along with a comically small and frightened looking owl,

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[37] Parkinson, John, and John Goodrich. 1629. *Paradisi in sole paradisus terrestris. Or A garden of all sorts of pleasant flowers which our English ayre will permitt to be noursed vp: with a kitchen garden of all manner of herbes, rootes, & fruites, for meate or sause vsed with vs, and an orchard of all sorte of fruitbearing trees and shrubbes fit for our land together with the right orderinge planting & preseruing of them and their vses & vertues collected by Iohn Parkinson apothecary of London 1629*. [London]: [printed by Humfrey Lownes and Robert Young ...].
[38] Stephen. Harris, *Planting Paradise : Cultivating the Garden, 1501-1900* (Oxford: Bodleian Library, Univ. of Oxford, 2011).P. 37-39.
[39] This is preserved in the Bodleian's copy, originally belonging to Ashmole: Antiq.c.E.1629.1.
[40] Fredell J., "Alchemical Lydgate," *Studies in Philology* 107, no. 4 (2010): 429–64.. See: P.435-6, note 13, for an early English usage of this conventional naming scheme for the parts of the Stone.

gazing straight out of the page at the reader as if spotted on the sly [Figure 3.18]. Sometimes the narratives feature imagined species of insect, and Juniper and Grootenboer further note their significance in their chapter on the subject in the recent facsimile edition:

> The most fantastic creature appears near the Mallycottone peche (fol. 123) and the whight date (fol. 80), a strange combination of beetle and butterfly that does not correspond to any actual species. The fact that this little insect is drawn from the imagination rather than from nature only reaffirms the great delight the artist must have had in decorating these treasured pages. The talent to animate these images by adding a story told in a purely visual language is most appealing in the white Date, were a fantasy butterfly-beetle appears in conversation with a kind of salamander who is clearly happy to see its odd-looking friend. Whereas still lifes often show little creatures chasing one another, and some botanical drawings hint at interactions between the depicted insects, such contacts have never been so suggestively, and imaginatively, painted as here.[41]

The animal narratives—playful, even joyous—evoke the emotion implicit in the drawings of orchard fruits. A robin happily munches on a caterpillar on fol 47r, looking a bit surprised to have caught it [figure 3.19]. At the bottom of the same page, the ladybug that has been evading the determined, if hapless, toad for three other folios, flutters by. The green shoots of trees, the swelling of apples and pears, are sources of hope too. Humanity may never again see the Hesperides and its golden apples, but with alchemy and botany together, man can have both beautiful apples and a great deal of gold. Even in the literal and figurative winter of the world, all is not lost. Robins come again in the spring, fatten their red breasts, and in August, as the book's annotator tells us is the date, sit on boughs heavy with plums.

[41] B. E. Juniper and Hanneke. Grootenboer, *The Tradescants Orchard : The Mystery of a Seventeenth-Century Painted Fruit Book*, 2013.. P.24.

Yet, where there is hope there can also be sadness, regret, or longing. Moundeford is sitting in a ruined abbey, scavenging lost knowledge. He is contemplating, perhaps sympathetically, the dissolved monastic library, as Ashmole does in the Theatrum's prolegomena[42]:

> Howbeit probably some of these Pieces (now brought to publique Light) had welnigh peris'd in a silent Ruine; and Destruction got a compleate Victory over them, but that my Diligence and Laborious Inquisition rescued them from the Jawes thereof : being almost quite shrouded in the Dust of Antiquity, and involved in the obscurity of forgotten things, with their Leaves halfe Worme-eaten. And a wonder it is, that (like the Creatures in Noahs Arke) they were hitherto so safely preserved from that Univerfall Deluge, Which (at the Dissolution of Abbies) overflowed our greatest Libraries.
>
> And in doing thus, I presume it no Arrogance to challenge the Reputation of performing a Worke, next that of a Mans own: and something more, in that (as if having the Elixir it selfe) I have made Old Age become Young and Lively, by restoring each of the Ancient Writers not only to the Spring of their severall Beauties, but to the Summer of their Strength and Perfection.

This very manuscript is one of the sources of the *Theatrum'*s spring of texts that blooms anew into a summer of lively perfection, even as the Dissolution is not so very far away. Where there are now overgrown flowers and brambles in the physical landscape, there was once an active site of learning and alchemical experimentation. The garden has sealed over the raw wound of demolished wood and stone, but it is still there, inherently lingering in the viewer's gaze. I use 'gaze' here because, in drawing vivid moths and flowering growths in a medievalising style, Moundeford specifically appealed to the viewer's vision as a form of collective memory, both emotional and historical. The Early Modern scribe decorating in the medieval style is a profoundly *imaginative* act, not just the act of a copyist who seeks only the text of the formulae from the manuscripts he sees. The moths, like the books, are creatures "like the Creatures in

[42] TCB. Prologue, unnumbered page 6.v

Noahs Arke" rescued from the "Universall Deluge" of ruin and destruction. Spring and summer, when all is green and new again, when knowledge is recovered instead of lost, when little wings waft on honeysuckled breezes, is hopeful even as it looks back at the physical and metaphorical ruination of winter. This is the duty of the antiquarian, in his illuminations he is a kind of vegetal Noah, shepherding moths as ammonium salts to safety on a book that sails safely on through the seasons of loss and recovery.

For De Laurens, both in Moundeford's translated Latin and Surflet's English edition, it is precisely this kind of imagination, along with memory and even historical memory as an extension of that imagination, that oversteps its bounds is often the cause of problematic melancholy. The heading for Chapter 1 of the work reads "That man is a divine and politicke creature, endowed with three severall noble powers as Imagination, Reason, and Memory."[43] The other side to being endowed with these noble powers, is, however, that they are both changeable and a reflection of the changeable condition of the world in which man dwells, as the chapter opens[44]:

"Abdalas the Sarrasin being importunatelie pressed, and as it were forced to speake and tell, what it was that hee found to bee most wonderfull in all the world: answered at last with great commendation, that man alone did surpasse all other wonder whatsoeuer. An answere in trueth beseeming a great Philosopher, rather then a rude and vnlettered man. For man hauing the image of God engrauen in his soule, and representing in his body the modell of the whole world, can in a moment transforme himselfe into euery thing like a Proteus, or receiue at an instant the stampe of a thousand colours like to the Chamelion…"

[43] Surflet's translation of Du Laurens medical treatises, p.72, printed 1599 at the Swan in St. Paul's Churchyard. ("A discourse of the preseruation of the sight: of melancholike diseases; of rheumes, and of old age. Composed by M. Andreas Laurentius, ordinarie phisition to the King, and publike professor of phisicke in the Vniuersitie of Mompelier. Translated out of French into English, according to the last edition, by Richard Surphlet, practitioner in phisicke"). Available in Merton College, Oxford's library, call: 75.E.2(4).
[44] *Ibid. p.72-3.*

Sometimes those thousand colours are the yellow "cholerick" of anger (the examples in Du Laurens here are Ajax and Orestes) and the black bile of sadness (Bellerephon).[45] The colours of the world itself are stamped out by dreams "... for the melancholicke person dreameth of nothing but dead men, graves, and other such unpleasant things, because he exerciseth his imaginations with forms altogether like unto the humour which beareth sway in him…because that the spirits being growne as it were wilde and altogether blacke, ranging the braine throught and bending themselves to the eye, doe set before the imagination all manner of darker and obscure things."[46]

These wild, deathly black gardens of sadness receive no stamp of the sun's greenery, and are stamped onto the chameleonic mind of man by his own imagination, like inked type pressed into a paper page. The medievalising illustrations of MS Ashmole 1423, however charming or cute, are also in a way a lament, a melancholic meditation on the lost centres of alchemical learning in the north of England before the Dissolution, and in what might be perceived as the height of English alchemical knowledge production. The moths recall the destroyed medieval manuscript Moundeford copied in the ruins of Nostall Abbey. They remind us of a lost world. Even from a Royalist perspective in the new era of print, the tenderness of MS Ashmole 1423's added illustrations bespeaks a certain sensitivity to the abbey culture of the past in which the original manuscript the copyist is using was produced. Gardens and greenery may represent hope for knowledge retained, but they are also the unspoken vines of darkness in the mind, the grey of ruined stone, the cold loneliness of a broken abbey as the sun sets early in the Yorkshire evening in winter. We readers are Protean creatures, and our books can change with our moods. The

[45] P. 93.
[46] P. 95-6.

same bright green and pink moths that flutter across the page can be both hope for secrets retained and a meditation on those lost forever. Imagination is both dangerous and potent because it is changeable, and because when applied to illustrations themselves made with awareness of that changeability, the garden acquires forking paths. Elephant Hawk-Moths seek the nectar of honeysuckle, in the gentle light of gloaming. At night, they also seek flames, and their own death.

The moths of MS Ashmole 1423 are fuzzy green and pink totems against losing hope, in the triumph of imagination of all sorts over historical and circumstantial ephemerality, even as they are themselves ephemeral creatures and also a reminder of the evanescence of life itself. A central question of alchemy is this: how can one become whole in a broken world? How is it possible to live after the Fall, when by necessity everything and everyone is mortal? The Philosopher's Stone promises to extend life literally, but gardens too are central to the alchemists' exploration of these questions. The *Hortus Siccus*, pressed flowers that never die, live on in two of Ashmole's manuscripts, MS Ashmole 1456 and 1502. One page even contains a New World potato leaf, blackened like the foliage of the melancholic mind from the long transatlantic voyage in the hold of a ship, yet preserved entire; miraculously whole by the intervention of man and paste, next to still green and still scented specimens from Ashmole's South London holdings [Figure 3.20].

The garden plays on the razor's edge between tragic ephemerality and delight. On page 21 of the index table for his well-named "Garden of Eden,"[47] Plat lists "Flowers, candied as they grow," as a recipe. In the subsequent text (p.42-44) Plat describes setting the candy sugar on the flower petals a hot summer's day, then inviting your guests to pick their own desert or bringing them in as a bouquet from the lawn, a *fait accompli*. Of course, after dinner, there are no more carefully tended violets in the bed, and the sugar is dissolved in the stomachs of the guests, but for a single moment the candied flower is a perfect, impermanent delight. The imagination is dangerous and melancholic, then, but also, in its ability to bring the living world onto the page, to animate even the smallest of chemical notations into a garden, powerful like a seed. Seeds must be buried to grow, just like the metaphor of the death and resurrection of the Philosopher's Stone, first entombed as a murdered king before it re-emerges as a hermaphroditic child.

