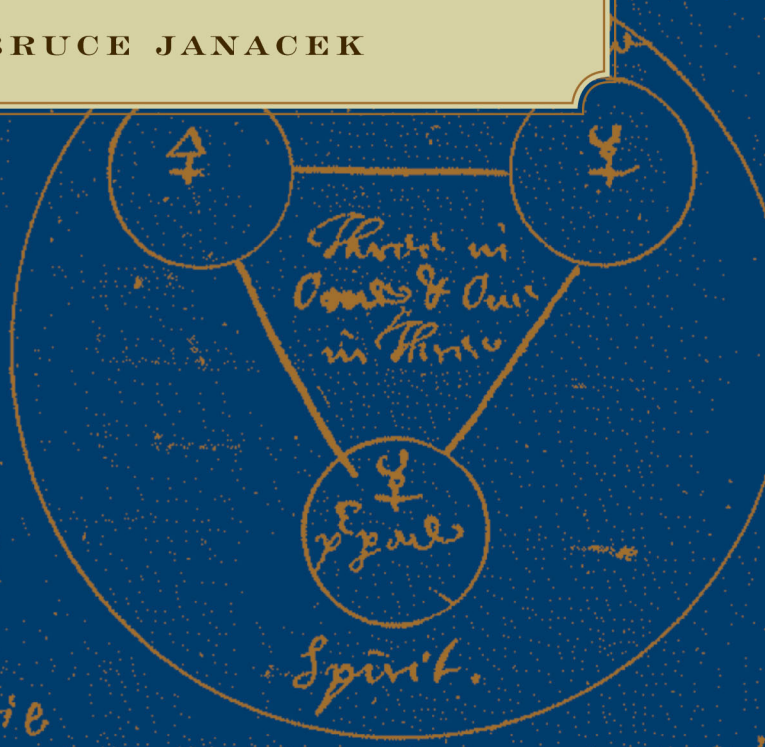


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**ALCHEMICAL BELIEF**  
OCCULTISM *in the* RELIGIOUS CULTURE  
of EARLY MODERN ENGLAND  
BRUCE JANACEK



## ALCHEMICAL BELIEF

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# ALCHEMICAL BELIEF

OCCULTISM *in the* RELIGIOUS CULTURE  
*of* EARLY MODERN ENGLAND

BRUCE JANACEK

THE PENNSYLVANIA STATE UNIVERSITY PRESS  
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*In Loving Memory of Susan Beaudette*

*“But thy eternal summer shall not fade”*

*William Shakespeare, Sonnet 18, line 9*

And the Lord God planted a garden eastward in Eden; and there he put the man whom he had formed. And out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil. And a river went out of Eden to water the garden; and from thence it was parted, and became into four heads. The name of the first is Pison: that is it which compasseth the whole land of Havilah, where there is gold. And the gold of that land is good. . . .

—GENESIS 2:8–12 (KJV)

Behold, I will send my messenger, and he shall prepare the way before me: and the Lord, whom ye seek, shall suddenly come to his temple, even the messenger of the covenant, whom ye delight in: behold, he shall come, saith the Lord of hosts. But who may abide the day of his coming? and who shall stand when he appeareth? for he is like a refiner's fire, and like fuller's soap: And he shall sit as a refiner and purifier of silver: and he shall purify the sons of Levi, and purge them as gold and silver, that they may offer unto the Lord an offering in righteousness. Then shall the offering of Judah and Jerusalem be pleasant unto the Lord, as in the days of old, and as in former years.

—MALACHI 3:1–4 (KJV)

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## ACKNOWLEDGMENTS

The seed of this project was planted in a seminar called Renaissance Cosmologies led by Betty Jo Dobbs at the Folger Shakespeare Library. At the time I was early in my graduate training, trying to find a topic on religion in early modern England, and had never even heard of the history of science. One day, as Betty Jo and I sat outside the Folger after the seminar, she said to me in her gorgeous Arkansas accent, “Ah’ve always thawht there wahs muhch moah tuh say about relihgion and alchahmy.” I went on to write a seminar paper for her and followed her out to UC Davis to complete my doctoral studies under her direction, and after all these years, most of which she did not live to see, I think I can say with some confidence that I agree with her. Her passing, shortly after I had begun the research that would lead to this book, left a vast hole in my life. While I would never call myself a historian of science, I certainly learned more about that world than I would have dreamed possible, and this was due entirely to her inspiration and influence. I hope I have not made too many egregious errors in this volume on the few occasions when I have ventured into that world. Losing Betty Jo meant not only losing a mentor; it meant losing a dear soul whom I still miss. I hope this book would have pleased her.

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## INTRODUCTION

In 1652 the antiquary, heraldist, and occult enthusiast Elias Ashmole (1617–1692) published his *Theatrum Chemicum Britannicum*, a massive collection of texts that reproduced manuscript alchemical recipes and treatises in print for the first time. The *Theatrum* provided seventeenth-century readers with thirty complete alchemical texts and more than twenty alchemical fragments. This collection was not merely a compilation of widely forgotten and nearly lost texts. Ashmole, an antiquary as well as an alchemist, meticulously edited and annotated the volume, providing a discussion of the provenance of each text and explaining, as he understood it, the alchemical tradition itself.<sup>1</sup>

In the commentary that appeared at the end of his book, titled “Annotations,” Ashmole said that ancient philosophers often “Adopted one other for their Sonns” so that their secret knowledge could be protected and sustained, after their deaths, by heirs worthy of it.<sup>2</sup> He wrote of this tradition from personal experience. On April 3, 1651, just a year before he published his *Theatrum*, the alchemist William Backhouse asked Ashmole to be his son and to call him “father.” At that moment, Backhouse became his adopted “alchemical father.”<sup>3</sup> A laying on of hands had occurred, and Ashmole was now part of a line of adepts that stretched from his day to antiquity.<sup>4</sup> This “adoption,” however, was more than a mere symbol of a new spiritual bond between master and apprentice; Ashmole believed that it was akin to the ordination of a novice by a priest. With what both men believed to be divine blessing, Backhouse gave Ashmole the power to cleanse and purify the universe. It was a conversion from laity to clergy, but in a way that went beyond his belonging to the Church of England. Ashmole and his circle perceived their alchemical pursuits as pious works that complemented but also transcended the boundaries of the official confession of the Church of England. Ashmole’s private “adoption” by Backhouse legitimized his search for the philosophers’ stone



and its vast, universal implications. Immediately afterward, he composed an ode to Backhouse that expressed his profound appreciation of the alchemical significance of his adoption.<sup>5</sup>

Ashmole drew deliberate parallels between his alchemical heritage, the biblical prophets, and the life of Jesus. "Our English Philosophers Generally, (like Prophets)," he wrote, "have received little honour in their owne Country."<sup>6</sup> Although clearly one purpose of his work was to bring England's rich alchemical tradition to the public's attention, his comparison of English philosophers to prophets was neither casual nor accidental. In this allusion to the Nazarenes' rejection of Jesus, their native son, Ashmole elevated natural philosophers to the level of the biblical prophets and, in this instance, of Christ himself. Just as prophets could see and reveal what others could not, he seemed to believe that alchemists were blessed with a singular, divine illumination. Later, he made an even bolder statement about the religious stature of an alchemist when he described a magus as "a Contemplator of Heavenly and divine Sciences, a studious Observer, an expounder of Divine things, a name (saith Marcellus Ficinus) gracious in the Gospell, not signifying a Witch or a Conjurer, but a wise man and a Priest."<sup>7</sup> Ashmole was not merely using metaphorical language. He believed that this was the most appropriate description of practitioners of alchemy. He believed that God had chosen alchemists to be intercessors between the natural world and the divine, and it was fitting that their work be cloaked in the language of the clergy.

Ashmole was far from the only alchemist to invoke such rhetoric in alchemical studies. Robert Bostocke's text *The difference betwene the auncient Phisicke, first taught by the godly forefathers . . . and the latter Phisicke proceeding from Idolaters* (1585) had a preface that Bostocke titled "The Authors obtestation to almighty God." "Obtestation" is a word rarely used today, but it suggests a beseeching by a sacred name, a solemn entreaty or supplication. In other words, Bostocke's preface to this alchemical text was a prayer.

Bostocke pleaded for God to bless his work so that the heathen work of Aristotle would be discarded and replaced by a new philosophy of nature that accorded more explicitly and perfectly with traditional Christian dogma, such as the belief that matter did not exist until God created it, or that divinity was rightly understood only when expressed in the form of the Trinity. Like most of his contemporaries, Bostocke believed that the sin of Adam and Eve affected the entire natural world: "And for mans transgression all things were made mortall, that is to saie, were by God appointed unto miserie and destruction: so that now the world is become a creature subject to vanitie."<sup>8</sup> Vanity, of course, was the sin that Adam and Eve committed, and therefore their progeny were condemned to this sin. The natural world was as much in need of redemption as they were. Bostocke's response to this dilemma was to write an alchemical treatise.

Ashmole's, Bostocke's, and their brethren's interest in alchemy becomes clearer when we appreciate that Protestant reformers understood the fall from grace as affecting not only humanity but nature itself. Animals that had been docile companions to humans became wild, the soil became unyielding, and mountains and valleys appeared in place of fertile plains. Before the Fall, Adam had ruled with knowledge and wisdom, but he forfeited that knowledge when he sinned, and thus the forces of nature became mysterious. As Peter Harrison explains, "knowledge of nature required not only a recognition of the cognitive limits of fallen minds, but of the corruption and epistemological inaccessibility of nature and its operations."<sup>9</sup> Alchemists of the sixteenth and early seventeenth centuries believed that the philosophers' stone would redeem "corrupted" matter and therefore possibly—hopefully—transform and restore the entire natural world to its pristine, prelapsarian state, when humanity and nature were in perfect harmony.<sup>10</sup> The purpose of this study is to examine the historical significance of these beliefs at their apogee.

*Alchemical Belief* examines how alchemy in late Tudor and early Stuart England became integrated into central tenets of Christianity. While the individuals under consideration here had their own particular beliefs in the possibilities and potential of alchemy, adepts in early modern England believed that they were uniquely, even divinely, ordained to re-create the harmony that existed between humanity and nature before the Fall. As the Hebrew prophet Malachi made clear, God's messenger would come, "and he shall sit as a refiner and purifier of silver: and he shall purify the sons of Levi, and purge them as gold and silver, that they may offer unto the Lord an offering in righteousness. Then shall the offering of Judah and Jerusalem be pleasant unto the Lord, as in the days of old, and as in former years" (Mal. 3:3–4). Some English alchemists believed that they were such godly messengers. *Alchemical Belief* attempts to understand these theological and occult beliefs that early moderns embraced, to understand and explain their religious and political culture.

Although the individuals we will encounter were engaged in restoring England from its fallen state, they were part of a larger effort led by individuals in England and on the Continent who also wanted to diminish the differences between the various Protestant confessions. Early efforts at irenicism probably began no later than the late sixteenth-century Austrian court in Vienna and were followed in the seventeenth century by the so-called Hartlib Circle of Samuel Hartlib, John Dury, and Johann Comenius.<sup>11</sup> These amorphous but influential movements shared many of the goals of the alchemists examined in this book. They and others who resided in such far-flung places as Herborn and Prague agreed that their world was sorely in need of restoration and that they were the ones endowed, perhaps even divinely ordained, to restore it.<sup>12</sup>

An interest in alchemy and the occult typified these movements and defined this effort in England. What's more, the individuals who wrestled with alchemical concepts came from educated, even elite levels of society. The case studies in this volume collectively argue that some of the most prominent public figures in traditional Tudor-Stuart politics turned to the occult tradition of alchemy to define and defend orthodox Christian beliefs and practices. Like Roman Catholicism, the major Protestant confessions upheld the doctrines of the Trinity, the resurrection of the dead, the redemption of God's creatures, and the active and living presence of God on earth, and their adherents believed in the importance of approaching all Christian work with humility and reverence. Certain individuals turned to the occult practice of alchemy to demonstrate the veracity of these orthodoxies, using unorthodox proofs for orthodox beliefs.<sup>13</sup>

Thomas Tymme (d. 1620), Robert Fludd (1574–1637), Sir Francis Bacon (1561–1626), Sir Kenelm Digby (1603–1665), and Elias Ashmole developed and articulated their alchemical theories from the 1580s to the 1660s, the decades that led up to the Civil War, the war itself, and its immediate aftermath. These alchemists were not part of the radical groups who wanted to transform the English kingdom along utopian lines.<sup>14</sup> The alchemists we will encounter were loyal supporters and, when it came to the Civil War, defenders of the Crown; they were, in effect, "Royalist alchemists." All but one were members of the Church of England, and the one exception, Sir Kenelm Digby, a Roman Catholic, nevertheless moved in the inner circles of power with such deftness and aplomb that he was intimate with both the early Stuart court and the Cromwellian Protectorate. That the practice of alchemy could serve the orthodox positions of the Church of England suggests that occultism permeated virtually every aspect of early modern English society, including its governing and ecclesiastical structures. These alchemists developed and articulated their alchemical beliefs in the crucible of England's most unstable and, at certain moments, revolutionary century. While they certainly sought the philosophers' stone with zeal, their search for religious and political stability was even more ardent.

In his classic study *The Problem of Unbelief*, Lucien Febvre asked whether it was possible to be an atheist in the sixteenth century. Through his historical and literary examination of Rabelais, Febvre argued that "atheist" was an epithet hurled at someone who criticized authority or had unconventional opinions.<sup>15</sup> Febvre used the work of Rabelais as the window through which he viewed the values, suppositions, and preconceptions of sixteenth-century society.

If Rabelais served Febvre well to examine atheism in the sixteenth century, alchemy may serve as a similar window with which to view early modern English religious culture. Jonathan Scott has urged historians of seventeenth-century England to take contemporary belief seriously in order to understand the political

and religious causes of instability during that century. He asks us to listen very carefully to seventeenth-century voices of fear and concern, because they led to the political collapse and ensuing devastation of civil war and regicide.<sup>16</sup> This study echoes that sentiment and suggests that we should listen not only to the concerns and fears of these alchemists but also to their hopes—hopes that might seem very strange and alien to us but may reveal a great deal about what the French so elegantly call *mentalités*, or collective attitudes.<sup>17</sup>

Indeed, it is precisely because the hope they placed in the alchemical process seems so odd to us that we should consider it closely. As Robert Darnton, Natalie Zemon Davis, and other historians of early modern European culture have argued, historical episodes or issues that are foreign to us are the episodes and issues we should study most carefully. Comprehending the oddities of the past helps us to grasp historical culture more fully and helps us steer clear of anachronistic interpretations and conclusions.<sup>18</sup> An understanding of the role of alchemy in the theological and philosophical debates of the day can clarify how early moderns believed knowledge would be revealed to them, and the goals that this knowledge would help them attain.