Book illustration itself has this power, as Thomas Moundeford knew when he copied the initial manuscript's date, *anno 1437*, and then his own, *anno 1596*, postdated by Ashmole's re-printing of some of the manuscript's content in the *Theatrum Chemicum Brittanicum* of 1621. The *Theatrum*'s hedgerow borders are a testament to both destruction and recovery, and to the extent to which we teeter on the brink. Candied flowers in their instant illustrate the temporally limited condition of man in the theological and scientific language of the garden world. Drawn flowers, trees, moths and grotesques, themselves referencing a past, also presage an inevitable future present. They promise both the pain of the lost garden of Eden and the future pleasure of the

[47] Plat in: *The garden of Eden, or, An accurate description of all flowers and fruits now growing in England [electronic resource] : with particular rules how to advance their nature and growth as well in seeds and herbs, as the secret ordering of trees and plants : in two parts.* The Bodleian copy consulted here, Juel-Jensen F.22, is the fifth edition; "London, : Printed for William Leake, at the Crown in Fleet Street betwixt the two Temple Gates".

new garden of alchemical discovery, rooted in the seed of that loss. Nurtured by hands on collated paper, potted in leather bindings and golden clasps, and watered by ink, they grow; vaster than empires, and more slow.

Chapter 4: Patterning the Void

I.

The *Atalanta Fugiens* is an alchemical emblem book, produced for the newly installed Palatine Elector Frederick V, containing pictures, words, and music. It was printed by Theodore De Bry and engraved by his son-in-law Mattheus Merian, in Oppenheim in 1617/18[1]. The *Atalanta Fugiens* is also emphatically not *just* an alchemical emblem book, which is to say it is so much more, a multi-medial and total engagement with works of art across courts, cities, processions, and garden. It discusses the production of the Philosopher's Stone, but it also touches on Biblical and natural history, plants, Edens, fruits of life and knowledge, bodies and their movements, the weaving of branches, Latin syllables, and threads on a loom. I here argue that the book, taken with Salomon *De Caus'* famous *Hortus Palatinus* designed for the Heidelberg castle and preserved only in its engraved plans (likewise printed by De Bry and Merian)[2], also proposes a mode of reading that transfers itself onto the *liber naturae* of both the garden and the world. It offers a grammar of letters and hedges for a world about to collapse in the Thirty Years War.

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[1] This date is the subject of some dispute or confusion. There are some 1617 editions in holdings around the world, but other collections date their 1618 editions as true firsts. If, indeed, the book was truly printed in 1617, as opposed to a result of the 'optimistic frontispiece' phenomenon, this still gives the print shop time to be the locus of interaction for the various Palatine material discussed in this essay. Salomon de Caus was commissioned in 1614 to design the garden, for which Merian and De Bry printed the plans, and the house handled the official images of the Palatine Wedding Processions of 1612 as well. In future work I shall attempt to clarify exactly how this material circulated between its authors, De Bry as printer, and Merian as house illustrator.

[2] Caus, Salomon de. 1620. *Hortus Palatinus a Friderico Rege Boemiæ Electore Palatino Heidelbergæ extructus, Salamone de Caus Architecto*. de Bry: Francofurti. Here I have used photographs from the University of Glasgow Special Collections copy (Glasgow Sp Coll D.x.5, Euing collection), which is bound together with De Caus' two other books on mechanical force and music.

This intertwined language that at once reads past and present layered together, but that also offers a haunting, Benjaminian sense of baroque futurity and encapsulated knowledge. Set onto plates, in type, in printed labyrinths, and in pitched tones, it is blackened with ink, and pressed into the leaves of the pages that echo the leaves of the orchard trees in the delicate winter glasshouse on a mountain on the Neckar. It exists in the hopes that it will outlast, and perhaps even correct, the distressingly mortal citizens of a belaboured fallen world.

II.

The frontispiece to the *Atalanta Fugiens* is compressed in both space and time (Figure 4.1). It at once references the original Ovidian myth of Atalanta, the classical garden of the Hesperides, as well as the Hesperides on earth of the *Hortus Palatinus* before the sack of 1619 and the onset of the Thirty Years War. Atalanta is herself alchemical Mercury, Hippomenes is the grounding fixative sulfur, and the golden apples are salt, and together in the subsequent fugues they wind their voices together in the holy alchemical trinity or *tria prima*. For each of these, at the top of the frontispiece, is one of three nymphs who live in the Hesperides: Aegle, Arethusa, and Hespertusa (Figure 2), mapping the world of the mythological and Ovidian to that of the Christological and ultimately Rosicrucian language of signs. The frontispiece, like the book it precedes, is the key to a Gesamtkunstwerk that itself spans time and space: that of the Palatinate from the 1613 wedding festivities and travel procession of Frederick V and Princess Elizabeth, to the material, sonic, and bodily trappings of their court at its height (including dance, tapestry, music, and of course De Caus' famous gardens).

For the reader after 1618, examining the book's illustrations and the many more commissioned from the Palatinate and executed by De Bry and his son-in-law Mattheus Merian, the book is at once the culmination of the alchemical-spiritual culture of the time and an innate reminder of its' imminent total destruction. It plays with the nature of reading and with that of language, it delights in its own complexity, but it is also tragic—the vision of a shelled garden smoking and a library carted off to Rome. This is Walter Benjamin's *trauerspiel*, the ability to unfurl worlds within worlds like a game or a song, while at once seeing their complete and utter demise. The *Atalanta Fugiens* is the culmination of a courtly culture that operated within a dense web of signs, signifiers, and signifieds. It is also the final witness to that culture's death, perfect in its readings and re-readings of the layered world that produced it, and at once a reminder of that world's absence. To attempt to read it is the attempt to re-weave a tapestry backward from unraveled threads, to dance from lines that look like hedge mazes in a 17th century book, to sing from notes originally meant to encode crypto-Catholic heresies. To read the *Atalanta Fugiens* completely is to reconstruct, but also to re-live, re-lose, and re-suffer. Its beauty is also its sharp, ingrained trauma—itself reflexive because the theme of trauma and change arise again and again in both text and image.

The upper left-hand and middle-top portion of the *Atalanta* frontispiece take place in a different mythological time than the rest of the border illustration. Hercules—wearing the skin of a lion that mirrors the actual transformation of humans into lions at the bottom of the page—reaches for a golden apple in the Hesperides (Figure 4.3). He has presumably already passed the three nymphs and the many-headed monster that grace the top of the page. The Hesperides, in an Early Modern context (via Herrick and *Paradise Regained,* among many other texts), are the names of

both the nymphs and the garden itself in the myth. These nymphs' names represent the golden light at dawn and evening, with their bodily forms once again serving as a kind of compression of time on the page. There are three of them—like the Graces or the alchemical trinity. That the *garden* Hesperides can also be read as the Palatine gardens at Heidelberg designed by the landscape architect Salomon de Caus is reinforced throughout the *Atalanta*'s illustration, but even its mere name is evocative. The Greek word "Εσπεριδοειδῆ" refers to all citrus plants, and in turn oranges. Despite its many mechanical and technical wonders, the *Hortus Palatinus* was perhaps most famous for its orange trees, not grafted onto lemon or other hardier roots like so many in Europe, but planted whole.[3]

If the mythical Hesperides is at the literal end of the world (the far west near where the ocean encircles it), the *Hortus Palatinus* is at the figurative centre of it, at least in terms of Maier's vision. The two gardens are at once identical and radically different. De Caus' garden for Frederick V is widely considered a hermetic masterpiece, with numerous grottoes including wondrous automata, which like the real Hesperides included statues that came to life (a theme in Campion's marriage masque for the royal couple)[4] and birds made of gold that sang powered by hydraulic pipes. Both the plans for the *Hortus Palatinus* and the *Atalanta Fugiens*, as well as the

[3] I write extensively on this phenomenon and the idea of emblem as graft in my article: "The Bittersweet World: On An Emblem Book of Zincgref and Merian" published digitally as part of a web collaboration pilot programme with the Society for Emblem Studies and Arkyves.org. Summer 2014. Available at: http://arkyves.org/view/SES2014/. This reference to the infamous oranges makes it all the way out of the Early Modern period and into our public consciousness via John McPhee's book of literary and journalistic essays on the fruit.

[4] See Campion, *A Lords' Maske*. 1613. P. 80. The statues are transformed from Inigo Jones' set into live women (actors) at the bidding of the character Jove. The copy consulted here was Bod. Wood 537 (8): "A relation of the late royall entertainment giuen by ... lord Knowles ... to ... queene Anne, in her progresse toward the Bathe ... Aprill, 1613. Whereunto is annexed the description of the lords maske, presented on the mariage night of the count Palatine and the ladie Elizabeth." Printed by I. Budge, London.

related emblem book of Julius Zincgref, were engraved and printed at the print-shop of Theodore De Bry in Oppenheim.[5] The correspondences between the book and the details of the garden are many, and I shall elaborate upon them later in this essay. For now it is enough to say the garden on the frontispiece almost surely evoked the one outside the window for courtly readers during the Palatinate (Figure 4.4 a/b).

The author of the book of emblems, listed on the frontispiece's centre, is Michael Maier, a 17th century polymath that originally served Rudolf II, then spent time abroad in the court of James I and surroundings, and finally returned to Thuringia and the service of the Palatinate. It seems unlikely that he fully composed the music for the fugues, but his talents may be considered polymathic nonetheless.[6] The book is described as being for the eyes and intellect ("… partim oculis & intellectui") as well as for the ears and recreation of the soul ("…partim auribus & recreationi animi). Notably, the emblems are listed as primarily addressing "De Secretis Naturae Chymica". If many aspects of the *Atalanta* as Gesamtkunstwerk are meant to be secret or inferred only by deeply knowledgeable readers, the alchemical element is, at the very start, supposed to be obvious to readers steeped in culture where the macro- and micro-cosmic correspondences of hermeticism also permeated everyday life.[7]

[5] Zincgref, Julius Wilhelm, and Matthaeus Merian. 1619. *Emblematum ethico-politicorum centuria Iulii Guilielmi Zincgrefii*. Frankfurt a.M: Johann Theodor de Bry.
[6] For this brief biographical description of Maier, I use *The Rosicrucian Enlightenment* (Francis Yates), which deeply informs this reading of the *Atalanta* as a whole. I also grateful for the previous work of Donna Bilak on Maier for the musicological discovery that he did not write the fugues himself.
[7] Frances Amelia. Yates, *The Rosicrucian Enlightenment,* (London; Boston: Routledge and Kegan Paul, 1972).. P.124-5. Although Yates' entire book-length study is truly relevant here, here discussion of Maier explicitly starts on p.120.

On the righthand middle margin of the frontispiece (Figure 4.5), Venus hands Hippomenes three golden apples. This refers to the myth in Ovid's *Metamorphoses*, Book X.560-707. Atalanta is a nymph with many suitors. The man that will marry her has to beat her in a foot race. So far, all the previous suitors have failed and have been punished with death as a consequence. Hippomenes invokes his godly lineage and gets a favour from Venus. As he throws each of the apples during his race with the nymph, Atalanta, transfixed by them, stoops to pick them up, each time slowing herself down. Hippomenes wins the race, and in turn, the girl (Figure 4.6).