The concept of religious or spiritual belief itself, however, is slippery and elusive. As sophisticated studies of alchemy by historians of science have shown, belief played little or no part in the work of some alchemists. These alchemists left contracts and notebooks that document days, months, even years of hard work in search of tangible results for the alchemist and patron, but reveal little or no preoccupation with what we could call religious belief.<sup>19</sup>

But there were also early modern alchemists whose alchemical and religious beliefs came together with breathtaking results. These alchemists used alchemy to illustrate, demonstrate, and, in their minds, even prove theological doctrines such as the Trinity and the resurrection of the dead. What better way to gain a deeper understanding of early modern English *mentalités* than to look into the contemporary understanding of alchemy?

The social and political instability, and the political and cultural revolutions of the seventeenth century, affected virtually all dimensions of society: politics, religion, diplomacy, military decisions, and philosophical inquiries into the natural world. Nearly all of these tensions and instabilities arose from deeply held beliefs woven into the fabric of early modern society and culture. The resurgence of the skeptical philosophy called into question every assumption about the universe, including the actions and even the presence of God. The mechanical philosophy threatened to unseat Aristotelianism, the preeminent philosophy for two thousand years. Biblical scholarship began to reveal the patchwork quality of a sacred text that until then was thought to be seamless. Although he used the term to refer

specifically to the politics of the English Revolution, Christopher Hill could have been referring to virtually all of European society when he described the first half of the seventeenth century as a “world turned upside down.”

England was as unsettled and unstable as any region in Europe. When Elizabeth I ascended to the throne in 1558 following the death of her half sister, Mary I (1553–58), she inherited a realm that had endured decades of religious and political tension and occasional bloodshed. Henry VIII’s initial break with Rome, Edward VI’s embrace of genuine Protestant doctrines, and Mary I’s reactionary response, which brought England back into the Catholic fold, however briefly, bequeathed to Elizabeth a traumatized and dispirited religious culture. Elizabeth I (1558–1603) deftly sidestepped this turmoil by passing through Parliament what became known as the Elizabethan Settlement (1559). This statute, along with the so-called Thirty-Eight (eventually Thirty-Nine) Articles of 1563, codified the Protestant doctrine of predestinarian grace within a liturgy that preserved some outward aspects of Roman Catholic worship, creating a church that looked something like the old but spoke in the new language of the Protestant theology of grace. Such would be Elizabeth’s Church of England, accommodating and inclusive, but also reminiscent of a monarch who believed that her role in the faith of her subjects was and should be substantial.

Such a church could work for many English believers, but not for all. One faith community particularly riled by Elizabeth’s Church of England was a Calvinist sect that referred to itself as “the gathered church,” after the way they gathered in the homes and barns of fellow believers, dispensing with the “Romish” fondness for stained glass, altars, and, most annoying of all, the Book of Common Prayer, the liturgical content of which, in Calvinist eyes, bore a suspiciously close resemblance to the old Catholic liturgy. Such direction from on high spoke menacingly to the godly, who rejected any mediation whatsoever between themselves and the word of God. This attitude struck outsiders as sanctimonious, and it was not long before they were mocked for their “purity” and became known, derisively, as “Puritans.” Sanctimonious they may have been, but Puritans were also increasingly vocal in their complaints and often politically and financially influential in their communities.<sup>20</sup>

Tensions between congregants of the Church of England—who eventually became known as Anglicans—and Puritans led to a series of civil wars in the 1640s.<sup>21</sup> These wars were fought between Parliamentarians—whose ranks were drawn from Puritans and Presbyterians (another Calvinist factional group, this one born in Scotland)—and Royalists, who garnered their forces largely from Anglicans loyal to Charles I. The causes of these wars are still a source of controversy, mainly in terms of emphasis.<sup>22</sup> Certainly economic issues, social tensions, and questions of political liberties contributed to the outbreak of hostilities. However,

there is fairly widespread agreement that religion was a central cause, particularly religious disagreement between a defiant and uncompromising Puritan minority and the Church of England, which aspired to accommodate a breadth of believers, broad enough, as we will see, to include those who studied and practiced alchemy. The Puritans' intransigent radicalism exasperated Anglicans to no end, and led eventually to civil war.

The debate on the religious causes of the English Civil War has centered on disagreement over the question of divine grace, a serious issue in the early modern period. Calvinists, Puritans, and Presbyterians all believed that God's grace predestined individual fate, that an individual was saved or damned solely at God's discretion. This belief differed profoundly from the Roman Catholic view that individuals had the freedom to make choices pleasing to God and to earn God's grace through their piety and good works. Such a theology presumed and encouraged a central role for formal ecclesiastical experience in assisting individuals in making the best choices. In the late sixteenth century, however, the Dutch reformer Jacob Arminius (1560–1609) gained a following by arguing for a Protestant understanding of grace obtained through the exercise of free will; Arminius denied the strict predestination of the Calvinists—the doctrine that only the elect could be saved—and held out the possibility of salvation for all. Because Arminians attended to formal liturgy and worship, and cared about such things as repairing damaged stained-glass windows and altars, they found themselves vulnerable to accusations of “popery.”<sup>23</sup> Although the influence of Arminianism has probably been overstated as a cause of the hostilities, it was undoubtedly a divisive force in an era that could ill afford it.<sup>24</sup>

*Alchemical Belief* opens the doors of this debate a bit wider, beyond the questions of grace, predestination, and free will, by looking at the personal spiritual journeys of a handful of individual members of the Church of England, journeys that led these individuals to defend Anglican orthodoxy through novel and unorthodox means. Individuals we will encounter upheld the traditional tenets and theology of the Church of England, and of Christianity more broadly, yet they saw themselves as more than simply stewards of the church. They pursued their alchemical inquiries not only as fully vested members of the Church of England but as a matter of profound theological responsibility. Their understanding of that responsibility demonstrates the breadth of belief possible within the Church of England at a relatively early moment in its history.

Whatever the causes, the divide between increasingly radical Puritan/Parliamentary forces and Royalists of the established church led to enormous bloodshed. In the historical debate over the labyrinthine political and religious conflicts of the day, the vast scale of the casualties suffered in the 1640s is sometimes overlooked or even forgotten. While it is impossible to know the exact number of

casualties, the rough consensus of 190,000 English killed amounts to 3.7 percent of the total population of England, a significantly greater percentage than the 2.6 percent of English killed in World War I and the 0.6 percent lost in World War II.<sup>25</sup> As devastating as these numbers were for the English, the Scots suffered an even greater loss of 6 percent of their population.

However, the English Civil War was fought between different confessions of Protestantism. The level of devastation soared exponentially when Protestants fought Catholics in conflicts such as the French Wars of Religion or the 'Thirty Years' War. When Protestant England invaded and conquered Catholic Ireland in the 1650s, between outbreaks of plague, famine caused by disruption of the agricultural season, and the battles themselves, the Irish lost an astounding 41 percent of their population, a level of devastation that may more appropriately be thought of in terms of genocide or holocaust than of conquest.<sup>26</sup>

The elusive nature of religious and political stability in England in these decades coexisted with the early modern English belief that the universe was suffused with God's divine presence, beginning most notably with the monarch. English monarchs saw themselves and their right to rule as divinely ordained. While this was certainly true of Elizabeth, no English monarchs had greater confidence in their divine right than the early Stuart kings, James VI and I (1603–25) and his son, Charles I (1625–49). James, the author of *The Trew Law of Free Monarchies* (1598), codified the belief, held by generations of political theorists, that the monarch was God's divine representative on earth. Scripture put the lie to any who might quarrel with this potent theory of kingship.<sup>27</sup> It was thus eminently appropriate for all to bow before the king, who bowed only to God. As God's representative, the monarch was addressed as "liege lord," "Majesty," "Highness" and even "dread sovereign," and although these titles surely carried a sense of convention, they also carried the awesome and awe-inspiring source of the monarch's power and authority.<sup>28</sup>

Yet, as Conrad Russell reminds us, early moderns did not believe that God's divine presence on earth ended so much as it began with the monarch. Russell observes that there was "the divine right of the law, the divine right of Parliaments, the divine right of prophets, the divine right of judges, Justices of the Peace, and inferior magistrates, the divine right of the nobility, and the divine right of husbands, fathers, and masters." "What determined people's views on the extent of the king's power," he notes, "was not whether they believed in this divine right, but their views, often shaded and obscure, on the relationship between his divine right and other divine rights."<sup>29</sup> Divine right was a concept that suffused early modern English society from top to bottom.

Indeed, belief in the sacred nature of the monarch led thousands of English, both commoners and nobility, to seek "the royal touch." Beginning with the

eleventh-century monarch Edward the Confessor (ca. 1003–1066) and continuing through the Hanoverian dynasty in the eighteenth century, the English believed that their monarch's touch alone could cure them of epilepsy and a condition known as scrofula, a chronic enlargement and degeneration of the lymphatic glands, known as "the king's evil." That certain elect humans could be God's conduit to his earthly creatures was a common belief among early moderns. When alchemists worked at their furnaces or wrote their philosophical treatises, they reflected widely held assumptions about how the universe operated under God's divine guidance, and how it could be manipulated by those elect few.

But people in early modern Europe believed that all kinds of forces—both divine and demonic—were at work in their world. For the years in which alchemists were engaged in their work were the same years that witch hunts engulfed much of western Europe and Britain. A few naysayers and skeptics notwithstanding, early moderns, notably the intellectual elite, clerics, justices, and lawyers, believed that the devil stalked and seduced those most likely to fall under his spell (old women, primarily, but others too), in an effort to reclaim what he believed was rightfully his, the earthly world.<sup>30</sup> Although the estimates of accusations, prosecutions, and executions are diminishing in light of new research, the scale of this hysteria is still difficult for us to comprehend fully. From roughly 1480 to 1680, the period identified as the peak of the witch hunts, nearly ninety thousand individuals, mostly women, were prosecuted for witchcraft, and approximately half of them were executed.<sup>31</sup> Every prosecution and execution was driven by fiercely held beliefs. While England did not experience this hysteria as deeply or as broadly as other regions, such as Scotland or southwestern Germany, accusations of witchcraft and trials of alleged witches surged in England in the first half of the seventeenth century, particularly during the Civil War.<sup>32</sup> The hopeful beliefs that alchemists brought to their work coexisted with beliefs that embodied the fears and dread of the era.

There is no question that fiercely held political and religious beliefs were a central cause in the outbreak of civil war in England. As Jonathan Scott reminds us, "If, therefore, 'seventeenth-century men killed, tortured and executed each other for political beliefs,' that was because belief lay at the heart of the troubles."<sup>33</sup> As with the inquisitors and prosecutors of the witch hunts, the beliefs that explained and justified the actions of Cavaliers and Parliamentarians resulted in terrible devastation. The anxiety and fear generated by the ensuing cataclysm, and its dreadful fulfillment in the staggering loss of life, were certainly one reason why alchemists believed their work was so important. No wonder the quest for the philosophers' stone was pursued so fervently.<sup>34</sup>

Nevertheless, despite the sincerity of alchemists, belief in the efficacy of alchemy was controversial even in the seventeenth century. To believe in alchemy



meant that an individual had to reconcile alchemical principles with some of the most significant and influential ideas, institutions, and beliefs of the day. Calvinism, Catholicism, skepticism, Baconian method, the mechanical philosophy, collecting, and antiquarianism all dealt at times with the religious and philosophical implications of alchemy. Belief in alchemy demanded that one consider questions of predestination and free will, a profoundly divisive intellectual issue. At least two points may be made at the outset: First, the widespread interest in alchemy should not be construed to mean that it enjoyed universal acceptance. Second, underlying the practice of alchemy was an inherent belief in the viability of alchemical work. It is the story of the viability of alchemical beliefs that this study aims to tell.

Belief in the theological relevance of alchemical work did not mean that all alchemists subscribed to such grand goals and ambitions. Recent scholarship on early modern alchemy has revealed a vast range of alchemists engaged in the practice for very different, sometimes very personal, reasons, some of which had little or nothing to do with the redemptive qualities and purposes of alchemy that the alchemists we will encounter held.<sup>35</sup>

Invigorated by alchemy's theological and philosophical potential, however, some English alchemists hoped that alchemy could help to address their kingdom's particular crises. Seventeenth-century adepts drew deep, often personal, correlations between the alchemical processes of corruption and purification and their work as they wrestled with the conflict between knowledge and belief that characterized early modern English society. At a time when England was suffering the greatest divisions in its history, these individuals hoped that alchemy might act as a sacred balm for its political and religious crises.

Even now we can see how belief permeated virtually every aspect of society. *Alchemical Belief* purports to examine many manifestations of belief in sixteenth- and seventeenth-century England. The beliefs we will encounter will usually be a Christian doctrine, such as the Trinity. However, the alchemists we encounter believed in more than orthodox Christian doctrines. They believed that the alchemical process could demonstrate the veracity of those orthodox beliefs and therefore was as essential to their work as mercury and the fire in their furnaces.

The subject of alchemy has received generous and sophisticated attention in modern historical scholarship, beginning with the pioneering work of Allen Debus, who began in the 1960s to document the influence of Paracelsianism in early modern science and medicine.<sup>36</sup> R. J. W. Evans identified the important role of alchemy in Rudolf II's mysterious court culture. Bruce Moran has contributed two important volumes to this discussion; the first considers alchemy within the post-Reformation world of the court of Hessen-Kassel and establishes the breadth

of alchemical belief in early seventeenth-century Germany. His second volume examines the German natural philosopher Andreas Libavius and places his often polemical writings on logic, education, and rhetoric, as well as what he calls Libavius's "chymia" writings, within their intellectual, social, and cultural context. Pamela Smith examines the role of alchemy in the evolving commercial economy of the Holy Roman Empire in the second half of the seventeenth century.<sup>37</sup>

The practice of alchemy in England during the early modern period has also received a great deal of scholarly attention. In three monographs and numerous articles, B. J. T. Dobbs identified and clarified the role of alchemy in the work of one of the towering figures of the scientific revolution, Sir Isaac Newton.<sup>38</sup> William Newman has traced the influence of one of the most elusive alchemists of the seventeenth century, George Starkey, who wrote his alchemical treatises under the pseudonym Eiraneus Philalethes. Newman has also written a much broader study of alchemy, considering the issue within the context of the debate over art and nature. Lawrence Principe has argued that alchemy was a more significant factor in natural philosophy and the religious belief of Robert Boyle than historians have recognized.<sup>39</sup> Through her study of the Elizabethan physician Simon Forman, Lauren Kassell has provided us with a deeper understanding of the medical community of his day and the ways in which alchemy was a significant component of contemporary medical practice.<sup>40</sup> The present study is deeply indebted to this scholarship, which has uncovered a breathtaking sophistication in the work of some of these seventeenth-century adepts. Yet merely locating the alchemical tradition in the context of early modern natural philosophy does not explain why some alchemists pursued the philosophers' stone with such religious zeal.

The interest in and practice of alchemy is a historical development that will yield different answers depending on the questions we ask, as literary scholars have long recognized. Lyndy Abraham has demonstrated how alchemy saturated the poetry of Andrew Marvell, while Stanton Linden has surveyed the remarkable presence of alchemy in English literature from Chaucer to the Restoration.<sup>41</sup> Finally, Robert M. Schuler has made available in a modern edition alchemical poetry that had been confined to manuscript, thereby providing a wider audience with a better understanding of scientific poetry in the sixteenth and seventeenth centuries.<sup>42</sup>

The breadth of alchemy in early modern culture is evident in two major recent studies. Neil Kamil's *Fortress of the Soul* is a monumental tour de force that breaks new ground in the question of how alchemical thought and the occult can be understood historically. In his study of Huguenot culture in the Sangois, Kamil demonstrates how Calvinist belief, alchemical studies, and artistic craft were deeply intertwined. He retraces the steps of secretive Huguenot alchemists and craftsmen, following them from their hiding places in La Rochelle to their

eventual emigration to the New World.<sup>43</sup> Kamil demonstrates that the study of alchemy reveals aspects of early modern culture that lie beyond issues related to the rise of science.

Tara Nummedal has also identified a crucial role of alchemy in early modern society that goes beyond the confines of the scientific revolution. In *Alchemy and Authority in the Holy Roman Empire*, she examines the alchemical tradition using the previously untapped sources of court proceedings, legal contracts, literary satires, assaying houses, and paintings that provide an unprecedented portrait of the life and work of alchemists in the Holy Roman Empire. Nummedal's study examines the complex matrix in which alchemists sought to establish and defend their legitimacy when it was threatened by *Betrüger*, or fraudulent alchemists—even when the accusation of fraud itself was contested.<sup>44</sup> This groundbreaking study embraces the complexity of the intellectual, cultural, and social milieu in which early modern alchemists worked.

*Alchemical Belief* is not a history of science, still less a history of alchemy. As the title makes clear, this volume is a history of belief.<sup>45</sup> It is not concerned with the specific practices of alchemy or the degree to which they contributed to the scientific revolution. The case studies that follow examine the religious and philosophical significance that alchemists attributed to their work within the political and religious contexts of their day. As much as possible, these case studies place the alchemical writings of the adepts within the context of their entire oeuvre. The goal of this study is to achieve a more nuanced appreciation of the religious culture of early modern English society. In short, these case studies attempt to explain why an individual might believe in alchemy in early modern England.

The historiography on alchemy has, unsurprisingly, exposed differences in approach and emphasis. In recent studies, William Newman and Lawrence Principe have established themselves as the preeminent historians of alchemy in England. In *Alchemy Tried in the Fire*, they examine the notebooks of George Starkey and Robert Boyle and argue that their alchemical work was rigorous and methodical and can stand up to any work of natural philosophy in the second half of the seventeenth century. In a startling departure from the passive quality of virtually all historical studies, they reenact the experimental work that Starkey and Boyle conducted, demonstrating not just historically but empirically, in a modern laboratory, the actual reliability and predictable methodology of Starkey's and Boyle's alchemical work.

Newman and Principe have also written a powerful account of how spirituality crept into the study of alchemy, and their critique of this trend deserves serious attention. Surely their critique of the laudatory work of Margaret Atwood and Ethan Allen Hitchcock in the nineteenth century, and of Arthur Edward Waite in the twentieth, is valid. Equally valid and convincing is their argument

that the Jungian approach to the study of alchemy has produced anachronistic conclusions.<sup>46</sup>

Some of their other criticisms are more problematic.<sup>47</sup> They suggest that the religious imagery employed by early modern alchemists functioned “as a source of tropes and imagery for rhetorical embellishment or didactic exemplification rather than as an inherently spiritual exercise which elevates the practitioner by some esoteric illumination.”<sup>48</sup> This observation does not appreciate that virtually all early modern acts of piety and devotion were intended to elevate “the practitioner by some esoteric illumination.” Esotericism, though, was hardly a requirement. Piety and devotion could arise from the most mundane acts. Across the broad spectrum of Christian practice in late sixteenth- and early seventeenth-century England—whether listening to the ubiquitous antipopery sermons, praying, reading, and following the strict discipline of thousands of devotionals, or even repairing altar rails and sprucing up sanctuaries after decades of neglect—the goal of pious work and devotion was to narrow the gap between humanity and God, to lift individuals to a higher plane of illumination.<sup>49</sup>

Esotericism, however, did not preclude acts of devotion, nor did it necessarily diminish the significance of these acts to their practitioners. Indeed, Gerard Groote (1340–1384), the founder of the late medieval piety movement, the *Devotio Moderna*, was an alchemist early in his life, and although he later shunned his worldly possessions, he continued to believe “that the devout practice of alchemy led to the redemption of the soul.”<sup>50</sup> At least some alchemists believed that alchemy correlated with the central doctrines and liturgy of the Church of England. Robert Schuler identifies no fewer than three distinct religious strains in seventeenth-century alchemical literature: Church of England, orthodox Calvinism, and the dissenting Familist doctrine.<sup>51</sup>

Further, while *Alchemical Belief* does not make claims beyond the alchemists studied, hopefully it will be clear that alchemy was not simply a metaphor or a trope for adepts but a very real tool that they used to help them to understand and negotiate the world around them, a tool particularly helpful in defining and explaining elusive but crucial doctrinal beliefs such as the Trinity, the presence of God on earth, and the resurrection of the dead. However, even if alchemy was a metaphor—and surely it was for some practitioners—its religious significance is not diminished. From its very beginnings, Christianity used metaphor in making theological or spiritual points. Christ’s parables and the apostolic letters are filled with similes and metaphors intended to convince their readers of the truth of Christianity and instruct them in following that truth. Christ compared faith to a mustard seed (Matt. 17:20), and Paul reminded his followers that they understood the world only dimly, as through a glass darkly (1 Cor. 13:12). When alchemists turned to metaphor, they called upon a tradition as old as Christianity itself.

In their taxonomy of alchemical inquiry, Newman and Principe identify “the little-recognized school of ‘supernatural alchemy’ which seems to have developed in seventeenth-century England.”<sup>52</sup> This “supernatural alchemy” promised to bestow upon skilled practitioners monumental intellectual, medicinal, or spiritual powers. While the alchemists we will encounter probably fall into this category, such a discrete partition presupposes the relevance of a particular alchemical approach to its contribution to the scientific revolution. While alchemy was certainly a part of the scientific revolution, *Alchemical Belief* assumes that it was part of much larger religious and political contexts. Further, while alchemists occasionally used the term “supernatural,” they used language such as “divine,” “sacred,” and “heavenly” just as often, if not more so. This study investigates how and why individuals who inhabited the traditional center of English ecclesiastical and political power, or supported those who did, believed in the relevance of alchemy during the revolutionary decades 1600–1650, when their society, their government, their careers, and in some cases their very lives were at stake.

The alchemists we encounter differed in their approaches to the study and practice of alchemy. Although they shared some basic assumptions, collectively they cover a fairly wide spectrum of alchemical beliefs. While these case studies do not purport to be exhaustive, much less definitive, they reveal the subtle but evident role of alchemy in seventeenth-century English society. A study of the beliefs associated with alchemical processes provides insights into how and why these individuals attempted to resolve the controversies their society faced. The explorer, historian, and doomed courtier Sir Walter Raleigh observed in his *History of the World* that “Magus is a Persian word primitively, whereby is exprest such a one as is altogether conversant in things divine. And (as Plato affirmeth) the Art of Magicke is the Art of worshipping God.”<sup>53</sup> Seventeenth-century English alchemists agreed with Raleigh and turned to their particular “magicke” not only for purposes of personal worship but as a result of their belief in the potential of alchemy to demonstrate the continuing presence of God to an intellectual community that was beginning to call into question all previous religious and philosophical assumptions about the universe.

Alchemical texts, both printed and manuscript, are the foundation of this study. *Alchemical Belief* views them not only in the context of early seventeenth-century intellectual thought and religious belief but also in the context of contemporary political tensions. Alchemy and natural philosophy in the sixteenth and seventeenth centuries did not simply study the physical world but examined God’s providence and provenance. Seventeenth-century English alchemists appropriated Renaissance syncretism. Paracelsianism, with its emphasis on imagination, was melded with Jewish mysticism, particularly the Cabala, and the result was a

Judeo-Christian vision of alchemy and the occult. Prophecy and natural theology led the alchemists examined in this book to extend the boundaries of Calvinist and Anglican orthodoxies to their farthest reaches. They debated whether the Book of God (the Bible) or the Book of Nature (the natural world) was the more perfect. Some saw alchemy as a physical process that confirmed God's presence on earth—almost an occult incarnation. Their writings show how these adepts believed God veiled and revealed the secrets of his creation.

The constitutional monarchy the English finally settled upon in 1689 was the result of nearly two centuries of political strife, polemic, and bloodshed. It is because of this accomplishment that in Western Civilization courses, late seventeenth-century England is usually noted as one of the first “modern” states. Yet such an assessment, while correct in one sense, is also anachronistic. The architects of seventeenth-century English society were not concerned with contributing to “modernity”—far from it. They believed that the salvation of English society rested upon their efforts to re-create an Edenic paradise based upon an imagined golden past, an ideal gleaned sometimes from the Bible, sometimes from ancient and medieval sources, and sometimes from legends and stories they themselves created.<sup>54</sup> As much as Francis Bacon, Thomas Hobbes, and John Locke differed in their perceptions of ideal government, all of them attempted to attune governing with God and the forces of nature. They too believed that it was critical to align human endeavor with the natural world.<sup>55</sup> Only then would political stability and prosperity be achieved; only then would heaven be made on earth.

There was, however, an occult side to the story of science, belief, and governing in the seventeenth century, but in order to tell that story we must examine the alchemical literature of the time with the imagination that its seventeenth-century readers exercised. In a postscript to *Fasciculus Chemicus*, the first alchemical text he published, Ashmole wrote that he hoped his work would be the thread that would conduct his readers “through the delusive windings of this intricate Labyrinth.” The seventeenth-century world of belief is labyrinthine indeed, and fraught with perils from its own Minotaurs. However, the obstacles inherent in alchemical studies did not deter Ashmole and numerous others from combing through alchemical literature to find the secrets of the philosophers’ stone. Alchemy preoccupied some of the most learned minds and devout hearts of the day. To understand the intellectual history of the seventeenth century, we must follow the path of faith and belief wherever it leads, even, perhaps especially, when it is marked with occult signposts.

THOMAS TYMME AND NATURAL PHILOSOPHY:  
SCHISM AND ALCHEMICAL UNITY IN THE BOOK OF NATURE

Reverend Thomas Tymme was probably a local figure of note (and a figure of fun) as he hurried along the labyrinthine streets in and around St. Paul's Cathedral in late Elizabethan London. This learned but odd and fretful clergyman surely talked with the neighborhood shopkeepers, artisans, journeymen printers and booksellers, and even more surely preached to them in his parish dedicated to Saint Anthony (and subsidized by St. Paul's). He preached about the perils of sin to their immortal souls, about how only daily prayers and humble obeisance to God would keep their souls safe from evil. Most provocatively, he preached on how their nation was coming to ruin because of the increasing presence and influence of Puritans, Presbyterians, Brownists, Familists, and the whole panoply of dissenters from the official Church of England.<sup>1</sup>

Tymme wrote on these matters, too. That Tymme's parish was located near the impressive spires of St. Paul's placed him in one of the centers of London's lively printing industry. His concern about the threats to orthodoxy and his proximity to printing houses provided him the opportunity to warn those beyond his parish of the many dangers of what he believed was their dissolute culture. In *A Preparation against the prognosticated dangers of this yeare* (1588), he proclaimed that England would fall to the heathens because of its moral decay. Like a sixteenth-century Jeremiah, Tymme castigated his people, but rather than warn of a looming threat from Babylon, he prophesied that the English people had been blessed with a great queen for thirty years, and yet, because of their unrighteous behavior, God "will give us a king in his wrath, which shall be a scourge unto us." Because of humanity's sins, God's wrath did not end with the flood: "What was the cause that the olde world perished in that generall destruction of the floud, (wherein onely Noah and his familie were preserved) but the contempt of Noah his preaching? what was the cause that fire and brimstone fell from heaven upon Sodom & Gomorha, and utterly consumed them, and the people that dwelt in them, and made

that fruitfull plaine countrie (which was Eden, the garden of the Lord) a salt sea, but the abominable wickedness of those sinnes, and their obstinate contempt of Lots admonition?"<sup>2</sup>

This was just one of many prophetic clarion calls that Tymme trumpeted during his long and curious life. The late 1580s and 1590s witnessed the publication of several of his prophecies from London presses. His first treatise, *The figure of Antichriste*, appeared in 1586, followed two years later by *A Preparation against the prognosticated dangers*. In 1592 he sounded another warning in *A plaine discoverie of ten English lepers*, and in 1605 his most famous work, *A Silver Watch-Bell*, appeared. Although *A Silver Watch-Bell* was essentially a devotional book, a chapter titled "Concerning the Generall Day of Doome" revealed his continued interest in prophecy and apocalypticism. *A Silver Watch-Bell* was also his most popular publication, going through nineteen printings. What bound all of these treatises together was his fear of schism in England's religious culture and society.

As we follow Tymme's publications beyond the 1580s and 1590s, however, his concerns about what ailed England appear to vanish. In 1602 he wrote but did not publish a commentary on John Dee's alchemical study, the *Monas Hieroglyphica*, titled *A Light in Darkness*.<sup>3</sup> In 1605, the same year in which *A Silver Watch-Bell* appeared, he completed an English translation of Joseph Duchesne's Latin Paracelsian alchemical text, *The Practise of Chymicall, and Hermeticall Physicke*.<sup>4</sup> Nothing else appeared from his pen until 1612, when he wrote his longest and most complex work devoted to alchemy, *A Dialogue philosophical. Wherein natures secret closet is opened and the cause of all motion shewed*. Although he published one more devotional work in 1618, by 1605 Tymme appears to have turned virtually all of his prophetic and spiritual energies toward the study of natural philosophy, especially alchemy.<sup>5</sup> Why?