The ending of the myth though, is much more tragic. Overcome by sudden lust for one another after the race, Atalanta and Hippomenes stop at a temple of Cybele (again, Figure 4.6). They have sex, inflaming the rage of the goddess for desecrating her holy space. Thinking death too kind a punishment, she turns the lovers into lions, forever doomed to pull her chariot.

In Rome, Cybele's temple is on the Palatine hill. The lions are thus symbols of the Palatinate on the frontispiece, but they are also so much more. The bottom portion of the frontispiece, containing the story of the footrace and its consequences in one continuous illustration, is separated from the rest of the frontispiece illustration by a fence woven from branches. In between the woven portions of the fence, in the interstitial spaces, trees grow. This kind of fence made from tree-coppings is a practical device, and could be seen across Early Modern Europe in actual orchards. Its interweaving, though, is also like the back and forth of the shuttle through the weft threads of low-warp tapestries, like the verdure ones from the workshop of Spiering[8]

[8] Hanns Hubach, "Tales from the Tapestry Collection of Elector Palatine Frederick V and Elizabeth Stuart, the Winter King and Queen.," *Tapestry in the Baroque / The Metropolitan*

hanging throughout Frederick V's palace at Heidelberg. It is one foot darting from the side, in front of the other, in Feuillet dance notation, in masques at the court. It is like the detail of the engraving lines of Hippomenes' and Atalanta's long shadows, just below, cross-hatched and dark against the markings of the terrain.

Hippomenes wins the race, copulates with Atalanta, and the pair are turned into lions, all within a single gaze. Moments of time are compressed, grafted on to the other portions of the frontispiece which themselves have their own timescales. According to Julius Zincgref, who writes the other emblem book of the Winter King's short reign, the word emblem originates from the Greek verb "εμβάλλω"—to throw or put in. This runs in parallel to the differing analysis of Hessel Miedema of Alciati's language about emblems, which uses the root *emblema* from Greek to Latin and has to do with insertion or graft. The context of Early Modern printing during this period causes one to lean toward the inlay and ornamentation sense of *emblem/emblema.* The emblem is an image plate set onto a printed page, inlaid into it. It is also notable however, as Miedema points out, that the use of *emblema* as graft in Alciati also refers to the graft of fruit trees.[9] The emblem is a graft of one Hesperidean citrus fruit onto the roots of another tree, of multiple ideas of involving music, text, and image onto the same medium of the page. It is a fusion of three or more ways of describing the world into one.

Museum of Art, New York ... Ed. by Thomas P. Campbell and Elizabeth A.H. Cleland., 2010, 104–33.. I will return to this in detail later.

[9] This is one again my own language from "The Bittersweet World". See also Hessel Miedema, "The Term Emblema in Alciati," *Journal of the Warburg and Courtauld Institutes* 31 (January 1, 1968): 234–50. See esp. pages 239-240.

The frontispiece, with its different times and places interwoven together both visually (though the continuing motif of the trees and shrubs in the background), and in the mind of the reader who knows the source texts, reminds us that this book of emblems, as much as it is about alchemy, is also about gardens, about the way their terraces intertwine like dancers in *broderie*.[10] The *Atalanta* emblem book itself is a graft onto the tree of the *Hortus Palatinus*. The garden is the language of God – nature—as written by man, as a kind of artifice attempting to better nature at her own game. The *Atalanta* grows using the garden's roots; some mechanical and metallic with pulleys and gears, some natural and made of boxwood or pear. The book is a Gesamtkunstwerk because it cannot signify fully without the songs, the dances, the wall hangings, and the paths down the mountain through fountains and grottos. It is a book of little engraved worlds that simultaneously functions as a modality of reading for the physical world of the Palatinate; as language inscribed into the soil, loom, body, and floor. The space of the *Atalanta* emblem, as well as the book's frontispiece, is the imagined and the real crossing each other in an infinite and self-referencing Mandelbrot brocade—self-generated, self-contained, and yet never absolutely finite or bounded. Like a fractal, the *Atalanta* is both infinitely simple in its generation, and infinitely complex to its potential readership. Therein lies its danger, and its elegance.

The frontispiece turns the lovers into lions even as Hippomenes savours the moment he thinks he outwits the gods. It is cruel. To the reader, it is a warning. To master the game of the book, the *spiel* of signs, is also to risk *trauer* of understanding them. Understanding fully the language of

[10] Broderie has been explicitly linked to dance in scholarship. I shall again return to this theme at length later. Yates explicitly links emblems to garden in this intellectual movement more generally using a quote from Solcius equating the two. *Rosicrucian Enlightenment.* P.123.

the micro- and macro-cosm could render man forever rich and long-lived; this is the essential premise of alchemy as a learned discipline. It also drove many men to bankruptcy, mercury poisoning, and madness in front of the furnace. He who dares does not always win. After all, it is dangerous stealing letters from the presses of the gods and then trying to write with them—in hedges, with jetés, or with images and words, mercury and salt. De Bry, in a century of many universalisms, uses the frontispiece of the *Atalanta* to both tantalise the enchanted and warn off the weak. To read a Gesamtkunstwerk is to play with the fire at the heart of the human experience, to see at once the entire interconnected structure of the world with man at its centre. One must be an adept to see, with just two eyes, the same divinely ordered structure angels glimpse with the whole vast array of them on their wings. After all, the tower of Babel was struck down, the *Hortus* itself leveled, and with these acts of singular destruction emerges the lingering feeling that perhaps there are things the reader, the alchemist, or the philosopher, is never meant to have the signs to express or understand. To recover the Fruit of Life given that of knowledge is not a pursuit without risk. To flip the page of the *Atalanta* and to read the first epigram is to try anyway.

III.

The first emblem of the *Atalanta Fugiens* (Figure 4.7 a/b) directly echoes its frontispiece in the shading and shape of its foreground foliage, providing a link between the spaces of text and paratext and between the physical plate of the frontispiece border and the emblem plate. The wind god Boreas stands in the foreground, with the wind itself emanating from his hands and head. The window is parallel engraved lines, impeccably cleaved with a burin, and shows total

disregard for the perspectival design of the rest of the plate. Merian is intentionally playing with materiality here. This image of Boreas is self-consciously a printed image, reminding viewers of its own method of making, even as its poetic epigram references making in the alchemical sense as the conception of the Philosopher's Stone:

> Embryo ventosa BOREAE qui clauditur alvo
> Vivus in hanc lucem si semel ortus erit;
> Unus is Heroum cunctos superare labores
> Arte, manu, forti corpore, mente, potest.
> Ne tibi sit Coeso, nec abortus inutilis ille,
> Non Agrippa, bono sydere sed genitus.
>
> If BOREAS can in his own Wind conceive
> An offspring that can bear this light & live;
> In art, Strength, Body, Mind He shall excell
> All wonders men of Ancient Heroes tell.
> Think him no Caeso nor Abortive brood,
> Nor yet Agrippa, for his Star is good. [11]

"Caeso" is of course, "ripped untimely from his mother's womb" in the now eponymous Caesarean section (actually an historical fiction in origin). "Agrippa" is here Maier's alchemical predecessor, who wrote many treatises controversial in his time and was widely known for ultimately condemning speculative philosophy and theology in his *De incertitudine et vanitate scientiarum* [On The Uncertainty and Vanity of the Sciences]. Maier considers himill-fated, since he died imprisoned by religious authorities and his scholarly works ultimately turned against what Maier would have characterised as wisdom itself. "Nec abortus" or "not abortive" here links the figurative birth of knowledge in the *Atalanta* to a kind of philosophical fecundity, to which the caesarean and Agrippa are failed opposites. The theme of pregnancy, even in male

[11] This is from BL MS Sloane 3645, a period English translation that preserves some of the feel, if not the precise and mathematical metrical structure, of the Latin poem.

figures as can be observed from the tiny foetus nestled transparently behind Boreas' muscled and decidedly masculine stomach, is a common one in alchemical treatises of the time. As I have observed in the Ripley Scrolls (with the death and rebirth of the Stone as a hermaphroditic child), and in the sequences of MS Ferguson 6 (with Sophia embodied both as a pregnant angel and a lactating woman with scholars at her breasts).[12] The subsequent emblem of a pregnant earth nursing the Stone-child at her rotund breast also plays into this theme.

The ruins in the background of emblems 1 and 2 (figure 4.8 a/b) are also, in their way, fecund. They are sites ripe with the overlay of classical antiquity and the benefits of antiquarianism on the one hand, and the idea of decay and historicity on the other. The ruin in baroque prints is often treated in some variation of this manner. As Chrsitopher Heuer observes of the ruin as a device: "In so many of these cases, ruins, even as emblems of the perishable, continued to mean, even as broken architecture, they could be read, recovered, or deplored."[13] The minor key of the fugue that accompanies this emblem that repeats the epigram's words about alchemical and bodily fertility even as it is generically mournful in tone reinforces this impression. The use of classical architectonic tropes also strongly recalls the grottoes of the *Hortus Palatinus* as a whole, in that they employ classical figures as both automata and sculpture (figure). The wind god in particular (Boreas) evokes the mechanisms by which De Caus made the figures "sing"—through forced air, evoked by the bellows on the frontispiece of his mechanical treatise (*De Forces Mouvantes*) and by his diagram of the vocal mechanism of a bird automaton later in the

[12] In her reading of the book as a magic square, an ingenious and certainly viable approach, Donna Bilak merges the first and second emblem as a hermaphroditic figure in and of itself. Bilak's work on this topic is forthcoming.
[13] Christopher P. Heuer, "Hieronymus Cock's Aesthetic of Collapse.," *Oxford Art Journal.*, 2009, 387–408. P. 387.

book (figures 4.9 and 4.10). Like De Caus' garden, the *Atalanta* renders Boreas not a ruin, but once again vital and whole, so much so that the force of the wind takes over the scenery of the plate, which simultaneously retains the ruin in the background to accentuate the sense of possible loss and historical passage of time, just as the many artificial ruins in period garden designed served to do[14]. At the time of the book's printing, De Caus' brass birds and satyrs still sang, imitating the Pythagorean ideal scales.[15]

Then again, the book seems to anticipate at least the possibility of the Palatinate's own eventually destruction, if not the sudden onset of it. It simultaneously invokes the greatness of classical civilisation (the body of Boreas himself) while evoking its fall (the ruin in the background), and the continued ability of the world to move on and produce new fruits of knowledge, in the form of both the Philosophical embryo and the flourishing wild foliage in the foreground of the image. In the now poignantly prophetic wedding procession of Frederick V and Elizabeth Stuart to the new palace and gardens, the same engraver (Merian working for his father-in-law, De Bry's, firm)[16] has Orpheus not in pieces torn apart by hounds at Thebes after

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[15] De Caus explicitly states his commitment to these scales in: 1615. *Institution harmonique, divisée en deux parties; en la premiere sont monstrées les proportions des interualles harmoniques, et en la deuxiesme les compositions dicelles*. Francfort: En la boutique de J. Norton.

[16] The De Bry/Merian illustration plates are sewn into the front of Smith newsb. e.28, the Bodlein copy of: Bry, Johann Theodor de, and Georg Keller. 1613. *Beschreibung der Reiss: Empfahung dess ritterlichen Ordens: Vollbringung des Heyraths: und glucklicher Heimfuhrung: wie auch der ansehnlichen Einfuhrung: gehaltener Ritterspiel und Frewdenfests: des... Herrn Friederichen dess Funften, Pfalzgraven bey Rhein, dess heiligen romischen Reichs Ertztruchsessen und Churfursten, Hertzogen in Bayern, &c.: Mit der ... Princessin, Elisabethen, dess grossmechtigsten Herrn, Herrn Iacobi dess Ersten Konigs in Grossbritannien enigen Tochter. : Mit Schonen Kupfferstucken gezieret*.

failing to rescue Eurydice from the underworld, but marching resplendently on a unicorn behind a float with three sirens (figure 4.11). Neither Orpheus nor his mount are strictly possible things within the known world and yet they—and the animate statues of the *Hortus Palatinus,* along with Boreas' fertile and contradictory male womb—

persist. What was figuratively Orphic in the Ripley Scrolls is literally Orphic in the Palatine wedding prints and the *Atalanta Fugiens*. Men may die, whole worlds may collapse, but art has the power to rise from the dead, even when it is in ruin.

The trope of the ruin in the *Atalanta* emblems re-occurs frequently, including in Emblem XIV (figure 4.12 a/b), where it is the background landscape to a foreground of an ouroboros (a serpent biting its own tail). The ouroboros is described in the explanation of epigram 14 as a chemical and infinite unity that guards the trans-historical Hesperides of ultimate knowledge (again transcribing the English from BL Sloane MS 3645, the Latin is in the footnote)[17]:

> For at the fountains or Rivulets which fall from the mountains the Dragons meet, and so by Accident are said to keep watch over the gold enclosed in them. For this reason do the Philosophers assign so many Dragons to their Treasury, as to the Golden Fleece, the Garden of the Hesperides, and the others persons or chymicall subjects such as Cadmus, Saturn, Æsculapius and Mercury, whose Caduceum is bound with two serpents, a male and female. For they mean nothing else by Dragons but Chymicall subjects. Hence they say, *Dant Rebis montes dracones terraque fontes*: Dragons to Rebis do give mountains, And the earth does give him Fountains. And they denote his extreme hunger by his devouring his Tayle, which though some may interpret this as the year returning into

[17] p.66—Ad fontes enim seu rivos, qui ex montibus decidunt, conveniunt dracones & sic per accidens, apud aurum exubias agere dicuntur. Hinc a Philosophis tot dracones aut serpentes suis thesaurus ascribuntur, ut Velleri aureo, Horto Hesperidum, aliisque personis seu subjectis chymicis, Cadmo, Saturno, Aesculapio, Mercurio, cujus caduceum Gemini serpents cingunt, mas & femina: Per Dracones vero illi nihil aliud intelligent quam subjecta chymica. Hinc dicunt, Dant Rebis montes dracones terraque fontes, Et quod Dracon caudam suam devoret, famam ejus maximum denotates Quod licet alii exponant de anno in se redeunte…. Hoc est, inquit, sulphur….

> itself and resembling a Circle, yet it was first applied to their work by the Philosophers, who by this Dragon would have such a Serpent understood as devours another of its own kind, and which is properly called Sulphur, as all of them Attest in innumerable places.

The dragon or ouroboros is also described as a river:

> Other animalls move upon their Feet, but Serpents, Dragons and such like Vermine use the constriction and explication of their bodyes instead of feet, and like flowing water incline themselves sometimes this way, sometimes that, as may be seen in most Rivers which run obliquely in Circuits and turn their courses like Serpents.

Like the fountains of matter above and the fountains in De Caus' grottoes, this quote and its image explicitly reference the Palatine Marriage as the unity of the Thames and the Rhine. De Caus has a "Father Rhine" statue at the entrance to the Heidelberg *Hortus* (Figure 4.13), which is one of the few features that survives until the present. There is also a reference to this theme in the orangerie of the *Hortus*, that Patterson draws out in his reading of it[18]:

> "De Caus has also called attention in his text to the fact that he has wrapped ivy around the columns. Primarily referring to love and marriage, the symbol of tree and vine hardly changed during the period between its invention by Catullus (87-58 B.C.) and Heinrich von Kleist (1777-1811).48 The use of this theme in the stone orangery raises the obvious possibility of a reference to the marriage of Frederick and Elizabeth. The importance of their union, of course, cannot be over-emphasized, for it raised great hopes for the future of a united Protestant body that might triumph over the dissention among states which led up to the Thirty Years War. Often expressed through the imagery of the union of the Rhine and the Thames, such hopes were, for example, made explicit in the masque given in celebration of Frederick and Elizabeth's marriage, in 1612, in the form of a prophecy that a 'great race of Kings and Emperors would spring from this union of the strength of Germany with that of Great Britain, and of the joining of people in one religious cult and in simple love'. "

[18] Richard Patterson, "The Hortus Palatinus at Heidelberg and the Reformation of the World. Part I: The Iconography of the Garden," *The Journal of Garden History The Journal of Garden History* 1, no. 1 (1981): 67–104. P.91-2. Patterson of course cites the same printed edition of the gardens grottoes that remains our only access to the idea of what they looked like in the period before their total destruction.

The endurance of the ivy plant through winter becomes the theme for a Baconian analogy (here Patterson cites the *Novum Oragnon*) to the persistence of human knowledge, but also its connection to passion and Bacchic mystery. Rivers, ever flowing through the midst of human war and destruction, continue this theme of the persistence of beauty and nature. The ouroboros' globular eye stares directly into the reader's (figure 4.X). Its dappled body resembles the skin of the Hesperidean orange.[19] It is circular because it contains and retains all things, the Benjaminian magic circle of the collector, whose objects, especially books and archives, retain the fate of the interpretation of history long after its actual persons have crumbled to dust in their graves. Merian, this image's engraver, knew like everyone else in the Palatinate court circles that should Frederick V discharge what he saw as his duty to his Protestant faith and take up the crown of Bohemia, that war likely followed.[20] The printing house of Merian and De Bry had already uprooted and moved several times due to religious conflict. The outcome of their lives was uncertain. The golden perfection of alchemical knowledge, however, was a constant, flowing river in an inconstant, imperfect world. The *Atalanta Fugiens* was printed at a monetary loss, as a profound act of hope. No matter what happened to the Palatinate, or to humanity, Merian and Maier seemed to think, like Benjamin, that the archive would survive to memorialise the values of their brief, shining pinnacle of linked scientific, esoteric, and literary society. It survives for the reader to recover. This is why the serpent looks, piercingly, longingly, demandingly-- at us.

[19] This reference endures in the other emblem book produced for this period of the Palatinate, Zincgref's *Emblematicum Polticum…*, to which I allude at length earlier. This book's emblem frames are also stippled like fruits.
[20] Yates. *Rosicrucian Englightenment.* Chapter 2, "The Bohemnian Tragedy", covers the political and spiritual context of this decision in detail.

Benjamin's writing on this period of the German baroque, is highly evocative here. The last line of the epigram to Emblem 14, "Sevoret & removat, senecet & pariat" ["Consumes itself and vomits, dies and is born"] refers to both the 'rebirth' of the Philosopher's Stone from the stage of putrefaction in the process of production, but also to the ruin as pictorial language, and the way in which the emblem book itself engages with this tradition. Emblems as hieroglyphs, or the language of emblems as rebuses or ideograms had existed since Alciati—a concept I shall return to in a moment.[21] On the ruin itself, and on decay and persistence, in his discussion of allegory, Benjamin says this[22]:

> … and in this guise history does not assume the form of the process of eternal life so much as that of irresistible decay. Allegory thereby declares itself to be beyond beauty. Allegories are, in the realm of thoughts, what ruins are in the realm of things. This explains the baroque cult of the ruin…. [and here Benjamin is quoting Borinski] ' The broken pediment, the crumbling columns are supposed to bear witness to the fact that the sacred edifice has withstood even the most elemental forces of destruction, lightning, and earthquake. In its artificiality, however, such a ruin appears as the last heritage of an antiquity which in the modern world is to be seen in its material form, as a picturesque field of ruins.'

And indeed, in the background of Emblem XIV, the round temple of Cybele, the same architectural form portrayed intact on the frontispiece in the eternal, timeless Hesperides, does crumble into the picturesque. Such classical architecture appears intact, and sometimes also in ruins, in other emblems in the book, showing that not all of them are set in modernity, and that the persistence of allegory to which Benjamin occurs survives even within the book's own constructed timeline of the world. The sequence of the emblems in this imagined time is not

[21] John Manning describes this history in his book *The Emblem* in the chapter "Talking With The Dead: . John Manning, *The Emblem* (London: Reaktion, 2004).This also plays into the notion of the emblem as *res significans* that Benjamin also raises in his discussion of the *Trauerspiel*.
[22] P. 178 in the most commonly used English translation of Benjamin's *Trauerspiel* book: Walter Benjamin, *The Origin of German Tragic Drama*, 2009.

linear, (Emblem XIII shows an intact medieval coastline city) as Early Modern Palatinate's relationship to the past (and its physical survivals) is not a simple one-to-one mapping. The emblems all stack on top of each other when the book is closed. They are in every space and time at once, and none of them. Each individual emblem, bounded by its own plate, is also bounded by its unique relationship to space and time—and in the use of the ruin, space and its decay *as an allegorical expression of time*.

The use of classical antiquity to simultaneously reference the Palatinate present and its futurity is doubled here by the tapestresies that would have hung behind the readers, singers, and masquers of the *Atalanta*. One of the most notable set of tapestries in the palace at Heidelberg was the series brokered through Palatine librarian Jan Gruter, that of Decius Mus, for which Rubens did the initial cartoons.[23] Decius Mus, an obscure Roman consul, was not a typical tapestry subject, as Hubach notes:

> The agreement for the weaving of the *Decius Mus* series was drawn up in Antwerp in November 1616 by Frans Sweerts and Jan Raes II on the one hand, and Franco Cattaneo, a merchant from Genoa, on the other. The contract covered the making of two sets of tapestries representing the "History of the Roman Consul Decius Mus," who voluntarily laid down his life for the sake of his troops and his home country." The theme, borrowed from the Roman historian Livy and interpreted by Rubens as an exemplary act of patriotism, was not a common one in art.

This suggestion of this tapestry purchase to Frederick V in the summer of 1618, just when he was considering whether to go to war over the issue of becoming King of Bohemia and thus forcing the German states into Protestantism, was likely no accident on the part of the learned

[23] Hubach in Campbell, Thomas P. ; Cleland, Elizabeth A. H. (Hrsgg.): Tapestry in the Baroque : new aspects of production and patronage [Kongressband], New York 2010, S. 104-133. P.114. Frederick V was a keen tapestry collector and his commissions and acquisitions are well documented and described in this essay.