Although it may appear that Tymme's interests changed over the years, his alchemical writings should be understood as a continuation of his religious and political interests and beliefs rather than a departure.<sup>6</sup> His greatest concern was to preserve the unity of Christendom—at least in England—embodied, in his view, by the Church of England. While England certainly had foreign concerns, and although English soldiers were engaged in the Netherlands, France, Spain, and Ireland, for Tymme the greatest menace lay *within* the realm. The division or, as he frequently called it, the "schism" created by dissenting Protestants was the most dangerous threat England faced.

By the early seventeenth century, Tymme was arguing that alchemy could summon divine forces that would bring unity and cohesion to England's religious culture. An Anglican clergyman, he believed that God was revealed in *sola scriptura* and that salvation depended upon predestined and immutable divine election. However, his alchemical studies led him to believe that although God's word



was revealed in sacred scripture, it might also be secreted in nature. Natural philosophy might reveal those secrets, with wondrous consequences for the redemption of humanity. Alchemy might even reveal God's providence for humanity.

At the very least these may appear to be unusual if not unorthodox ideas for an Anglican clergyman.<sup>7</sup> Indeed, he turned to alchemy to demonstrate the "proof" of that most orthodox Christian doctrine of all: the Trinity. In studying Tymme's alchemical and religious writings, we can begin to appreciate the lively nature of the Elizabethan and Jacobean church, belied by the Book of Common Prayer and concerns that dissenting believers raised within the English church decades before this conflict erupted into civil war—as well as the equally vibrant nature of the London book trade—and we can see how Tymme was able to use this new instrument quite effectively. In Thomas Tymme we see ministerial and alchemical careers converge almost seamlessly.

### The Foundation of Tymme's Historical and Religious Studies, 1570–1592

Tymme wrote prodigiously, and the breadth of his work is impressive, especially given how little we know about his education and training. Although the date of his birth is unknown, his first publication appeared in 1570 and he died in 1620, so we can surmise that he was born in the early to mid-1550s. He studied at Cambridge, possibly at Pembroke Hall, although there is no record of his graduation.

Cambridge was a major center of Protestantism in sixteenth-century England, Pembroke Hall especially so. Gabriel Harvey called some of the more prominent Protestant reformers of the era—Nicholas Ridley, John Bradford, and Edmund Grindal—"the late ornaments of Cambridge and the glory of Pembroke Hall."<sup>8</sup> Tymme sought Grindal's patronage in later years, and his history with Pembroke may explain why. When Grindal studied at Pembroke in the early 1530s, he was exposed to the new theologies of Peter Martyr, Johannes Brenz (sometimes spelled Brentz), and Heinrich Bullinger.<sup>9</sup> Although nothing in Reformation England was theologically uniform, still less monolithic, Tymme's education probably took place in a college that had entertained and discussed Reformed theology in the early days of the English Reformation.

Tymme's name first appeared in print as the translator of Latin Protestant commentaries. In 1570 he translated Johannes Brenz's commentary on the Hebrew scriptures, *Newes from Ninive to Englande*. Brenz (1499–1570) was a Lutheran reformer and humanist, notable more for his organizational contributions to the Protestant movement than for original theological expositions. That said, English divines admired his work, and Edward VI gave Brenz's work his official sanction.<sup>10</sup> The 1570s also witnessed Tymme's translations of the Huguenot pastor Augustine

Marlorat's commentaries on the four Gospels.<sup>11</sup> Marlorat (1506–1562) was trained as a Bourges monk but began preaching the Reformed message in 1533. Forced to flee to the securely Calvinist cantons near Thonon and Lausanne, Marlorat earned his Calvinist credentials as a pastor and preacher, roles in which he served for more than twenty-five years. Yet it was not until 1559 that he and six other former monks were judged worthy of returning to France to preach the Reformed confession. Marlorat served briefly in Paris but was moved to Rouen, where he established himself as a prominent exponent of Calvin's message. Marlorat enjoyed a brief period as Rouen's leading pastor when Protestants seized the city in April 1562. Rouen quickly fell to Catholic forces in the autumn of 1562, during the early months of the French wars of religion. The restored Catholic officials used Marlorat's preaching as clear evidence of his sedition: He was condemned and met his grim end, along with five fellow Protestant officials, in October 1562.<sup>12</sup> In the 1570s Tymme also completed translations of Calvin's commentaries on Genesis and Corinthians, and also all four volumes of the Huguenot historian Jean de Serres's history of the French wars of religion.<sup>13</sup>

Finally, in 1595, Tymme translated the Dutch author Christiaan van Adrichem's Latin treatise *A Briefe Description of Hierusalem*. This text uses the Bible as a sort of Baedeker's guide to Jerusalem and includes a map of the holy city, meticulously drawn, with landmarks identified and described. For example, "The Pallace of Pilate" and "The Sepulcher of David" are located and described according to biblical references. Despite its informative nature, Tymme made it clear that this was a properly Protestant treatise. He explained in his dedication that although Van Adrichem was Catholic, and "hath left behind him sum rubbish and reliques of the Romish superstition," Tymme had "in some measure purged and swept the streets and corners of the same, with the broome of truth."

All the while he was translating this decidedly Reformist literature, he was serving as rector of St. Anthony's parish, sustained by the patronage of the dean and chaplain of St. Paul's Cathedral, a position he held until 1592.<sup>14</sup> Thus the early years of Tymme's adult life were devoted to placing no fewer than ten very large, very erudite volumes of Reformed theology and scholarship before the English reading public. The histories in particular educated Tymme on the cataclysmic consequences for a polity divided by religion. It was an education that shaped his perceptions of what constituted a stable commonwealth for the rest of his life.

In the 1580s Tymme began to write of his growing concerns about schism within the English Christian community, beginning in 1586 with *The figure of Antichriste, with the tokens of the end of the world*, a gloss on 2 Thessalonians. This treatise reflected Tymme's interest in the general stability of the Christian Church in its earliest days and, more specifically, his concern with enthusiastic apocalypticism.<sup>15</sup> He differentiated between the true church and "a Church gathered together

in the Divell; as in the malignant Church.” What made the church true, though, was quite unexceptional, in Tymme’s view. “This Epistle was in the first beginning dedicated to that Church,” he wrote, “which in Thessalonica agreeing in the unities of faith, worshipped one God the father, and the Lord Jesus Christ, and which stedfastly beleaved the promises of the Gospell, that in them alone is conteyned the doctrine of Christian righteousnesse, and of eternall life.” He concluded that the true church depended on the belief that God the creator and Christ were equal to each other—pretty basic stuff in an era in which the finest doctrinal lines created a dizzying array of dissenting sects. In contrast to the fractured religious culture of England in the 1580s, he wrote about “the holy unities of the body of Christ,” and about how communion and fellowship benefited each member of the church and thereby the whole church. Therefore, in addition to praising God’s benefits, “we must always have respect unto the universalitie of the Church.”<sup>16</sup>

What was exceptional was how conciliatory Tymme believed 2 Thessalonians commanded the Christian church to be. He acknowledged that of course Christians were bound together by kinship, friendship, society, and custom, but the limits of the community extended far beyond these obvious ties: “He also shalbe [*sic*] our neighbour which standeth in need of our helpe whatsoever, although he be not a Citizen with us, a fellow, a cosin or any other way joyned unto us: even as that man was which fell into the hands of theeves.”<sup>17</sup> Now, here was a conciliatory clergyman.

In *A Preparation against the prognosticated dangers* (1588), after a thundering critique of the English, Tymme calmly urged that his brethren be more humble and devout and begged them to “imbrace christian unity and concord.” Such unity would make them “invincible against all our enemies that seeke to invade us.” Further, he encouraged his readers to beware of discord. He referred to biblical and medieval chronicles of conflicts between emperors and popes and kingdoms, blaming even the Scottish liberation by Robert the Bruce on civil discord. Because God had given the English one commonwealth and one church, their salvation lay in setting aside their differences and seeking peace and concord within.<sup>18</sup> By the time this treatise was printed, Sir Francis Drake had already defeated the Spanish Armada, but the unified defense against foreign invaders contrasted sharply with the divided religious community at home.

One particular division occurred mysteriously in print. Beginning in October 1588, the first of six anonymous tracts appeared in London bookstalls that have come to be known as the Martin Marprelate tracts. These books, along with an additional broadside, attacked the “popish” structure of the Church of England and defended the decentralized hierarchy of Presbyterianism, which allowed for local control of individual parishes. The tone of the treatises ranged from gently chiding to blisteringly satirical. Although no one admitted to writing the tracts,

several individuals were prosecuted—though no one was executed, either because they submitted to Elizabeth’s mercy or simply died in prison.<sup>19</sup>

The Martin Marprelate tracts received a vigorous response in defense of the ecclesiastical state, including Matthew Sutcliffe’s *An Answer to a Certain Libel* (1592), Gabriel Harvey’s *Pierces Supererogation* (1593), and Tymme’s *A Myrror for Martinists* (1590). The title page of *A Myrror for Martinists* identifies the author as “T. T.,” which led to the treatise’s being misattributed to Thomas Turswell and to Thomas Nash, the notable Elizabethan satirist. Leland Carlson has pointed out that Turswell died in 1584 or 1585.<sup>20</sup> And although Tymme was not without wit, he could not approach Nash in that respect.<sup>21</sup> Carlson suggests that Tymme was the author, and he is surely correct.<sup>22</sup> In addition to the similarities in language and rhetoric, Tymme’s *Preparation against the prognosticated dangers* and *A Myrror* were both published by John Wolfe. Further, this was a topic and position Tymme had been studying for many years; it is practically inconceivable that he did not write it.<sup>23</sup> Finally, the author of the 1606 and 1608 editions of Tymme’s *A Silver Watch-Bell* is identified only as “T. T.”

True to his earlier cause, it was not so much the Martin Marprelate tracts that Tymme attacked as the problem of schism. In the preface he warned that the oldest human flaw is mistaking falsehood for truth. Just as the serpent deceived the first human beings, he asked, why should they not also see the devil at work when surrounded by “Papists, Heretiques, Brownists, the familie of Love, Martinists, and all Schismaticques, which never cease perverting the truth?”<sup>24</sup>

Yet in restraining the dissenting forces of Presbyterianism and other sects, Tymme also distanced himself from polemicists like Sutcliffe and Nash, observing that although he agreed with them, they “handle it not so charitably and modestly as it requireth” (A3r). His desire to avoid polemic extended even further; he later pointed out that the divisions within the English religious community were particularly problematic because “Papists” could rightly accuse Protestants of hypocrisy in claiming to return to the true religion while in fact continuing to divide it, perhaps even to the point of self-destruction (23–24). Earlier in his text, he allowed that sometimes schisms and divisions could lead to good, citing Abraham’s departure from “Caldea,” Lot’s from Sodom, John the Baptist’s from “the Levitical Priesthood,” “Paul departing from the Scribes and Pharesies: the Gentiles converted from the Jewes: and we, from the Church of Rome: For Christ came not to send peace, but a sworde, and to severe men from their owne household” (4).

It was also evident to Tymme that no such good could come from the present schism, which was pernicious in its effects. When he detailed the evils of schism, he shifted metaphors as awkwardly as a student driver learning to drive a five-speed. He began with the rather gruesome image of a healthy body, but “some members being purtrified and defiled are departed awaie.” This situation

destroyed both, because the healthy body was “after a sort ruined,” and the parts that were separated perished. “They that separate themselves in this kinde of Schisme,” Tymme wrote, “what other thing do they but rip up the seamlesse coat of Christ, and breake the limites he hath set?” (4). He later compared the present schism to the Tower of Babel, the various sects “confounded in their worke, building by presumption a tower of fonde conceit to themselves, and are by the just plague of God so divided therein, that some are Anabaptisticall Brownists, some libertine Family-lovists, and some (beside other sectes) malecontent Martinists” (7). Whether his metaphors were anatomical, legendary, or biblical, he would not dignify the menacing schisms of his day with comparisons to the past.

Tymme’s almost cool distance from the controversy, his ability to distinguish between relevant and irrelevant historical precedent, resulted in part from his own sensibilities and training and also his clerical profession. For it was in this tract, surely more than in any other he had written or would write in the future, that he spoke as much as a representative of his parish as he did for himself. He wrote of how “the godly and faithful” both felt and feared the danger of schism and complained of it to their ministers (8). Although these kinds of problems were not new, what was new was how contemporary Christians responded. Early Christians, he said, had not allowed one brawl to lead to another but replied to their differences “by admonition, by friendly communication and brotherly conference” (12). Even as divided as the church at Corinth was, Paul never abandoned it—but that was precisely what the English dissenters were doing (27). The “schismatiques” of his day were a plague, he charged, like the locusts of the apocalypse, dividing households, laying waste to what was once healthy and vibrant (B<sub>3</sub>).

Tymme’s religious community lacked the unity that he believed the early church possessed. Unity for him began with a coherent expression of the most basic tenets of Western Christianity, whether Roman Catholic, Reformed, Lutheran, or Church of England: “there is one God, one Faith, and one Baptisme: one Christ, one holy Ghost, one onely true religion” (14). It was essential to cleave to these tenets; otherwise, the church would be split into “infinite religions,” and individuals would establish churches based upon their own imagination (14). More significantly for Tymme, though, was his belief that the foundations of the church began with a bond that existed in the spirit, word, sacraments, and redemption of Christ. He cited Bernard of Clairvaux’s plea for unity, adding that neither fasting, nor vigilance, nor prayer would affect the devil, but unity would, because it was his separation from the angels that left Satan isolated—this was the best way, the only way, Tymme could convince his readers “that the earthly Jerusalem, is builded as a citie that is at unities in it selfe” (29–30).

Two years later, in 1592, Tymme published *A plaine discoverie of ten English lepers*. These lepers, however, were identifiable not by the condition of their skin but

by the consequences of their actions. He listed the church robber, the simoniac, the hypocrite, the proud man, the glutton, the adulterer, the covetous man, and the murderer among the ten. The first leper, though, was “the Schismaticque.”

Tymme scoffed at the notion that dissenters claimed to have scriptural authority for their beliefs, sneering, “as in the primative time of the Church, no heresie was so bad, but that it would relie upon one Scripture or other.” He proceeded to note that the heresies of late antiquity, as well as adherents of Arianism, Montanism, Manichaeism, and the Familists and other dissenters of his day all pointed to scripture to justify their beliefs.