Gruter, who had just issued a commentary on Livy himself and who was Frederick's connection to Sweerts, the middleman and tapestry dealer.

Rubens' designs for the Roman armour are particularly striking—and intentionally historically inaccurate (Figure 4.14).[24] It is likely he was using the armour, just as Merian and Maier use ruins and other classical *topoi*, as an allegorical signifier. The *Atalanta* also uses pseudo-classical armour resembling that of Rubens in Emblem XLIX, where the three "fathers" of the Stone are likened to Phoebus, Vulcan, and Hermes, each of whom was a father of Orion via impregnating an ox hide (Figure 4.15 a/b). In "The Death of Decius Mus," now in the princely collections of Lichtenstein (Figure 4.16), Decius is speared through the neck with a lance, and is in process of expiring as he falls off his magnificent horse, eye gazing skyward as if anticipating the glory of his own sacrifice. He in fact looks like the young Elector himself (Figure 4.17) as portrayed at the time of his marriage.

Emblem L of the *Atalanta* shows a king in the mode of Decius, and of the figures from Emblem XLIX, arising anew from his own grave, just as the Philosopher's Stone is generation from putrefaction (Figure 4.18a/b). He kisses the lips of the snake-dragon that wraps around his body, evoking the *ouroboros* of the earlier page. In the background he is flanked by two Roman ruins, with two obelisks rising in the distance centre of the landscape. This suggests that even as Decius Mus dies in sequence on the wall behind the book's reader, he lives again through the production of sacred knowledge gleaned from antiquity. The ruins of antiquity are the building pieces for the art of the Early Modern, and in this form, they are given new life. They kiss the snake of the Tree

[24] Howard David. Rodee and Howard D. Rodee, "Rubens' Treatment of Antique Armor," *Art Bulletin / Ed. John Shapley [u.a.]*., 1967, 223–30. P. 227.

of Knowledge and rise from their princely graves, refreshed, like Rubens' nouveau antique armour or the perfectly constructed, and entirely whole classical scenes of De Caus. Everything new is old, but everything old is new again. The language of architecture borrows from the dead past to animate the paradisiac gardens of the present. The tapestry takes the fallen corpse of Decius Mus, long since turned to dust, animates the political ambitions of Frederick V in Bohemia by giving them moral precedent. Dressed up (sometimes literally, as in the Palatine wedding procession) in classical garb, the present uses the classical past as a model even as the actors of the present know their structures, images, and gardens will be the ruins—and allegorical language—of a distant future. Again, while civilisations can fall and the bodies of the Thirty Years War will soon rot in the fields of central and northern Europe, something fundamental survives to speak for the dead. The process of making art (and especially self-referential art that encodes its own value as such) is an exercise for hope of eternity, even if it is a grim one.

IV.

The physical processes of making each art of the Gesamtkunstwerk are, in a sense, meant to be similar. Fugues weave in and out of voices, each part following the other and preserving the musical counterpoint that is the signature of the baroque form. Jan Raes II, like other Brussels tapestry makers of his time, used a low-warp method of weaving.[25] This entails drawing the tapestry cartoon backwards onto the warp strings, with a paper background sometimes retained for colour codes, and weaving individual wefts in and out in a laborious process. The sheds,

[25] Campbell, Thomas P. 2006. Tapestry in the Renaissance: Art and Magnificence. New York: Metropolitan Museum of Art. Description of low warp tapestry method starts on p.5.

controlled by pedals, are the levels of warp used to separate layers of colour and pattern in the weft, which is drawn through the strings by hand (Figure 4.19).[26] Cambell estimates the production moves at about half a square meter for month for high quality tapestries like those that hung in the Palatinate. The in-and-out of the weft thread towards the warp produces a three dimensional product from the two dimensional space of the original cartoon, which is then displayed again as a two-dimensional hanging with one face visible.

This process of translating between types of spaces and materials parallels both the foot movements and pattern books of baroque dance to which I shall proceed shortly, and that of the garden practices of espaliering and more broadly, "broderie," both as depicted in the Merian engravings of the *Hortus Palatinus* and in the *Atalanta*. While *broderie* initially refers to patterns in textile design, it is appropriated across Europe as a term for garden parterres of a particular type—in this way two-to-three dimensional pattern translation is similar across the media. In his overview of this phenomenon in the literature, Jacques notes that[27]:

> Meanwhile Hyll [a Tudor figure Jacques is here using as an example] must have heard that knots could be set out in interlaced designs, for he included one, totally impractical, embroidery pattern in The *Proffitable Arte of Gardening* (1568). *The Gardeners Labyrinth* of I577 included twelve interlacing knot designs probably inspired by some French …. As the design of interlacing knots developed a number of embellishments were introduced. Among these were 'trayles', the tendrils of some trailing plant. Devices of this nature were used in silversmithing, in embroidery and on architectural friezes, and then Androuet du Cerceau imagined them in garden design in the 1560s. Many of his drawings of gardens in the I570s showed the development of this idea which burgeoned into the French broderie designs of the seventeenth century….

[26] *Ibid*. p.5-7.
[27] D. Jacques, "The Compartiment System in Tudor England," *GARDEN HISTORY* 27, no. 1 (1999): 32–53.P. 48-50

Jacques then cites a plate of Parkinson's *Paradisus Terrestris*, of a garden labyrinth that is typical of period broderie (reproduced as Figure 4.20). This type of *broderie*-as-labyrinth is just like those depicted in the individual parterre maps of De Caus' *Hortus Palatinus* (Figures 4.21a and b) and Emblem XXVII (Figure 4.22 a/b) of the *Atalanta Fugiens*. The epigram to this emblem reads "Qui Rosarium intrare conatur Philsophicum absque clave, assinilatur homini ambulare volenti absq; pedibus:" ("He who tries to entre the Philosophic Rose-garden without a key is a like a man wanting to walk without feet"), and indeed a footless man stands stymied next to a close gateway. The architecture of the gateway is strikingly similar, and indeed almost identical to those on De Caus' actual parterres (Figure 4.23). The labyrinth itself is visible just beyond the gate, both tantalisingly close and impossibly far.

This representation of alchemical truth as hidden in a labyrinth or *broderie* is in keeping with metaphorical trends for the period. Bacon describes truth as a '*filum labyrinthi*' and in his introduction to *The Hill and the Labyrinth*, Steadnan extends this conception of truth as landscape, particularly a harsh or puzzling terrain, to explore early modern sources as varied as Milton, Donne, Locke, and Cowley. [28] Sometimes to seek truth one must wander into the *selva oscura,* the dark forest of error that stands in Dante's way, and encroaches on the left of the labyrinth emblem plate. The truth is also a difficult and rocky path to Hercules[29] in *Paradise Regained,* where Hercules forms a kind of prefigured classical Christ, and where the fortress on

[28] John M. Steadman, *The Hill and the Labyrinth : Discourse and Certitude in Milton and His near-Contemporaries* (Berkeley; London: University of California Press, 1984).Introduction.P. 1-16

[29] As Francis Yates notes, Hercules is also a statue in one of De Caus' grottoes: *Rosicrucian Enlightenment* p.19.

the Palatine Hill in Rome sounds very much like the truth hidden in the pattern of the Palatinate's gardens (albeit the description is given to Christ by Satan):

> On the Tarpeian rock, her Cittadel
> Impregnable, and there Mount Palatine
> The Imperial Palace, compass huge, and high
> The Structure, skill of noblest Architects,
> With gilded battlements, conspicuous far,
> Turrets and Terrases, and glittering Spires.
> Many a fair Edifice besides, more like
> Houses of Gods (so well I have dispos'd
> My Aerie Microscope) thou may'st behold
> Outside and inside both, pillars and roofs
> Carv'd work, the hand of fam'd Artificers.[30]

We, the emblem's readers or the readers of the book edition of the plans for the *Hortus*, see from our "aerie microscope" what that man at the actual parterre gate standing amongst the *broderie* cannot: the garden and its representations form a language. This language, like the architecture of Milton's Rome, or indeed the print itself is "Carv'd work, the hand of fam'd Artificers." It is a constructed, unnatural language from natural parts, that is plants, or in the case of the book image of the garden, engraved metal and ink, already one degree removed from the 'text' or rebuses De Caus inscribed onto the 'page' of the ground. To read it, as to read the labyrinth is a *labor intus*[31] -- an inward work—that of the soul, which strives for the key to the Philosopher's Rosary.

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[30] *Paradise Regained*. Book 4. I am indebted to William Poole for his explanation here of Milton's perception of the microscope in part relying on his lack of understanding of the instrument due to his blindness, and in part due to his vast imaginative endowment of the lens with properties beyond its actual capabilities.
[31] Steadman. P. 12.

A constructed and, perhaps universal, language as an approach to truth was a known Early Modern approach that persisted well before, and well after, the fall of the Palatinate. To some degree this was a scholarly project, to recover the Adamic language from before the Tower of Babel. It was also a project that reacted strongly to the existence of New World languages and resolving the incompatibility of Chinese with Biblical timelines of history[32]. Ultimately this question intrigued the Royal Academy and its members, including Hooke and Browne, as well as Wilkins, who would go on to write his *"Essay Toward A Real Character And a Philosophical Language"* and summarises the problem thusly '"The first Language was *con-created* with our first Parents, as they immediately understood the voice of God speaking to them in the Garden. And how Languages came to be *multiplied*, is likewise manifested in the Story of the *Confusion of Babel*."[33] Others, including many radical Protestants, wanted to create a *new* artificial language that would solve the problem of scattered tongues created by Babel, and thus re-create Paradise on Earth. To paraphrase Rhodri Lewis' introduction to his own book on the topic, this problem not only gripped the Royal Society, but also large numbers of theological and other thinkers across England and the Continent (including Bacon, Comenius, and the Hartlib Circle), during the period that nonetheless predated the idea of linguistics itself as a discipline. [34]

It seems that Maier's *Atlanta* and De Caus' *Hortus* designs responded in both to the diffusion of human language at Babel and to the idea of a new Adamic artificial language, though it is likely

[32] William Poole, *The World Makers : Scientists of the Restoration and the Search for the Origins of the Earth*, 2017. P. 73-85. As above, I am again indebted for productive discussion and references on Early Modern artificial and universal language projects.
[33] Wilkins CHAP. I. I. The Introduction. II. The Original of Languages. III. The first Mother-tongues. IV. Their several Off-springs. Copy consulted here is Bod. 81.H.14.
[34] Rhodri Lewis, *Language, Mind and Nature : Artifical Languages in England from Bacon to Locke* (Cambridge: Cambridge University Press, 2012).Introduction including P. 1-22.

neither would have been well received by the language designers and the Royal Society itself.[35] The suspicion of images, originating with Pliny and subsequently permeating Early Modern textual authority at the time is even echoed in the *Atalanta* itself, in Emblem XXXIX (figure 4.24 a/b). This strange image refers to the riddle of the sphinx, with its epigram retelling the classic solution of Oedipus, that is, the three ages of man—each represented as a figure in the foreground with a Platonic geometric shape inscribed on its forehead. Yet, other men wearing period clothing of Maier's time, including the alchemical king figure, continue to fight and negotiate with mermaid-like sphinxes in the plate's background. This concern for allegory as mode of transmission of alchemical knowledge reflects the concern leveled in the *discursus* to the emblem:

> For Sphinx is a kind of monster, propoſing the most obscure Riddles to the Thebans, and not only to them, but as ſhe had done before to the Egyptians. So afterwards to others that aspire to Art, she lies watching in the Philosophical books, as she did before the gates of Thebes: If anyone pass by the monſter, he suffers no harm by it, but if through the presumption of his Wit and Courage he endeavour to resolve its riddles, and cannot perform it, he acquires his own destruction which is grief to his heart, and damage to his affairs by his error in this work.
>
> He that refers the Allegories to true History is utterly mistaken, for they will seem to be childiſh and Foolish tales if they be taken literally, but otherwise they are signs and Tokens of profound learning. (There are said to be in Africa certain wild beasts that have the name of Sphinx, but our discourse is not concerning them, though the enigmatical denomination of this fiction ſeems to be derived from them.)

The image as allegory, and in turn a form of language, is like a sphinx: it has the possibility to reveal something profound, yet it also has the ability to dangerously maul and disfigure one's

[35] The Oxford group and members of the Royal Society, with the exclusion of Webster likely associated the Rosicrucian attempts at hieroglyphics and universal language more with cryptography, which while connected to the problem of language and 'true character', for many missed the point entirely. See Lewis p. 122-28.

transmitted wisdom. The many sphinxes in the plate of Emblem XXXIX refer to the many allegorical challenges of interpretation for the budding alchemist, including the reader of the *Atalanta* and its implied constructed languages.

The theme of the Tower of Babel and its linguistic consequences, and in turn the need for an artificial, universal language, is a common one in the Palatine court circles at the time of the *Atalanta's* printing. Johann Valentine Andreae, perhaps best know for his Rosicrucian works, publishes a work entitled *Turris Babel* in 1619, in which he uses the dating and consequences of the original tower as a means of prophesising the fall of the Pope and Mohammed—a proposition of considerable interest to a Prince-Elector about to form a Bohemian league to take on both.[36] Kircher's *Turris Babel,* which was more interested in the physical construction of the tower than its linguistic consequences, was published much later, in 1679.

Most subsequent period pictorial images of the Tower of Babel[37], however, seem to take their cue from Brueghel the Elder's 1563 painting (figure 4.25), which was disseminated numerous times in print copy across the Continent in the centuries after its production. Emblem XXXVI certainly draws on the bottom left of the painting (figures 4.26 and 4.27a/b). In the *Atalanta* emblem, distinct blocks of matter, like those amongst Brueghel's king and builders, float in the river and the sky and perch on the hills. The dwellings and the bridge in the background resemble the genre of peasant landscape Brueghel evokes in this corner of the panel as well. The epigram of the emblem refers to the presence of the matter for the Philosopher's Stone amongst the matter of the earth. The discourse expands on this theme:

[36] Yates. *Rosicrucian Enlightenment*. P. 48.
[37] This includes some of the Hieronymus Cock engravings of *actual* Roman ruins.

> Ab omnibus, qui lapidus nomen & potentiam vel semel audiverunt nisi sunt ex penitus in credulis quaerisolet, ubi inveniendus sit, ut recta quasi viam ad eam currant? Respondent Philosophi duplici modi: Primo quod Adam eum secum ex Paradiso attulerit, quod sit in te, in me, inque omni homine , quod volantes eum secum portant ex longinquis locis. Secondo, quod in terris montibus, aere & flumine reperiatur.
>
> All persons that have once heard of the name or power of the Stone, unless they are altogether incredulous, ask presently where it may be found, that so they may run directly to it. The Philosphers answer is twofold: First Adam brought it with him out of Paradise, that is, in you and in me, and in every man that, birds flying, bring it with them out of far countries. Secondly, it may be found in the Earth, Mountains, Air and Rivers.[38]

It is this first explanation; that Adam brought the means and materials for the Stone out of paradise, that returns us to the question of language, particularly the language of Paradise before the Fall, and the Early Modern project of recreating a similar artificial language to take its place. While again, Dalgarno, Wilkins, and other actual creators of textual Early Modern universal languages openly and emphatically rejected any mystical bent[39], this does not mean that Maier or Merian, or indeed De Caus did. The floating cubical matter in the sky of Emblem XXXVI strongly recalls De Caus' commitment to matter as a Platonic building block of knowledge in the garden, and the frontispiece to "*Hortus Palatinus A Frederico Rege Boemiae…*" which features Athena and Hermes flanking Platonic geometric solids with a tablet and compass respectively (Figure 4.28).

Platonic geometric forms also come into play in Emblem XXI (Figure 4.29 a/b). The poetic epigram refers to the ancient problem of squaring the circle, which is given as the equivalent of understanding how to make the Philosopher's Stone ('Fac ex mare & foemina circulum, inde

[38] Again this is the BL MS Sloane 3645 translation.
[39] J. Maat, *Philosophical Languages in the Seventeenth Century: Dalgarno, Wilkins, Leibniz* (Kluwer, 2004).P. 46-48.

quadrangulum, hinc triangulum, fac circulum & habebis lap. Philosophorum'). The geometer uses two hand-size compass needles the length of his entire body to draw enclosed forms inscribed on a brick wall, the smallest of which is a circle containing the male and female figure. Geometric tools lie at his feet, but so does a sheet of what appears to be paper, which itself features geometric forms in drawings. The plate thus features two inscribed surfaces within it, the wall and the paper, and these surfaces point towards the Philosopher's Stone, implying that language, and specifically language as geometric and visual form, conveys its implicit secrets. These forms are inscribed both on earthly matter (the wall, the engraver's plate itself) and in the Adamic pre-Babel language of truth the book tries to approach more broadly (the 'remembered' language of neo-Platonic forms, including music).

These modes of inscribing and reading visual forms as language tie into two other court media I shall discuss here: courtly dance, and the plans for the *Hortus Palatinus* as printed in 1620, again by the De Bry press and engraved by Merian, just as the *Atalanta* is. First I focus on De Caus' gardens, but both dance and the garden are tied to the textiles of the court by *broderie*, and to the metrical pattern of the emblems' music, again a theme I shall return to at some length. For now it is the form as rebus, and indeed the idea of the emblem as hieroglyph that extends back to the device's origin in Alciato, that raises the subsequent question about the garden plans. If the garden plans are a type of language of forms, how ought they be read? As Kircher 'reads' Egyptian (a bit of either legendary self-convincing or pure charlatanry)[40]? The forms of De Caus' parterres are puzzling because they form at first glance no obvious grammar or alphabet.

[40] I owe the anecdote of Kircher constructing meaning out of any foreign glyphs levied before him, include a backwards Latin phrase critiquing his own vanity, to Mencken's *Charlatanry of*

Yet De Caus was writing for a learned audience, one that had access to the to other treatises often bound it with his garden plan, the first on his grottoes and mechanical mechanisms of fountains, and the second on Pythagorean musical harmonies.[41] Patterson's general argument reads the garden on two distinct axes, one I shall not advance here for lack of other evidence of intent in De Caus' own authorial statements[42], but his argument for De Caus' garden as encyclopaedic treats the *parterres de broderie* in particular in a helpful manner. In his discussion of the Orange Tree parterre (figure 4.30) he notes[43]:

> According to principles which have been at play so far in the organization of the garden, this parterre is laid out as a complex diagram of eight equal divisions. Its star form, reminiscent of similar forms published by Vredeman de Vries, has as its major features orange-trees, planted in concentric circles of eight, with a single tree at the centre, planted higher than the others… The significance it held for de Caus can be discerned from the comment elsewhere that he makes on 'eightness', 'which number encloses all consonances within it'. Accompanying this statement in the *Institution Harmonique* is a diagram derived from Zarlino who made a similar comment with respect to the number six.

Patterson then goes on to describe how De Caus individually designates the position of each tree in the parterre to align with a larger, neo-Platonic order governing the whole axis of the garden, and in turn its position in the cosmos.

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the Learned and its subsequent critique by Findlen, all of which was initially brought to my attention again as I wrote this chapter by Flori Pierri.

[41] That is the *Les raisons des forces mouuantes, auec diuerses machines tant vtilles que plaisantes: aus quelles sont adioints plusieurs desseings de grotes et fontaines// Institution Harmonique.* 1615. A Francfort : En la boutique de Ian Norton. Consulted in both Glasgow Sp Coll D.x.5, Euing and Bod. Ashm. 1748 (2).

[42] Pattersons schema for the garden is "While the first axis realizes an image of ontological possibility according to a universal harmonic order in a manner something like that of a scientific table, the latter proposes an epistemological, schematic, or pedagogical programme in the equation of levels of poetic insight with a hierarchy of knowledge."

[43] Patterson. P. 85.

Morgan, the other current academic expert on the *Hortus* in the Palatinate, in his volume on De Caus[44], finds Patterson's reading of this *parterre* a bit overextended but in general agrees to a harmonic or over-arching Neo-Platonic scheme.[45] What is more important in Morgan's view, however, is the orange parterre's references to nature and culture and the one imitating the other in turn in its construction, and the visual reference to the obelisk in the labyrinth of the terrace above it as associated with both Solomonic wisdom and Salomon De Caus' own name.[46] The obelisk appears as a motif in both the final *Atalanta* emblem of the risen hermaphroditic king who is simultaneously a woman ('mulier', Figure 4.50) and in that of the Palatine lion that is also the mercurial lion of alchemy (XXXVII, figure 4.31 a/b). Unlike the ruins it does not seem to decay but pierces the sky, triangular, sharp and everlasting. It is the opposite of the Benjaminian ruins in the other emblems in that it is an allegory for constancy rather than decay. Sacred, Solomonic, knowledge seems to escape decay even as its modes of inscription themselves fade.

To expand on Morgan, the orange parterre's harmonics and nature-culture fusion point to the garden, and the *Atalanta Fugiens'* ultimate end: knowledge that is not subject to the forces of time and degradation at all. This is echoed strongly in the Biblical, Biblical-historical and natural-historical commentary of the time. The title of Bennett and Mandelbrote's 1998 exhibition book "The Garden, the Ark, the Tower, the Temple: Biblical metaphors of Knowledge

[44] Luke. Morgan, *Nature as Model : Salomon de Caus and Early Seventeenth-Century Landscape Design* (Philadelphia, Pa: University of Pennsylvania Press, 2007).
[45] Ibid. P.170-172.
[46] Ibid. P. 174.

in Early Modern Europe" could not be more apt for the *Atalanta*-De Caus project[47]. De Caus' *Hortus Palatinus* stands in for the post-Lapsarian garden aiming to recover Eden, the emblem book itself is an Ark of types of alchemical and esoteric knowledge, the Tower is the project of re-engineering universal language to correct the failure of the Tower of Babel, and the Temple is Solomon's temple—which like De Caus' *parterres de broderie*, is engineered with divinely perfect geometric proportions, again the subject of the processes of Early Modern re-making and recovery.