The divisions of schism could be healed, Tymme claimed, if people would acknowledge that no church was or ever could be free from blemishes. The most appropriate place for the church was the center of a defined circumference: “in religion there is both a centre & a space. Although it be best to be in the centre, yet if we be not out of the space we be well.”<sup>25</sup> And in a rare, possibly a singular moment of scatological language, Tymme continued: “Out of the space is too bad, like as it is to be out of the But. What madness is it then in those men, who because they cannot be in the prick, wil not be in the but neither. This was at one time Peters extremity, *Lord* (saith he) *thou shalt never wash my feet*: and incontinent he desireth Christ to wash both feet, head, hand, & al. We must learn to keepe a mean, and sometime to tollerate imperfections” (C2r). Tymme closed his immodest analysis with a sobering consideration of the consequences of schism. He said that schism should be approached with the gravity of a father, and that when things were not as they should be, they should be amended, or if not amended, then taken away, or if not taken away, then accepted with resignation. Or, as Tymme put it, we can only “suffer and sigh. Contention in this case helpeth not, but rather hurteth, and offendeth both God and good men” (C2r-v).

While the first leper was the schismaticque, the tenth—the murmurer—was almost as menacing. While Tymme of course condemned those who “murmured” against God when dissatisfied with their lives, he spilled more ink attacking those who murmured against the civil government and ecclesiastical authorities. As if anticipating James VI’s 1598 *True Lawe*, he wrote unequivocally that “Kings, Queenes and other princes, are ordained of God, are to bee obeyed and honoured of all persons without exception” (Mv). Even if a monarch was “wicked and tyrannous,” the subject was still obliged to obey without murmuring (M2r). He reminded his readers that the first murmurer was Lucifer; more to the point, the English chronicles swarmed with murmuring rebels (M2r). To refuse to pay tribute to the civil authorities or to do so grudgingly left one open to God’s wrath.

Between 1586 and 1592 Tymme wrote and published four treatises warning of the danger of civil discord, but he also reassured his readers that unity was possible if they were willing to concede that, as there was only one God, there could

be only one church. When he rose to his pulpit and preached to his congregation, when he sat at his desk and wrote of his concerns, when he urged his listeners to relinquish their desire for churches that suited their individual “fantasies” and embrace the church that gathered together all English believers, when he hurried to the print shops and watched as they turned his manuscript into hundreds of printed copies, Tymme if nothing else established himself as a consistent voice of spiritual conciliation and ecclesiastical order. Still, for the next ten years Tymme would watch his beloved kingdom and his beloved church drift even further away from the goal of a unified religious community. Although he remained silent on the increasing influence of dissenters in the 1590s, it gradually became clear to him that he would have to take matters into his own hands.

### Tymme’s Alchemical Unity

In a departure from his earlier years, Tymme went largely silent in the decade 1592–1602. Whatever else consumed his time and energy during those years, we can say with some confidence that one subject he studied was alchemy. For in the years between 1602 and 1612, Tymme produced three alchemical treatises that spoke to new questions that were also tied to his former concerns. His foray into alchemical studies must have begun sometime before 1602, when he wrote his earliest extant alchemical treatise, *A Light in Darkness*, an explanatory postscript to a translation he proposed to make of John Dee’s *Monas Hieroglyphica* (1564), a translation that is no longer extant.<sup>26</sup> All that survives are two manuscript versions of his postscript, one in code and one in English, both in Elias Ashmole’s hand.<sup>27</sup> *A Light in Darkness* was to be an explanatory guide for readers of Dee’s text, but all we have is a manuscript that is a fragment of his great plan.

In the *Monas*, Dee attempted to decipher the Book of Nature.<sup>28</sup> The notion of the two books, one the scriptural word of God, the Bible, and the other, the Book of Nature, was commonplace in the sixteenth century. More to the point, sixteenth- and early seventeenth-century scholars did not perceive the two books as dichotomous or as opposed to each other but as complementary. Kathleen Crowther-Heyck argues that natural histories were written and read in the assumption that the natural world and the divine were suffused with each other, such that to study one was to study the other.<sup>29</sup> For Dee, perhaps, the *Monas* extended beyond simply studying nature to controlling it as well. In Urszula Szulowska’s words, it was “a linguistic alchemy, since by manipulating this sign [the *Monas*] the magus can control nature.”<sup>30</sup>

In his “Fore-speech to the Reader,” Tymme spoke precisely to this suffusion of the natural world by the divine. He wrote of how God had endowed Adam

with knowledge of the secrets and natural reason of the universe; this was how he could name the animals, “agreeing with their nature and kind.” Even after the Fall, although his knowledge was “weakened,” he nevertheless invented “Arte,” which enabled him to build “two Tables of Stone” in which he engraved his knowledge of natural philosophy, “not in letters (which were not then known) but in Hieroglyphicall characters.” These tables contained the knowledge that might have prevented the “generall Deluge.”<sup>31</sup>

We also learn that while one table was lost in the flood, one survived at the foot of Mt. Ararat, and on this table the astronomical knowledge of the universe was inscribed. “At length,” Tymme wrote, “this universall knowledge in naturall Philosophie, particularly drawne into sundry parts, was in force deminished, in such sort that such separacion made one an Astronomer, another a Magitian, a third a Cabalist, and a fourth, an Alchemist.”<sup>32</sup> Knowledge, once unified and whole, was now divided, disparate, and lost.

Or so it might seem. In the remainder of his foreword Tymme explained how this knowledge remained intact and how it led to a unified understanding of God’s creation. He wrote of how “that Vulchanicall Abram Tubalcain the Astrolgian & greate Arithmatitian went out of Egypt, into the land of Chanaan, by whose meanes Egypt wan greate fame.”<sup>33</sup> The author of Genesis tells us that Tubal-cain was the son of Lamech and Sella, who “wrought cunningly every craft of brasse and iron” (Gen. 4:22, Bishops’ Bible). Moshe Idel points out that because Tubal-cain was believed to be the inventor of weapons, and made them available to those willing to use them, he was read as the agent of violence.<sup>34</sup>

However, Tymme clearly saw Tubal-cain in a more benevolent light. In describing him as “Vulchanicall,” he seemed to see Tubal-cain as a Christian analogue of Vulcan, the god of metalsmiths and forgers. Raphael Patai suggests that Tubal-cain’s renown with alchemists was not simply because he invented labor at the furnace, but because he was the transmitter of figures, *formas hieroglyphicas*, that presumably revealed the secret of the philosophers’ stone itself.<sup>35</sup> In calling him an “Astrolgian & great Arithmatitian,” Tymme presumably referred to Tubal-cain’s invention of metallurgy and metals’ long-standing relationship with the planets and stars.

Tymme explained how alchemical knowledge had been preserved and transmitted from antiquity, beginning with Moses and Daniel. He reminded his readers that Moses was educated by the Egyptians and that this was how he had learned “these Scyences,” while Daniel, who lived among the Chaldeans, “became a perfect Cabalist, the wisdom of Gods spirit dwelling in him, whereby he expounded these misticall words Mene Mene Tekel Upharzin.”<sup>36</sup> We learn that this “extraordinary wisdom” was given to Persian priests who “walked in his Commandments,” and it was from this lineage that the magi who brought Jesus gifts



from the East were descended. He noted that the Egyptians excelled in this secret knowledge and that because “Hermes, who lived about Moses tyme, was truly called Trismegistus,” he too obtained this knowledge.<sup>37</sup>

At this point Tymme broke from his narrative and turned directly to an explanation of alchemy: “Alchimy is a Science, whereby the principles, causes, properties and passions of all Metalls that are thoroughly knowne & discovered and by which those Mettalls that are imperfect and corrupted, are altered and changed into true & perfect Gold. That this is no fable nor deceitfull Imaginacion, is thus proved.” Indeed, that is precisely what he set out to do: to prove that alchemy was not a fable. Anything that could be ingested, and “any impure thing,” could be digested and purified. He made a passing reference to Aristotle (“The Major and Minor are plainly proved by thee saying of the Philosopher in the 4 chap. of Metheors, concerning the Digestion of Opsesis and Epsesis, and likewise in the 2 chap. of Generacion and Corrupcion”), and with this succinct proof now before his readers, he averred, “Againe the certainty of this Science *is thus proved*” (emphasis added).<sup>38</sup>

Clearly, in the years in which Tymme appeared to have finished haranguing his audience, he had immersed himself in a new literature. He had long read histories, we know, but alchemical literature, Aristotle, and the *Hermetica* also surfaced in his work. Why he turned to alchemical and hermetic literature is not immediately clear, but at the very least we can say that he began to see loose correlations between elements of the alchemical process and aspects of Christianity. “In regard of the assurance of this Scyence,” he wrote, “the famous Philosopher Trismegistus before remembered wrote thus . . . ‘Do not all things flow from unity through the goodnes of One . . . what else springeth from Unity, but the Ternarie it selfe. The Unarie is simple, the Binarie is compound, & the Ternarie is reduceable to the simplicity of unitie.’”<sup>39</sup> His observation may have been written in the spirit of the *Hermetica*, but it was not in fact a direct quotation.<sup>40</sup> The more likely source was Dee’s preface to Euclid’s *Elements*, in which Dee made what might have been a loose reference to the Christian doctrine of the Trinity as “the Ternarie”: “And albeit these thynges be waighty and trutthes of great importance, yet (by the infinite goodnes of the Almighty Ternarie,) Artificiall Methods and easy wayes are made.” Also: “Which Ternaries, are eche, the Union, knot, and Uniformite, of three discrete and distinct Units.”<sup>41</sup> In Tymme’s glossary at the end of the document, he wrote, “By the word Ternarie is meant (as I conjecture) the first matter of the Philosophers stone, which are there in.”<sup>42</sup> In the context of this treatise, the Trinity and the philosophers’ stone were not mutually exclusive.

Before Tymme could unlock the secrets, he first had to learn how to use one of the keys needed to turn alchemical tumblers: hieroglyphics. Tymme’s discovery of the importance of hieroglyphics is evident in his early unpublished preface

to Dee's *Monas Hieroglyphica*, *Light in Darkness*, mentioned above, in which he studied hieroglyphics and incorporated them into his own epistemology. That Tymme turned to hieroglyphics should come as no surprise. Since the publication of Horapollo's *Hieroglyphics* in the late fifteenth century, interest in hieroglyphics in Renaissance humanist circles had grown. Hieroglyphics were thought to be not just symbols but Platonic ideas, the meaning of which could be perceived intuitively by the reader.<sup>43</sup> The meaning of these symbols was veiled to all but those who were divinely inspired to read them. Erik Iversen argues that "the true significance thus revealed was nothing less than an insight into the very essence of things, in fact their ideas, and the method involved, the ultimate understanding of the true nature of things made possible by an immediate contact between the human intellect and the divine ideas, was supposed to reflect and illustrate the dynamic process of divine thought."<sup>44</sup> There was a sense of both universality and timelessness associated with hieroglyphics. Sometime about 1453 Leon Battista Alberti noted that while letters of a language may dissolve with the passage of time, as had happened with the Etruscan language, the expression of knowledge through symbols was universally understood.<sup>45</sup> Indeed, in 1635 Francis Quarles observed in his book of emblems that "before the knowledge of letters, God was knowne by Hieroglyphicks; And, indeed, what are the Heavens, the Earth, nay every Creature, but Hieroglyphicks and Emblemes of His Glory?"<sup>46</sup> Alchemy was a highly inclusive tradition, and it is likely that Tymme's fascination with hieroglyphics grew out of the wide interest in them in the late Renaissance.

Referring to what he thought were hieroglyphics for sulfur and mercury, Tymme explained how these elements, used in an alchemical process, accorded with aspects of Christianity: "Therefore whosoever he be that will attaine to the Scyence of the greate worke in Alchimy, let him well consult & view this figure following, that he may bringe the Ternarie to unity."<sup>47</sup> He sketched out in the manuscript a triangulated set of circles, identifying one as "Bodie" and with the symbol for sulfur and the other two "Soule" and "Spirit," though he used the ideograph for mercury for both (see fig. 1). In the accompanying text Tymme explained cryptically that "unarie" was not a number but that all numbers were based on it. The "Binarie" was the first compound number, he said, thus establishing that "Number standeth upon order and measure."

Tymme again explained cryptically that "the Philosophers have called that ☉ [sulfur] the Body which according to naturall power, may be fixed: & with continuall perseverance, can constantly abide the tryall of fire." The ideograph for the soul and the spirit, however, was the same, despite what Tymme said were clearly differences between them. The soul was not nearly so steadfast as the body and could not abide trials by fire; indeed, it fled from fire. And yet "that Spirit, which being subtiled, dissolved, or moulten with fire, according to the natural

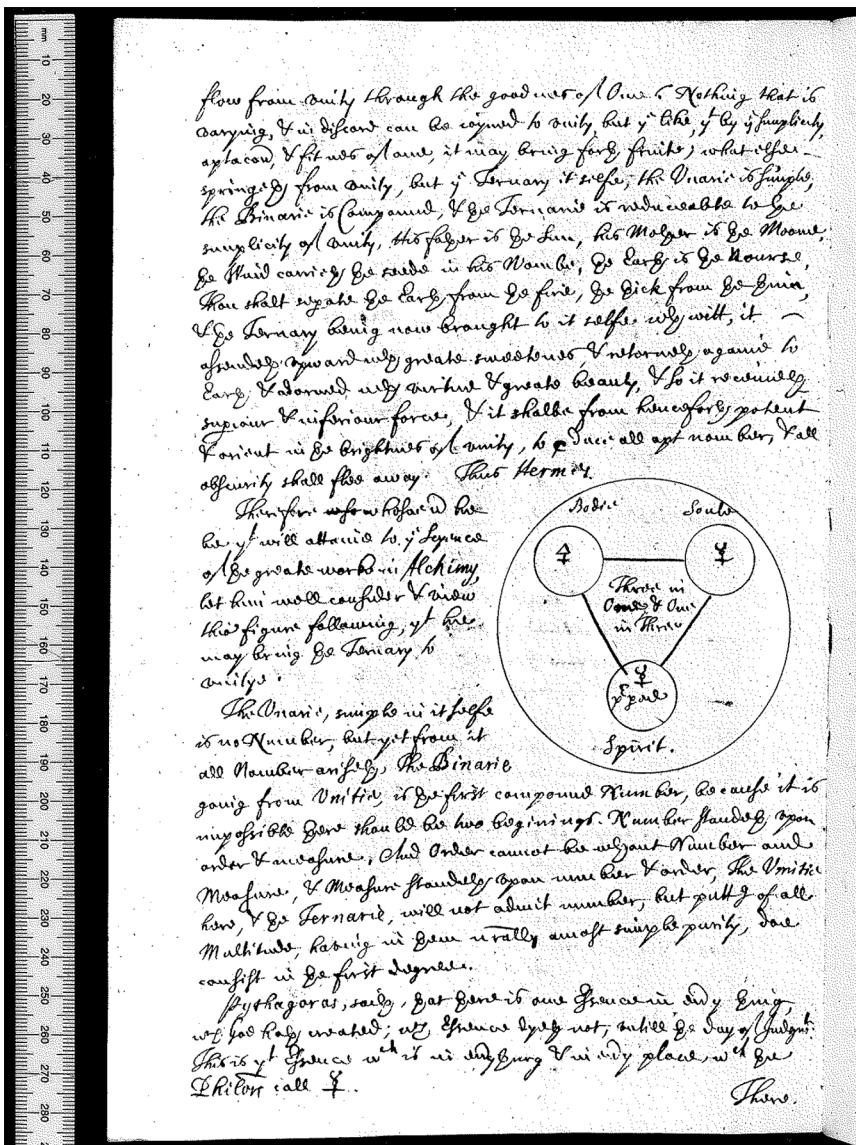


Fig. 1 Thomas Tymme's explanation of the Trinity according to alchemical elements in his *Light in Darkness*. Ashmole MS 1459, p. 475. By permission of the Bodleian Libraries, University of Oxford.

power thereof, hath ability to resoule the body with the Soule into vapour or of reteyning the Soule with the Body to the fiery tryall, if it vapour not." The spirit reconstituted and strengthened the soul; although they appeared to be similar and were in fact identified as the same, they were different, the soul completely dependent on the spirit: "Because the Spirit when it shalbe equall, maketh the Body to reteyne the Soule, and when it shalbe more, or stronger, it maketh the Soule to depart from the Body, and so it forsaketh the Body, for that without the Spirit, the Soule tarrieth not with the Body, neither is it seperated from the Body because it is the Bond of them both. And thus this one thing ☿ [mercury] is Body, Soule, and Spirit in divers respects." However closely this passage operated along alchemical principles, it clearly went beyond that to an instructive spiritual plane. After his brief discussion of lead, tin, iron, copper, silver, and, of course, gold, he observed that "this noble Science is the way to caelestiall & supernaturall things, by whiche the ancient Wisemen were led from the worke of Arte & Nature to understande, even by reason the wonderfull powre of God in the creacion of all things: & their finall purification by alteracion through fire in the day of doome."