V.

Puzzlingly, *broderie* is not universally, or even conventionally, regarded as emblematic. Karen Edwards, in the midst a broader argument that Milton rejects the emblematic form, argues that the *parterre de broderie* refers only to itself, reflexively as ornament.[48] In most garden literature, like textile embroidery, it is treated as similarly without meaning, due mostly to its complex looping forms that appear to be outside of a sign-signifier-signified system, except to the few readers treating the subject within De Caus' own oeuvre, such as Morgan and Patterson. Here I attempt an expansion of this view of both what the emblematic constitutes more broadly, and

[47] This book has been extremely influential in how I conceptualised the intellectual world within with the *Atalanta* and the Palatine Gardens existed. Were this chapter of a different nature, a broader treatment of Biblical commentary would be an excellent addition: Bennett, J. A., and Scott Mandelbrote. *The Garden, the Ark, the Tower, the Temple : Biblical Metaphors of Knowledge in Early Modern Europe* (Oxford: Museum of the History of Science in association with the Bodleian Library, 1998).

[48] Karen L. Edwards and Cambridge University Press., *Milton and the Natural World : Science and Poetry in Paradise Lost* (Cambridge; New York: Cambridge University Press, 2013).P.167-69. I strongly disagree with this reading of Milton's use of bedded flowers in Eden as well as its implication for Stuart garden history.

how *parterres de broderie* become a kind of writing on the world, the hand of man taking up God's own vegetal ink in the *liber naturae.*

One of the first universal languages to immediately associate itself with *parterres de broderie* is that of Early Modern dance. Later partially codified in the form of Feuillet notation (Figure 4.32), dance was a common for of rhetorical expression across Early Modern court cultures. As Jennifer Neville notes, Hugh Plat explicitly links the dance to the form of the horticultural *broderie* in his *Garden of Eden*[49] :

"I shall not trouble the Reader with any curious rules for shaping and fashioning of a Garden or Orchard - - Every Drawer or Embroider, nay, (almost) each *Dancing Master,* (my emphasis) may pretend to such niceties."

Mark Franko traces this development in both France and generally, noting that: "…Late Renaissance choreography distinguished itself by its professed intent to practise a hermetic symbolism in visual effects. The audience was called on to decipher or, in some sense, to read choreographic patterns."[50] For Nevile, these choreographic patterns, and their specific relationship to line, order, and harmony, directly resemble the physical forms of garden design, from Italy to England and France (it should also be noted that many of De Caus' notable gardens take on Nevile's stock parterre forms in these other countries). Even the physicality of the trees in the parterres resembles the form of the dance itself, including the interchange of couples that Nevile links to the practise of *espalier*, or the interweaving with a gridded support, for fruit

[49] Cited in: Jennifer Nevile, "Dance and the Garden: Moving and Static Choreography in Renaissance Europe," *Renaissance Quarterly* 52, no. 3 (1999): 805–36. P. 806. This citation is page 31-32 of Plat.
[50] Mark Franko, *Dance as Text : Ideologies of the Baroque Body*, 2015. P. 16.

trees.[51] The foot itself in baroque dance resembles the sharp cut back and forth of parterres, or the in and out of the espalier (or in fact, the shuttles of the low warp tapestry loom). The baroque dance foot resists the extremity of modern ballet, which ideally features hips turned out to a full 180 degrees, keeping the hips closer to 90 degrees. One foot cuts in front of the other sharply, weaving in and out of the main labyrinthine patterns taught by dancing masters to their noble charges. Jumps are not aimed for maximum air-time or *ballon*, but rather for the proportionality in expression to the piece's entire theme.[52] Moderation and balance is the overall key, point and counterpoint employed in body as much as sound.

The theme of a piece, like a garden layout, was not visible to the dancers themselves. Nor was it visible to the audience, witnessing the choreography in court spaces in the round. It was usually only visible, like the *parterres de broderie* to a reader looking at the layout in a printed book or broadsheet after the design had been completed, again as if through a Miltonian 'aerie microscope' (figure 4.33, see also figure 4.4b of De Caus' full garden plan).[53] The legless man who does not hold the key to the garden labyrinth in Emblem XXVII couldn't see the whole thing from above even if he was able to walk in it. The dancers, including Elizabeth Stuart and Frederick V themselves, at the Jacobean wedding masque that preceded their marriage ceremony, knew the pattern from the perspective of someone looking out on the dance floor, not

[51] The former is Nevile's general argument in the course of her article, whilst the latter is explicitly mentioned on p. 815.
[52] My understanding of this practise comes from Philippa Waite with her *Consort de Danse Baroque*. Invaluable credit for my understanding of the history of ballet and its relative changes is also owed to the Academy of the Joffrey Ballet, Chicago, and in particular to dancer, teacher, and former *prima* with the company Kim Sagami. The book primer is: Philippa. Waite and Judith. Appleby, *Beauchamp-Feuillet Notation : A Guide for Beginner and Intermediate Baroque Dance Students* ([Cardiff]: Consort de Danse Baroque, 2003). Cardiff: Consort de Danse Baroque.
[53] Nevile. Pages 818-19.

over it, with the whole dance laid out in space as well as time, past and future. Like the compressions of space in the *Atalanta*'s frontispiece and in the form of the book, the premise of dance notation plays with what space, time, and representation can be, and how representations of phenomena across space and time can mean as a language.

Early Modern dance notation, interlinked with ideas of memory and rhetoric, is also a way of giving grammar to the formal spaces of the bodily in two dimensions of a page, even as the act itself occurs in the three-four dimensions of space and time in the world. The garden as a dance pattern invites the viewer to 'read' the *parterre de broderie* with his feet.[54] Emblem XLII[55] (figure 4.34 a/b) of the *Atalanta* makes this kind of "foot reading" clear. Its epigram reads:

> Dux Natura tibi, tuque arte pedissequus illi
> Esto lubens, erras, ni comes ipsa viae est
> Det ratio scipionis opem, Experientia firmet
> Lumina, quo possit cernere posta procul.
> Lectio sit lampas tenebris dilucida, rerum
> Verborumque strues providus ut caveas.
>
> Let Nature be your guide, and with your art,
> Follow her closely. Without her you'll err.
> Let reason be your staff; experience lend
> Power to your sight, that you may see afar.
> Let reading be your lamp, dispelling dark,
> That you may guard 'gainst throngs of things and words.[56]

[54] Dancers were of both gender at court, but I use 'his' here because the audience for mystical, universal language experiments in Bohemia was largely historically male.
[55] Yates offers a brief reading of this emblem linking it to Dee and the Rosicrucian Movement on the whole in pp. 114-5 of *the Rosicrucian Enlightenment*.
[56] This translation is Jocelyn Godwin's in : Godwin, Joscelyn, Michael. Maier, *Atalanta Fugiens : An Edition of the Emblems, Fugues and Epigrams* (Grand Rapids: Phanes Press, 1989).. This edition, with many imperfections, is the only modern translation of the Latin in print. I caution readers to only use the English here as a rough guide. A new edition (including parts of this essay) is forthcoming from Brown University, and will be substituted for Godwin's in a future monograph version of this chapter.

In the emblem's image, a scholar wearing glasses and holding a walking stick to air his near-blindness, follows in the path of Natura as she walks into the foreground of the darkened plate. He prods for her footsteps sunken into the ground. The word for guide or attendant that follows on one's feet, 'pedissequus' derives from 'pes, pedis' for foot. The scholar's lamp just touches the frame of the emblem, the whitest spot on the plate meets the white of the page, with the area without hatching for ink to set in signifying emanated light. The page itself then, is lit up with the visible path of knowledge, the path through the garden labyrinth on which we should tread in Nature's steps. The emblem book then, is a stand in for our guide through the dark forest into possible truth.

The poem literalises this metaphorical with careful use of Latin metrical feet in the epigram, directing us to place ourselves in them as we read. Yet there is more: the philosopher-alchemist needs protection and guidance against the false encroachment of other words and things that would deceive him ('rerum//Verborumque'). What constitute false words? Can there be false things? Wilkins grappled with this problem when he discussed the need for a universal, artificial language that expressed the 'real character' of things. For the users of a proposed universal language, this argument forged a connection between 'real characters' that are not mere orthographic constructions, but link to a thing's semantics as it exists in the world. For some it also created a spectrum from a 'real character' to a shorthand character, to an encrypted character to transmit this semantic meaning.[57] The connection between *res* and *verba*, and what that

[57] Lewis specifically discusses this on p.123-7 and p.133.

connection should entail in terms of formed characters and grammar, was an active Early Modern problem.

Although Wilkins, and subsequently Ward, would have surely rejected the *parterre de broderie* and its related dances as a language of real characters, it is likely that both De Caus and the readers of the *Atalanta* might see it that way. De Caus was a Neo-Platonist and believed in the Platonic concept of recovered knowledge of the forms. Accessing this knowledge through the hierarchy of the beautiful, combined with a post-Lapsarian Protestant view toward recovery of knowledge through Edenic reconstruction, would have made a garden an ideal site for such a language.[58] A garden can be a *res* that is also a *verba.* So too can a dance, a tapestry, or an emblem book. If the *Atlanta Fugiens* has an overarching agenda, it is perhaps to teach us the grammar of this subtle, almost asemic language of words, images, songs, and things, which only together form a whole. After all, the idea of Adamic language recovery, or post-Babel language creation, speaks to the book's general project of making sense of ruin and recovery, of loss and futurity, of parallel and conflicting spaces and times. There is no one answer as to how to 'read' the obscured grammar of the parterres of the garden, or indeed of the world as an extension of the same language of growing things, but the epigram of Emblem XLIII has some suggestions: strive for erudition, follow nature, and stumble around in the dark of a largely cryptic universe whilst trying fervently not to get lost.

[58] The idea of garden as book and vice-versa is a common Early Modern humanist theme. For a thorough overview of the topic see Chapter 2 "The Bookish Nature of Botanical Culture: Continental Contexts", p. 13-28 of: Leah. Knight, *Of Books and Botany in Early Modern England : Sixteenth-Century Plants and Print Culture* (Farnham: Ashgate, 2009).