Tymme did not think people should fear this "day of doome," for on this day "uncleane faeces & corrupcion" would be separated from the four elements and be made into a "Christalline cleerenes." He reassured his readers that nothing would be destroyed in a fire, because "God by his power will change all things & make them Christalline." For Tymme, alchemy literally demonstrated the truths prophesied in the scriptures but also evident in nature: "Demonstracion of these things is made here on earthe by this honest & holy arte."

Only now was it clear why alchemy spoke with such resonance to Tymme: "For whatsoever God hath created may be brought to a Christalline cleerenes, and the Elements gathered together into a simple fixed substance; which being done noe man can alter them, nor the fire it selfe burne or change them, but they shall continue perpetually in Eternity." The idea that "whatsoever God hath created" had the potential to be brought to a "Christalline cleerenes" (it was probably no coincidence that Tymme spelled "Christalline" with the root "Christ") meant that all aspects of God's creation had the potential to be redeemed. Once this transformation occurred, it could not be reversed and would endure for eternity.

In his dedication to Thomas Baker, Tymme wrote that his purpose was "not to procure you into the Laborinth of Alchymists practise, whereinto all that have entred with unwashen hands have hurt themselves, and then falsely exclaimed against the divine Science, as meere Sophisticall & deceitfull; but rather to allure you, to like that which my selfe doth love, & yet not doating as Narcissus did with the shaddow." His purpose all along, that is, was less instructional than inspirational. The practice of alchemy was only one part of the experience. Those who intended to study the art had to be properly prepared—otherwise they would fail

and conclude that alchemy was a sham. It was to be pursued for what it taught, not for what it promised.

In the surviving portions of *A Light in Darkness*, Tymme offered an explanation of how alchemical language accorded with, even “proved,” the complex theological notion of the Trinity. The Trinity was the sine qua non of Western Christendom—Reformed, Lutheran, and Catholic alike. John Calvin had directed the burning of Michael Servetus in 1553 because Servetus rejected the Trinity on the grounds that it was not scriptural. If Tymme was right about this alchemical “proof,” then the schism in Christendom that had preoccupied him so deeply earlier in life might be healed. No one was more aware than he of the divisive nature of scripture; he had mocked heretics who used the Bible to defend their heresies. In the years since, Tymme appeared to realize that natural philosophy—alchemy—might demonstrate essential orthodoxies of Western Christendom. Still, alchemy was not his only concern in the early years of the new century, for in 1605 he published the most popular treatise of his career.

On October 11, 1604, the *Stationers’ Register* recorded the entry for *A Silver Watch-Bell*.<sup>48</sup> Although it was not actually printed until 1605, *A Silver Watch-Bell* went through nineteen printings, the last in 1659, nearly forty years after Tymme’s death in 1620. Indeed, he continued to update the text as events dictated, adding, for example, an annotation on the Gunpowder Plot of November 1605 to the 1608 imprint.<sup>49</sup> *A Silver Watch-Bell* was Tymme’s longest and most ambitious work, and he returned briefly to the dangers of schism in this text.

Tymme’s preoccupation with schism also made an appearance in the other treatise he published in 1605, the translation of Duchesne’s *Practise of Chymicall, and Hermeticall Physicke*. In his dedication to Charles Blount he reassured his readers that alchemy was not concerned merely with the transmutation of metals, a common error, he noted: “For Halchymie . . . hath also a chyrurgical hand in the anatomizing of every mesenteriall veine of whole nature: Gods created hand-maid, to conceive and bring forth his Creatures.” Alchemy was God’s assistant, the “hand-maid” who responded to divine direction.

Alchemy demonstrated the power and wisdom of God. It imitated nature by separating salt, sulfur, and mercury from vegetable, mineral, and animal matter. By separating these elements, one “shal by that mystery, as in glasse, discerene the holy and most glorious Trinitie, in the Unitie of one Hupostasis Divine.” Although he understood the three elements as “divine,” he went further, referring to Paul’s letter to the Romans: “the invisible things of God (saith the Apostle) that is, his eternal power and God-head, are seene by the creation of the world, being considered in his workes.” A clergyman always sensitive to the prideful implications of such majestic work, Tymme again returned to scripture, reassuring his patron that “this Phylosophy therefore (my good lord) is not of that kind which

tendeth to vanity and deceit, but rather to profit and to edification, inducing first the knowledge of God, & secondly the way to find out true medicine in his creatures.”<sup>50</sup> Finally, his use of the term “Hupostasis” is significant. He was surely referring to the theological concept of “hypostasis,” the notion that Christ was one person who existed in two natures, human and divine. Thus, when he referred to the “glorious Trinitie” and “the Unitie of one Hupostasis Divine,” he meant something that was both a material *and* a spiritual manifestation of the divine—precisely what he believed alchemy could be at its best. If unity might be found in such different material elements, surely the same could be true for humanity.

Of course, as the first years of the seventeenth century testified, such unity had not been achieved. In 1603, by constitutional agreement, James VI of Scotland had ascended to the throne of England when Elizabeth died without an heir. Becoming now James VI and I, the founder of the new Stuart monarchy acquired a vaster kingdom, but with far greater problems than he had known in his Scottish realm. Although the intensity of the rising Puritan influence and Catholic threats from abroad had abated, they had bequeathed a legacy of bitterness and excruciating tension among dissenting believers in England.<sup>51</sup>

Tymme was sensitive to this situation. In his “Fore-speech to the Reader” in Duchesne’s alchemical treatise, he lamented that although theology rested upon the infallible foundation of scripture, “divers opinions and Sects” had arisen among religious leaders. This was not unique to Christianity, of course, and he knew that, noting that Jews had Pharisees, Sadducees, and Essenes. Then there were those who worshipped falsely, whom he described as “Turkes, Affricans, Tartars, Persians, Cataians, and Indians.” Indeed, even “Papists,” who claimed to have such unity, were divided into Dominicans, Franciscans, and Jesuits. Finally, within Protestant communities, Anabaptists, Familists, and Brownists had all sprung up. The same was true of philosophers, with their schools of Stoics, Peripatetics, and Platonists. Even physicians had “Empirics, Dogmatics, . . . and Paracelsians.”

The reasons for such disparate approaches to crucial concerns were the oldest ones of all: human error, carnal desires, individuality, and, of course, envy, pride, and ambition. As sensitive as he was to the destabilizing effects of these divisions and sects, Tymme believed he had a solution, and he even playfully made himself personally a part of it: “But some of these ayming at perfection, and having the advantage of succession and other helps, have by *Tyme* [*sic*] procreated a plaine and naked truth,” namely, the flourishing of learning, which had “refined all Artes and Sciences.”

Although medicine, too, was marked by disagreement—between students of such notable physicians as Hippocrates, Galen, Paracelsus, and Duchesne himself—Tymme believed that all should be embraced and honored, because they all

“sought only the good of mankinde.” His advice was based on more than altruism; it also had a scriptural foundation. He reminded his readers that in Ecclesiasticus they were told to honor the physician, for God created him and gave him knowledge so that he would glorify God. In addition, the miracles of Jesus usually healed an infirmity, and Luke was a physician and an evangelist. In short, medicine and healing had profound scriptural foundation.

There was yet another reason why it was so appropriate for the pious Christian to accept different medical views and appreciate the divine nature of the work. In the dedication to Duchesne’s treatise, Tymme had already established the relationship between studying philosophy and studying the divine. Even Plato had said “that Phylosophy is the imitating of God, so farforth as man is able: that we may knowe God more and more, untill we behold him face to face, in the kingdome of heaven. *So that the scope of Phylosophy, is to seeke to glorifie God in his wonderfull workes: to teach a man how to live wel, and to be charitably affected in helping our neighbour.* This Philosophy natural, both speculative & active, is not only to be found in the volume of nature, but also in the sacred Scripture: as in Genesis, in the booke of Job, in the Psalmes, in Syrach, and in other places” (emphasis added).

After nearly twenty years of condemning, urging, exhorting, and encouraging anyone who would listen (and surely many more who would not) that the divisive nature of their religious culture would lead to disaster, Tymme had apparently found a solution that he had never before considered. The English faithful could learn how to live charitably, as a unified whole, by studying the Book of Nature *and* the Book of God. After all, he said, it was Solomon’s knowledge of philosophy that allowed him to excel above all other kings and philosophers in the world. Knowledge of philosophy in general, and the healing qualities of “Halchymie” in particular, might be the salve that Tymme had sought for so many years.

### The Book Trade, the Book of Nature, and the Triumph of Scripture

On January 16, 1611/12, the *Stationers’ Register* recorded the following entry: “Master Knighte/. Enterd for his Copy under th’ [h]andes of master Doctor Mockett and Th[e] wardens, A booke called, *A Dyalogue Philosophicall where in natures secret closett is opened &c.* by T. Tymme professour of Divynitye.” *A Dialogue philosophicall*, Tymme’s last, longest, most original, and most complex text on natural philosophy, was properly licensed and registered with the Stationers’ Company and, according to the extant records, was the only alchemical publication the bookseller Clement Knight oversaw. Knight was located near St. Paul’s and so also near Tymme’s parish, St. Anthony’s. They had probably met earlier,

but certainly no later than 1609, when the first publisher of *A Silver Watch-Bell*, William Cotton, died and Knight acquired the right to publish it.<sup>52</sup> Cotton's misfortune was Knight's good luck, as this volume proved to be an enormously popular and surely profitable venture for Knight—he published eight editions between 1610 and 1625.

Knight was a rather unexceptional bookseller. From 1595 to 1630 we have a record of ninety-four of his publications, more than half of which are religious treatises, sermons, and devotionals.<sup>53</sup> He also published five separate editions of church visitation articles. In addition to these religious publications, Knight printed histories, comedies, and books devoted to self-edification. He published Virgil's *Aeneid* a couple of times. He was not officially admitted into the Stationers' Company until 1600, but he was associated with some of its publications before that—early in his career he took part in a few controversial, or at least injudicious, printing decisions. In March 1601 Knight and more than two dozen other London printers were forced to relinquish their copies of the banned book *Humours letting blood in the vayne* for burning.<sup>54</sup> In April 1603 the wardens of the Stationers' Company cited Knight, along with a dozen other printers, for printing James VI's *Basilicon Doron*. The effects of these punishments, however, were short-lived. Knight rose steadily through the ranks of the Stationers' Company and by 1619 was made Assistant of the Company, that is, one of the company's governors. Thereafter, his name appears throughout the *Stationers' Register* as a warden.

Perhaps Knight's commonplace career may be precisely the point. That he appears, from our distant and admittedly limited vantage point, to have been an establishment man, that he was rather unexceptional, that the books he published fell well within the boundaries of civility and propriety, all may suggest that Tymme's alchemical treatise was unexceptional within the constellation of Knight's printed books.

The respectability of Knight's publications stands in sharp contrast to Tymme's earlier alchemical publication, his 1605 translation of Duchesne's *Chymicall, and Hermeticall Physicke*, which was published by Thomas Creede, whose location on the title page was simply "London." It was not merely London, though. Creede was located in St. Giles, near the notorious neighborhoods of Moorfields, Smithfield, and Grub Street, outside the city walls. Moorfields had a particularly scurrilous reputation—it was the center of the city's brothels—but it was also the place where the lowest ranks of the print trade congregated, those unrecognized by the Stationers' Company, the publishers of dissenting and other illicit books.<sup>55</sup> Why Tymme had his *Chymicall, and Hermeticall Physicke* printed there remains unknown, but we can be sure that this strait-laced clergyman must have kept his head down when he traveled to such a neighborhood.



Creede's location is even more anomalous within the context of the booksellers Tymme had patronized earlier. The publishers of his historical translations and religious treatises—Henry Denham, Thomas Marsh, Frances Coldocke, William Cotton, John Wolfe, Peter Short, and Clement Knight—all had establishments close, sometimes very close, to St. Paul's Churchyard, a locale known for its prosperity and respectability.<sup>56</sup> While these kinds of assessments are fraught with difficulties and exceptions, we can be fairly confident that learned books could be found in St. Paul's, Little Britain, the Fleet Street, Cornhill, and to some extent Moorfields.<sup>57</sup> More to the point, with the possible exception of Thomas Creede, the booksellers Tymme worked with were established, licensed, respectable booksellers, whether he was translating a history of the French wars of religion, delivering a prophecy, or writing an alchemical treatise.

Such a reservoir of respectability was hardly necessary, though, for in the opening of his *Dialogue philosophicall* Tymme returned to the theme he had discussed many times before: unity. He wrote that God had set before their eyes the Book of Nature and the Book of God. Both books provided assurance that God existed before time itself and had created all things in "number, measure and waight." Creation was so perfectly balanced that it "formed thus this universall frame after the similitude of Unitie, in circular compasse, in pure and meere simplicitie." And this order and simplicity, these "Naturall Motions," were evident everywhere in nature, even in vegetables, the roots of which grow down while the sprouts grow upward. Natural philosophy allowed individuals to contemplate "that great and incomprehensible God." In short, as complex as creation was, it possessed an elegance, a simplicity, a unity, that deserved and rewarded attention. Tymme then asked his readers, "How necessarie is it then, for men to consider the workes of God in his creatures?"<sup>58</sup> The answer he gave was startling:

If man had not sinned, *the booke of Nature would have sufficed to have kept him alwaies in the knowledge & obedience of God his Creator.* For then he should himselfe have carried that Booke whole & perfect, imprinted in his heart and minde, neither should his Soule have needed any other Teacher to know it selfe; but it selfe should have clearely beheld and contemplated it selfe so long as she preferred and preserved her first light, wherein God had created her. But now that she is in the body as it were some excellent picture of Apelles, fallen into a sinke of mire, covered and compassed about with thicke mistes and obscure darkness, it is very needefull that we should have another new light brought to us from Heaven, not naturall, as the first, but supernaturall. *For this cause God hath given us his sacred Booke, by meanes whereof, as also by his holy spirit, hee communicateth to us as much heavenly light as is needfull for the knowledge of our selves, and of his high Majestie.*<sup>59</sup>

Instead of the foundation for Christian faith, scripture appeared to be an equal substitute for the Book of Nature. The natural world was just as sacred and perfect as the scriptures. A scriptural exegete for more than two decades, Tymme appeared to believe that studying the Book of Nature allowed one to uncloak secrets, just as studying the Bible revealed knowledge to learned and spiritual students. His earlier treatises were filled with revelations of his fears and hopes, both drawn from the Bible. In *A Dialogue philosophicall* there was simply hope, hope that the natural world might be redeemed in God's eyes and hope that the knowledge and wisdom of the world in its prelapsarian perfection could be restored to humanity. Perhaps this knowledge could no longer be read from stone tables, but it might be read in the Book of Nature.

Still, the relative merits of the two books had long been irrelevant. Saint Thomas Aquinas (1225–1274), Nicholas of Cusa (ca. 1400–1464), and Richard Hooker (ca. 1554–1600) all thought the two volumes were equally valuable. Margreta de Grazia notes that Calvin recommended that one search the scriptures to understand better the world God had created: “For by the Scriptures as our guide and teacher, God not only makes those things plain which otherwise escape our notice, but almost compels us to behold them; as if he had assisted our dull sight with spectacles.”<sup>60</sup> Calvin seemed to believe that the scriptures, being literally more legible than nature, were closer to humanity and therefore might assist in helping to understand that other sacred body, the natural world, more accurately. Tymme was undoubtedly aware of Calvin's directive because he translated Calvin's *Commentary on the First Book of Moses*, in which it appears.<sup>61</sup> It was a directive, however, that did not completely persuade him.

*A Dialogue philosophicall* was essentially an English-language amalgam of Aristotelian and Paracelsian thought expressed in the traditional genre of a dialogue, in this case between Philadelph and Theophrast.<sup>62</sup> The complex relationship of experimentation, experience, and revelation in Paracelsianism was a major theme of the text. When Philadelph questions Theophrast about whether one can distinguish matter through its form, Theophrast remarks testily, “I doe not thinke that any thing can be defined concerning these, which is either certaine, constant, or approved by generall consent, so long as mans minde is shut up in the prison of his body, neither can he know by his senses, what Matter, and Forme is.”<sup>63</sup>

One tenet of Paracelsianism was its reliance on the spiritual revelation of knowledge, and Theophrast certainly echoes that sentiment.<sup>64</sup> The Paracelsian natural philosopher hoped to obtain a mystical union between spirit and matter, which is why he was so dismissive of mere observation. However, Theophrast later comments that “all the functions and workes of this simple Forme, may of us easely be discerned and knowne. But how and from whence they proceede; and what is the substance of the effecting cause or faculty thereof, is as much hidden

and unknowne to us, as is the essence of the Divinitie.”<sup>65</sup> He then proceeds to list more than a dozen things that individuals could observe in nature without understanding them, such as how lodestones attract iron, how a snake or scorpion can kill a man with its poison, or how olive and myrtle trees have such an affinity that their branches will grow together. Human observation was limited because these mysteries were “hidden in the Closet of Nature.” Despite the seeming futility of the task, however, Tymme believed that “it is mans duty . . . to take a view of all the creatures of God to him knowne, to search after such hidden causes therein soberly, that he may magnifie the most omnipotent and wise Creatour of Nature” (50).

There may be a role for observation, but that role must have a spiritual purpose: the duty of the Christian natural philosopher was to study the natural world and obtain its secrets, not for self-edification but for the glory of God. The same could not be said when one studied the divine. Tymme’s work was notable for its lack of curiosity about the nature of God. The purpose of natural philosophy, he wrote, was to glorify God, not to seek understanding of God’s omnipotence and mysterious ways. He wrote the dialogue between Philadelph and Theophrast for the purpose of appreciating but not inquiring about the majestic power of God.

Asked to define power, Philadelph cites Aristotle, who “defined Power to be . . . the beginning of motion and alteration”; “there were two sorts of power: . . . the power of effecting is the beginning of mutation in another (whereof he hath spoken much in his seaventh of Phisickes) and the power of suffering is the beginning of mutation from another” (19–20). Although Theophrast and Philadelph confine their discussion of power to matter and its transformation, Tymme made clear the spiritual correlation: “For the matter which we debate of now, is the power of suffering, which being in the matter as a certaine preparation, maketh the same apt and fit for commutation and change” (20). Suffering prepared “for commutation and change,” preparing it for the result of power, order: “They which have defined power to be a certaine preparation and ordering of matter, (albeit they thought it not fit to seeke further what manner of preparation that should be) yet doe thrust upon us a prodigious false invention, and doe rather busie themselves about the name, then seeke to know the things themselves” (20). Power therefore was not merely suffering; it was the life force itself. Suffering was a component of power, but not its entire essence. After an exchange about the nature of power, Philadelph offers to sum up the discussion: “But before forme came into matter, it desired a certaine ornature and preparation of the same, without the which it cannot enter there. This preparation is called Power, the which power is not so much as a portion, nor the least mite of the approaching forme, *but onely a fore-running preparation, or ordering of the matter*” (25, emphasis added).

The “ordering of the matter” spoke as well to the ordering of the divine. Philadelph could not help but notice that salt, sulfur, and mercury, like all other things in nature, appeared and were understood by the number three, “according to that triple proportion, wherein God is said to have made all things in waight, number, and measure” (38). Years earlier, Tymme had worked out that the three crucial elements of the alchemical process—salt, sulfur, and mercury—accorded with and even proved the Christian doctrine of the Trinity. By 1612 he saw the paradox of division and unity in the Trinity as a common motif throughout the Book of Nature. The divinity of the number three had long been clear to him, and it applied as well to the trinity of body, soul, and spirit. Philadelph (thankfully!) remarked that he could not see the difference between soul and spirit. The question was critical because of the foundation they had laid earlier. If one’s soul and spirit could not be seen as separate, then their belief that the universe was founded on the number three collapsed. Theophrast solved the problem by explaining that the soul is “an immortall heate” that seeks to attain union with the divine heavens; therefore the soul was inherently divine. However, he compared the spirit to the wind: It is not quite corporeal, yet it could affect a corporeal body (40). He called the spirit “the chariot of the soule” and maintained that “the heate of this soule is celestiall and divine” (41).

*A Dialogue philosophicall* makes it clear that Tymme could never completely accept the equivalency of nature and scripture. When Theophrast and Philadelph turn to the position of the earth in the universe, they use Paracelsian principles and scripture to defend the Aristotelian system. Philadelph notes that despite the work of Nicholas of Cusa and Copernicus, there are good reasons to believe that the earth is stationary. It is better “to attribute motion to the contained then to the containing; to the thing placed, then to that which affordeth place” (58). When confronted with Copernican doctrine, Tymme did not—or perhaps could not—rely solely on Paracelsian doctrine and the Book of Nature. Instead, he relied first and foremost on scripture:

But now I come to answer *Cusanus* and *Copernicus*, with reasons not taken out of humane Philosophie, . . . but that which is divine and infallible, proceeding from the wisdom and mouth of that great God, who is the Creator of the heavens and Earth. . . . Heare therefore what the Prophet David being divinely inspired speaketh, concerning the motion of the Sunne in his Sphaere: He commeth forth (saith he) as a Bridegroom out of his Tabernacle, and rejoiceth as a mighty man to runne his course: his going out is from the end of the Heaven, and his circuit is to the end of the same, and nothing is hid from the heate thereof. (59)

His biblical references to Psalm 19:5–6 (and later to Joshua), and his illustration of the universe, had the earth firmly in its rightful, central place, with the planets and spheres revolving around it, as explained in the scriptures (59–60).

Tymme's earlier consideration that nature might describe the universe equally as well as scripture vanished. He could not embrace a principle expressly denied by the Bible. As seductive as the Book of Nature might be when it departed from scripture, he came down firmly on the side of scripture. God the creator/alchemist formed the universe through a monumental alchemical process—nature and scripture agreed on this point. Yet the two books disagreed on the position of the earth in the universe, and in the case of such disagreement, the written word of God assumed primacy over the visual word of God as manifested in nature.

Tymme closed his discussion by returning to the concept of suffering and power. Roaming from the Pentateuch to the Pauline epistles, he marshaled the biblical texts he knew so well to convince his audience that Christianity was the ultimate healer of all afflictions: "The true felicitie of that Heavenly and most blessed life to come, consisteth in these things. First, in the restoring of all the chiefe things in Nature to a farre greater, and more high perfection then now they have. . . . Also in his [Paul's] Epistles to the Ephesians, and Colosians, he saith: that all things whether in Heaven or in Earth, shall be restored in Christ" (68). Clearly, in the context of a study that had examined matter and form and the prime elements of the universe, he understood Paul's spiritual message to refer to a physical transformation, a renewal and redemption of the natural as well as the spiritual world. Alchemy might even result in the return of Christ, ushering in a new world, a world redeemed and transformed alchemically. The Day of Judgment itself, as we saw earlier, would be an alchemical event. Theophrast proceeded to describe chapters 20 and 21 of the book of Revelation. He recounted a city with walls and gates made of precious stones and streets paved in gold, making clear that the alchemical transformation was securely founded upon holy scripture. However, this event would be more than a simple transmutation of the natural world: "In this Kingdome, God shall wipe away all teares from their eyes, and there shall be no more death, neither sorrow, neither crying, neither shall there be any more paine: for the first things are passed. A third point which shall encrease our felicitie, will be the exceeding resplendant glory of the glorified bodies, and creatures in that Kingdome. . . . And then having such glorified bodies . . . we shall see God as he is, and behold him face to face. . . . This onely sight of God is our happinesse" (69–70).

The physical and spiritual worlds had melded to the point that they were almost indistinguishable—which was what Tymme had tried to achieve all along. He had grown to see and appreciate the power, order, and wholeness of nature, and he believed that this order and wholeness had something to teach his splintered society.

Yet he was also finished with such nontraditional means of defending traditional doctrines. He never again put his amalgamation of natural philosophy and spirituality into print.

### The Prayer Book

In 1618 Tymme published his last treatise, *The Chariot of Devotion*. By this time he had been assigned to the Hasketon parish in Suffolk, and in the title of this treatise he identified himself as “Minister at Hasketon in Suffolke.” Another difference was his bookseller—for reasons unknown, his long association with Clement Knight was over; his devotional was published by Thomas Bailey in Holborn, another prominent center of printing, west of St. Paul’s, outside the city walls.<sup>66</sup>

These differences notwithstanding, *The Chariot of Devotion* returned to themes Tymme had addressed many times before. When he wrote of chariots, he wrote of how the great Egyptian, Philistine, and Hebrew warriors all used them, but the greatest chariot, the one “most divine,” was of course that of Elijah, who was carried into heaven on a chariot of fire, according to the Bible. Was he thinking of himself as much as of Elijah when he wrote, “This Chariot suted well with the zealous and fervent spirit of Eliah [*sic*] in the service and worship of God, where-with he was indued. . . . For God maketh his Angels Spirits, and his Ministers a flame of fire”?<sup>67</sup>

In any event, *The Chariot of Devotion* returned to the role of power in the universe, not God’s power but the power of prayer. Tymme did not believe that worship consisted merely of “a bare and idle hearing of daily Sermons,” while slighting “publique, common, & joint praier.”<sup>68</sup> Prayer became more powerful when it was corporate. The Anglican prayer book, the liturgy of the congregation, could summon the divine just as sermons could—an interesting argument given that Tymme had preached, especially in print, for so many years.

Evidently, more important to Tymme than preaching was the order of the liturgy in the prayer book. “In the service and worship of God, every thing ought to have his proper place and order: a consequence so pleasing to God, that he vouchsafeth to be called the *God of order*, and not of confusion. All praier and no preaching, is the heresie of the Euchites: And all hearing and no common prayer, is a sprout of as bad an heresie, if not worse.”<sup>69</sup> In the margins of the text he scrupulously informed his readers that he was referring to 1 Corinthians 14 (specifically 14:33). The same quotation and citation appear later as well.<sup>70</sup> This is notable because either he was forgetful or careless or he deliberately changed the text of the scripture. Both the Bishops’ Bible and the Geneva Bible record that God is a God of “peace,” not of “order.” If the use of “order” was deliberate—and it may

have been the bookseller's decision, not his—it may reveal something about how he believed peace could be achieved: through order.<sup>71</sup> If order preceded peace, in Tymme's view, then this equation suggests a great deal of how the fractured religious culture of post-Reformation England was perceived by conformists.

That fractured culture could be unified through common prayer. He pointed out that common prayers of thanksgiving and blessing dated back fifteen hundred years, to the composition of the New Testament itself, and that these prayers were confirmed by no less than "Christian kings and Magistrates." This tradition ended when dissenters raised their voices and refused to repeat the prayers of preceding generations of Christians.<sup>72</sup>

Common prayers were more than just bulwarks against the ominous forces of schism. Tymme criticized the notion that prayer should be personal or spontaneous and advocated praying the prepared prayers of the church. If Christians had to pray without guidance, they might be "discouraged," "cooled," or "commit many follies and idle repetitions in praying." "They have so many formes of prayer," he observed, "devised after their owne fantasies, that whereas God is the God of order, they present themselves with confusion"; moreover, those who wanted to pray but "for want of abilitie to conceive a prayer, shall be disappointed of their devotion, and so not pray at all" (36). By contrast, "an uniforme and set prayer universally read and pronounced by Priest and people together, as it seemes to maintaine the unity of the spirit in the bond of peace: so it increaseth the hope and comfort of the Church, and efficacie of our prayers with God, when the whole Church in every congregation, speakes one and the same thing, like the Church triumphant in Heaven, which albeit it is as the sound of many waters, yet doe they all sing one song" (39–40).