Not getting lost is something of a theme for the Winter King. One of the most prominent wedding floats captured in the De Bry plates was one of the Argo, with Frederick V himself as Jason (figure 4.35). This Argo is again a grafted together antiquity and present, just as infinitely both built again and unitary as the ship supposedly was. It flies with the crest of the English crown and its motto as a flag, cementing the trans-Channel Protestant union. Its balustrades resemble a baroque balcony, and it has an ornate grimacing dragon prow. The knights who occupy it hold not shields of antiquity, but relevant crests to the marriage. Ornamental sea monsters occupy the papier-mâché architecture of the base, itself fundamentally temporary as the myth's own permanence. In the middle of the Argo is a rather perplexing tree. It is not a mast. From it hangs what is presumably supposed to be a golden fleece, but is an actually a whole sheep. It's not just any random sheep, but an Old Testament breed, complete with horns and fluffy tail (figure 4.36).[59] Guided by Biblical precedent, quite literally bleating and rooted in a living tree, the new Argo of the Palatinate sails forward from the Thames onto the Rhine, painfully certain of the rightness of its future course by past precedent embodied in design—Classical, Biblical, allegorical, and even physical specimens of nature.

The tree on the procession *Argo* can be representative of one of two Biblical precedents that inform the alchemical quest for the 'golden fleece'; the Tree of Knowledge or the Tree of Life. It is likely the latter, given *Atalanta*'s Emblem XXVI (figure 4.37a/b, its epigram reads "Sapientiae humanae fructus Lignum vitae est"—the fruit of human wisdom is the Tree of Life)

[59] This type of sheep is specifically Biblical and not present as a common breed in Early Modern Europe. With thanks to Flori Pierri for the identification. For an amusing take on the current Jacob sheep breed and its imminent re-introduction to Israel because of Biblical precedent, see: http://www.npr.org/sections/parallels/2017/01/02/507890286/canadians-on-mission-to-return-old-testament-sheep-to-holy-land .

and the aims of Palatine alchemical discovery. Having already plucked the fruit of the Tree of Knowledge, man seeks the key to recover the lost properties of the Tree of Life after he was cast out of Eden. The *Lignum vitae* itself graces the right side of the plate, a perfectly ordinary orchard specimen if it weren't for Wisdom herself standing dead centre. In her right hand she holds a scroll reading "Lingitudo dierum et Sanitas" (Length of days and health), and in the left "Gloria ac divitiae infinitae" (Glory and also infinite riches). These are the two primary aims of the alchemical process for producing the Philosopher's Stone, and more broadly, rewards for understanding the interlocking structures of macro- and micro-cosm that meet at the bodily scale of man, who is the same physical size as Wisdom herself in the *Atalanta*'s other plates when he too is in the foreground.

Emblem XXVI's epigram reinforces not only the desirability of this recovery of Edenic grace in the form of knowledge, but also its fundamental achievability given the contents set before the reader:

> Major inhumanis non est sapientia rebus,
> Quamquam divitiae vitaque sana venit.
> Dextra salubre tenet spaciosi temporis aevum,,
> Illius at cumulos laeva recondit opum.
> Siquis ad hanc ratione manuque accesserit illi
> Vitae fructus in hac arboris instar erit.
>
> In Man's affairs, the greatest wisdom is
> Any thing from which comes wealth and healthy life.
> Her right hand holds salubrious length of years,
> But in her left o'erwhelming treasures hide,
> If one approaches her with head and hand,
> She'll be like fruit from off the Tree of Life.[60]

[60] This is again Jocelyn Godwin's translation.

The head and the hand could conservatively be read as alchemical philosophy and laboratory practise respectively, but also more broadly as general works of head and hand in the attempt to rediscover the properties of the Biblical Garden, Ark, Tower, and Temple, and in turn reconstruct them anew in the Palatine courtly atmosphere ideal to such universalist projects. The garden of De Caus is a work of both head and hand, as are all the multi-medial objects that play on it and the *Atalanta* itself.

This emblem of Wisdom, the twenty-sixth of fifty-one, is in the central physical place of the book, and naturally parts the pages as the spine falls open. Whatever turmoil haunts the book, including the death and resurrection of the alchemical king as hermaphroditic Philsopher's Stone, and the implied destruction of ruins in the images, she is an anchoring constant. In a world of discontinuity and change, with the classical, Biblical, and antiquarian readings of both taken together all jostling for space, her figure is a constant. She—and the Tree of Life—remain at the secret heart of the *Atalanta's* pages long after the book is closed, even long after the entire space of the garden, grottoes, dances, tapestries and fugues that it employs as allegory long pass into ashes.

The reader of the *Atalanta Fugiens* as emblem book must thus unfold the compressed space and time of history into the modern world, starting with a search for Wisdom in all her embodied forms. In a Benjaminian archive-as-salvational-device mode, this restores the brief Hesperidean unity of the arts under the Palatinate. Readerly knowledge is thus the secret key to the protected archive of a self-encoded civilisation, a single moment in time and place in its many complexities. We read it, we sing it, we see it, we smell it in new boughs on the wind, we dance

it on modern floors in rubbery, squeaking shoes. Everyone stays dead. Yet, the archive lives forever, and the *Atalanta Fugiens*, a book of little picture worlds, becomes a unified whole that encompasses the world of the present-day reader and renders it is an historical fugue, an elegy for an ever-fleeting past that runs away as fast and as easily as a nymph, who pauses only with each of three golden apples of word, image, and song.

Yet this is not the *Atalanta's* only project. A Gesamtkunstwerk is more than an, admittedly beautiful and intentionally poetic, historical insurance policy. Taken together with the atmosphere of the Palatinate under Frederick V in Heidelberg—with its gardens and their designer, as well as its people and their various costumed guises—it proposes a new way to read the rest of the world. The book is a garden is a language is a text is a dance is a tapestry is song; which is of course a text which is a book which is a language and a garden and on and on. Each world encodes the other. Each makes the other speak in new and illuminating ways. With our heads and our hands, humbled by the scope of knowledge, it shows us how to approach wisdom, to seek the Hesperidean lost fruit. What are *res*, *verba*, *imago,* and each to the other? The *Atalanta Fugiens* shows its reader how all three are always the other, inseparable and ineluctably intertwined, running at each other's heels. They are like racers, the lines of epigrams, or carefully cultivated vines. They are mercury, sulfur, and salt.

A Brief Concluding Note

I began this thesis with a reference to what is arguably one of the most traditionally canonical of texts for the period in which it is set-- Milton's *Paradise Lost*. Certainly many of my historical actors, working within the frame of a post-Lapsarian world order, and within the idea of innate theological and other types of structures that govern it, would have been familiar with Milton. In what is many ways a chiasmus of contraries, I close with something entirely different, a reference to a modern work that touches on some of the same themes: the *Earthsea* trilogy by Ursula K. LeGuin, published beginning in 1968. In the world of *Earthsea* magic works by words. If you call a pebble simply a pebble, and ask it to do something, say float in the air, nothing will happen. Yet, if you call a pebble by its true name from the Hardic, connected to the Old Speech that created the novel's world, it will do your bidding. A pebble can become a bird, even a folded crane, when you know to call it *tolk*.

Access to the true speech that governs magic in Earthsea is controlled partly by memory passed down through generations, and partly through scholarly authority through the school of magic on Roke. Roke is a green, still island of old stone in a world of islands buffeted by sea and winds. It has a tower where books of the true names of things are kept safe for generations, and taught by memory to the scholars. The Isolate Tower is an archive with power because it contains the knowledge to move the true things at the foundation of the world. The archive, collection, and personal library, for the readers of the Early Modern alchemical books treated in this thesis, often served this same function. Elias Ashmole's collections and library, subsequently donated intact to the Bodleian, on a not entirely dissimilar Isle of the Wise, contain deep secrets about the structure of the universe. This, and not the mere conversion of lead into gold, is what undergirds the alchemy pursued by the Early Modern antiquarians of this thesis.

These antiquarians have paid their dues in time at their own Isolate Tower. They learned from manuscripts, often saved from monastic libraries during the Dissolution or seen in glimpses of other collections, the "true speech" of alchemical secrets. Alchemical secrets had to be openly displayed in reproducible books, so they could be preserved for generations of future adepts while simultaneously guarding against reading by the non-elect. Allegory as a form of speech, and the image as the primary form of this allegory, is at the core of this thesis' arguments. The open secrets of alchemy are kept—in the Ripley Scrolls, in borders and formula books, in gardens and emblems—partly because they are encoded, and partly because their mode of encryption is both so simple and so complex. The old speech of this world isn't speech at all *per se*, but images.

This thesis attempts, for the first time, to make the contribution of the image and of visual art in general, central to a set of key case studies about the alchemical book. This is not to say, however, that is can abandon words or their remit. When a word of the Old Speech is forgotten in Earthsea, it can sometimes be recovered through extraordinary means—going to the ends of the known world, talking to dragons, or navigating through unseen labyrinths. To read again the images of alchemy on their own terms is also an act of extraordinary recovery. On the Ripley Scrolls, the Bird of Hermes, a sort of dragon-bird-

basilisk cross-over, rhymes that it bites its own wings to keep itself tame. It reveals nothing unless it is meant to, tamed by the open secrecy of its display. It might not talk to us directly, but Ripley's texts—as well as other period poetry, garden books, and history—do speak to a modern reader, and can be employed to prise open the meaning's door. This is our labyrinth to navigate, paralleled by the labyrinth depicted in the *Atalanta Fugiens* that urges the alchemical adept herself to follow in the footsteps of nature as she carries a lamp through a dark thicket. The process of de-coding, reading, and contextualising alchemical images is thus not entirely dissimilar to learning how to do a sort of magic, or alchemy itself.

It is my hope that this thesis forms the basis for a study that can rejuvenate the study of alchemical books beyond just their texts, which have been the focus of scholarly work in the past. This study is also at all times grounded in the books that form the basis for it, and the libraries and archives that hold them. Just as much as its historical actors did, I too, value the magic of the library as a means of preserving and imparting knowledge. This thesis would not exist without the libraries which preceded it in history, and the libraries in which it was written. The relationship between image and language, image as language, and the emotions and consequences that pairing evokes for alchemical books, is something I have touched on productively, but by no means fully explored. In my forthcoming work, both in my proposed postdoctoral project on pariah or 'untouchable' books, and in the monograph to come from this thesis, I hope to return to the spirit of both Milton and LeGuin. Both balance order and disorder in their magics and creations, both emphasise how precious, fragile, and beautiful human knowledge and our particular creation is. Alchemy in Early Modern scientific book illustration is particularly emblematic of this fact.

In the spaces folded into pages, bound into their times and ours, are all the keys to all the locks, each fruit of this particular Tree of Knowledge, each word in Hardic for every wave in the sea and every feather on the crane's wing. This thesis touches on just a few of them. It is the work of a lifetime to uncover, and preserve, perhaps just a few more.

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closets. In the first, one may sleep
standing up; in the other, satisfy one's
fecal necessities. Also through here passes a
spiral stairway, which sinks abysmally and soars
upwards to remote distances. In the hallway there is a mirror
which faithfully duplicates all appearances. Men usually
infer from this mirror that the Library is not infinite
(if it were, why this illusory duplication?); I
prefer to dream that its polished surfaces
represent and promise the infinite . . .