Tymme's plea was not isolated. As early as 1590 the vicar of Flixton in Suffolk, Thomas Daynes, was deprived of his living in the consistory court on evidence provided by his parishioners. He condemned his congregation for bringing their prayer books to church to see if he was adhering to it or not. Calling them "papists," he charged that "they would rather . . . heare masse . . . than to heare the worde of god trulie preached." He rebuked his parishioners, saying "they which wolde have sarvice sayde accordinge to the booke of common prayer are papists and atheists."<sup>73</sup> Clearly, Daynes's parishioners saw the prayer book as an essential tool that they needed to build their pathway to heaven.

Judith Maltby rightly notes that Protestant reformers rejected the "parallel liturgical activities" of the medieval mass, in which the clergy read one devotion and the congregation responded with another.<sup>74</sup> Thomas Cranmer's and others' vision of the new Church of England, expressed in the Book of Common Prayer, brought both clergy and laity together in one prayer. Tymme believed that common prayer was common precisely because it established a unified liturgy and

prayer throughout the kingdom and demonstrated that clergy and laity were involved in the worship together and equally.<sup>75</sup>

Tymme was frustrated that “schismatiques” were unable to appreciate the corporate power inherent in a unified Christendom. Even in nature, he remarked, one could see that “the conjunction of things which are of one kinde, makes them much stronger” (40). He wrote of how multiple fires that have collapsed into one are much more fierce, of how springs that join together create a river, and of how many hands can lift a burden that no one alone could lift. “So in our publique-Common prayer, where many congregations gather together about one time, and upon one day: this of many thousands must needs be much more powerfull, than that which is made by one, or a few” (40–41). For Tymme, common prayer not only united the faithful in a common voice that God could hear more clearly; it united Christians in their common temptations, sins, concerns, convictions, and assurance.

In his “epistle dedicatory” to Duchesne’s *Practise of Chymicall, and Hermeticall Physicke*, Tymme wrote, “Plato saith, that Phylosophy is the imitating of God, so farforth as man is able: that we may knowe God more and more, until we behold him face to face, in the kingdome of heaven. So that the scope of Phylosophy, is to seeke to glorifie God in his wonderfull workes: to teach a man how to live wel, and to be charitably affected in helping our neighbour.” To “know God more and more” was clearly why he translated, studied, and wrote history, theology, devotion, and natural philosophy, including alchemy.

That Tymme turned to the study of alchemy and wrote so admiringly about it may strike us as disconcerting given the relatively tight focus of his earlier work. However, despite the elusive, often inchoate language and symbols to which he referred, his alchemical writings spoke essentially to the same issues he addressed in his religious writings. The universe was an ordered place, and alchemy revealed its order—all the more reason why the Church of England should be a unified, singular body; anything else would be unnatural.

Tymme remained rector of the Hasketon parish, eight miles east of the port and county seat of Ipswich, Suffolk, for two years, until his death on April 29, 1620. Tymme’s life and work serve as a cautionary tale for those who want to separate the religious culture of late Elizabethan and early Stuart England into discrete cubicles of clearly defined sects and denominations. While, like so many other men and women in the early years of post-Reformation England, he clearly was weary of the demands sectarians made upon the state church, his work was evidence that the Church of England could accommodate a wide variety of beliefs and pursuits. Neither the predestination theology of grace that so influenced the Stuart church nor the free will of Arminianism seems to have interested him very



much. Instead, he appears to have set aside such concerns for what he believed were more significant virtues: humility, piety, devotion. Whether it was through humility and contrition, parish voices lifted in common prayer, or an alchemical transformation, all of his studies and concerns focused on achieving a united Christian flock. As one of its appointed shepherds, Tymme must have departed his earthly life with more anxiety and concern than satisfaction and hope for its future. The events of the years following his death would confirm his worst fears.

# 2

## ROBERT FLUDD, NATURAL THEOLOGY, AND THE ALCHEMICAL DEBATE OF 1623

In 1623 Robert Fludd was once again forced to unsheathe his polemical sword. Since 1617, this diminutive, Oxford-educated gentleman from Kent had spent much of his time wielding his verbal broadsword against an array of intellectual opponents. The German astronomer and natural philosopher Johannes Kepler and the French mechanical philosophers Marin Mersenne and Pierre Gassendi had dueled with Fludd, and their spirited matches are primarily why he is remembered by historians of science and intellectual history.<sup>1</sup> In 1623, however, the Englishman Patrick Scot published *The Tillage of Light*, a brief caveat about the claims of alchemy. Scot thought it was fine to believe in alchemy metaphorically, that is, to believe that individuals could be transformed and that even the basest of individuals might be redeemed in the eyes of God, but he argued that it was at best unhelpful and at worst spurious to believe that actual transmutations of metal were possible and that these transmutations could emanate to other properties in the natural world. A scarred and toughened veteran of intellectual debates, Fludd could not allow such statements to pass unpunished, and he set out to shred this, in his mind at least, impious notion.

The result was a ten-thousand-word manuscript, “Truth’s Golden Harrow,” that defended the material aspects of alchemy.<sup>2</sup> Fludd did not deny—and indeed even encouraged—the metaphysical and spiritual elements of alchemy, but he argued that these should not overshadow the very real, very tangible qualities of the art. Scot’s advocacy of spirituality without physical transformation was pernicious to Fludd.<sup>3</sup> For Fludd, alchemy had to be both metaphysical and physical; it was God’s work on earth, and spirituality alone was not enough for the faithful. Christians had a sacred responsibility to *achieve* God’s will on earth, and Fludd believed that alchemy was one of the most sacred responsibilities God ever gave to humanity.

However, in “Truth’s Golden Harrow” we confront the essential paradox of Christianity. Fludd did not turn to recipes, testimonies of past success, personal experiences, or historical anecdotes of alchemical processes to demonstrate their physical reality. Instead, he turned to philosophical and theological constructs to demonstrate that alchemy involved real, demonstrable processes. In other words, Fludd’s argument for alchemy’s physical reality was based upon intellectual and spiritual beliefs. As a conforming member of the Church of England, a Christian Neoplatonist, and a member, and eventually an officer, of the College of Physicians, spirituality was as real for Fludd as any physical experience he witnessed or conducted.<sup>4</sup> Spiritual as well as occult forces would ultimately effect change in this world. In this regard he was as much a part of the religious culture of the Church of England as he was of the medical and philosophical community in the early decades of seventeenth-century England.

Indeed, as far as his religious sensibilities were concerned, Fludd was quite conformist, as he stated to James VI and I when he wrote in his “Declaratio Brevis,” “Therefore, in the first place, Your Majesty, it will appear most evidently, unless I am mistaken, that my *Tractatus Apologeticus* clearly does not deal with religious innovation, nor does it share even an iota of any heresy, inasmuch as I, the author of that work, have steadfastly adhered to this reformed religion (which is now the custom among us) from my infancy, and indeed almost from the time I lay at the breast of my nurse in England at the very beginning of my life and right up to this day.”<sup>5</sup> It goes without saying that only the foolhardy would confess heretical beliefs to one’s monarch, but there are reasons why we should take Fludd at his word. As esoteric as his writings were, they clearly supported traditional orthodox beliefs, most significantly the Trinity. In addition, Fludd boasted in the “Declaratio” “that men of letters . . . and the learned from every profession, both Papist and Lutheran as well as Calvinist, praised far beyond my merits this volume of mine and seem to approve of my works unanimously.”<sup>6</sup> Such breadth of acceptance suggests not only unusually open-minded seventeenth-century readers but, more significantly, a lack of “religious innovation” of any kind.

Fludd’s religious sensibility and spirituality have been recognized in several previous studies. Years ago, Allen G. Debus recognized it in Fludd when he noted that Fludd turned to God’s scriptural revelation before he turned to nature, God’s book of creation.<sup>7</sup> Later, when he commented on Fludd’s approach to mathematics, Debus said that although Fludd insisted that mathematics was an essential tool to study the universe, a mathematician should have higher goals in mind. A mathematician should use circles, triangles, squares, and other figures to demonstrate divine harmonies in nature; in doing so the connections between the universe and humanity become evident. For Fludd, Debus observed, mathematics was not simply about quantification but was a tool “to study the overall design of

the universe. He should not—like Galileo—be concerned with lesser phenomena such as the motion of a falling object.”<sup>8</sup> The scholarship on Fludd that focuses on different aspects of his spirituality confirms this essential aspect of his life and work. Joscelyn Godwin and William Huffman have recognized the close relationship between spirituality and the occult in Fludd’s work.<sup>9</sup> In short, there has been a long-standing appreciation of the convergence of Fludd’s intellectual and spiritual interests.

The debate between Fludd and Scot crystallized in a single moment questions that were becoming increasingly perplexing and disturbing to theologians and philosophers in the early decades of the seventeenth century. What determined “appropriate” religious expression in the post-Reformation religious community? What distinguished orthodoxy from heterodoxy? What’s more, the skeptical philosophy had become an increasingly discussed issue among scholars who haunted university lecture halls, salons, and, of course, inns and taverns since the mid-sixteenth century.<sup>10</sup> Its implications in natural philosophy may have been fascinating but were also theologically terrifying. How did the pious believer believe when scholars taught that one might never be certain of anything? Finally, in such a world, was it possible to reach a semblance of religious unity in English society, and if so, how?

Discovering answers to these questions led Fludd down the briar-choked path and tangled brush of the skeptical philosophy, Cabala, and alchemy. Yet by the time he had completed his journey, he had cleared a trail and mapped a new natural theology, which he articulated in both printed texts and manuscripts. Apart from “Truth’s Golden Harrow,” Fludd’s only other explicit effort to integrate spirituality and natural philosophy was his *Philosophia Moysaica* (1638), published in the Dutch city better known now for its mild cheese than for its small but significant role in the Netherlands’ free and open printing industry, Gouda.<sup>11</sup> In the equally vibrant printing culture of Cromwellian England, this volume was translated into English in 1659. The philosophy of Moses that Fludd expounded in this massive volume was precisely the same one that he had expounded in “Truth’s Golden Harrow”: that his natural philosophy was, at its core, a new natural theology.

A world in which all agreed that scripture, philosophy, wisdom, and theology were unified in an inherent truth was a sentiment that must have seemed particularly appealing but also particularly elusive in the 1620s. In 1623 the reign of James VI and I was in its twentieth year, and the great hope for reconciliation between the various Protestant sects, Puritanism especially, and the Church of England had unraveled both at home and abroad, despite James’s best efforts. Both before and after he ascended to the throne of England, James pursued conciliatory policies. Before he ascended to the English throne, in 1597, James held General Assemblies

of the Scottish Kirk (the Church of Scotland) that would eventually lead to the establishment of an episcopal system that allowed the voice of the church to be heard in the court but kept the church subordinate to civil authority.<sup>12</sup>

James encouraged the Synod of Dort, which convened from November 1618 to May 1619, to settle differences within the Reformed Church. The Church of England had representatives in attendance. The synod concluded with England making an official commitment to support orthodox Calvinist theology. W. B. Patterson notes that “James saw the Synod of Dort as an opportunity both to restore peace and stability to the United Provinces of the Netherlands and to advance his project of bringing the churches of Europe closer together.”<sup>13</sup>

In 1622 James even brought a tiny assembly of individuals together for a three-day conference in an attempt to dissuade Mary, countess of Buckingham, from converting to Roman Catholicism. Francis White, dean of Carlisle and royal chaplain, hoped, as James and his supporters had, “that the Church’s wounds might be healed by a general council of all the churches, where agreements could be reached on controversial issues or at least a ‘charitable complying in things indifferent or tollerable’ arrived at.”<sup>14</sup> However much James resented the imposition of Parliament on his will, and however much his foreign policy in the last years of his reign has colored the historical assessment of him, it is probably fair to say that James appreciated varieties of personal religious belief—at least by seventeenth-century standards—and made an effort to bring those differences together as realistically as possible.<sup>15</sup>

Fludd’s treatise mirrored the goals of these councils, except that instead of turning to an ecclesiastical polity, he sought to diminish differences within philosophical systems and to demonstrate the unity between God’s creation and his revealed word. Irenicism was not unique in the 1620s and was present in places as high as the court of James VI and I, as far-flung and amorphous as the intellectual community known as “the Hartlib circle,” and even in the handwritten composition of a seventeenth-century London physician.

Therefore, in this spirit of unity and irenicism, Fludd’s new natural theology would have to be a complex integration of Christianity, philosophy, and occult traditions. Like virtually all early modern natural philosophers, he believed that when studying nature one was always really studying God. The complex and infinite details of nature were manifestations of the complex and infinite details of the word of God.<sup>16</sup> The wisdom and knowledge of the natural world expressed in alchemy, as well as in the scriptures and in the wisdom of the ancients, was ultimately, for Fludd, theology. Alchemy served as a sacred revelation of God’s word, and he believed that it was his responsibility to share and defend this alchemical revelation and belief. Therefore, let us retrace his steps, or at least one brief but illuminating stage of his journey. Fludd’s confrontation with Patrick Scot may

have been momentary, but the debate on the efficacy of alchemy forced him to articulate his natural theology more concisely than he ever had done before.<sup>17</sup>

### Manuscript and Print Traditions in Alchemical Texts

In the previous chapter we saw how crucial the book trade was to Thomas Tymme's religious and alchemical inquiries. Even so, his 1602 alchemical treatise, *A Light in Darkness*, which illuminated John Dee's *Monas Hieroglyphica*, never saw the light of print. Indeed, reading, copying, and sharing manuscripts was how the vast majority of alchemical manuscripts were exchanged until the late seventeenth century. Lauren Kassell has studied the alchemical manuscript tradition extensively, and she notes that since the second half of the sixteenth century, ancient, medieval, and early modern alchemical manuscripts circulated in England in both Latin and the vernacular. For a variety of reasons, including their potentially seditious or incendiary nature, their inherently secret nature, and even the reluctance of English printers to publish them, alchemical treatises were traditionally shared in manuscript. It was precisely these reasons that made the sharing of alchemical knowledge so uncertain. Kassell explains that while an adept's education and wealth were factors in what was read, there were numerous other factors as well, among them when and where an alchemist lived. Alchemical texts might be printed, or they might exist in manuscript only and be passed from hand to hand. "Whatever form the text took, it might have borne the name of an ancient alchemist, a pseudonym, or no name at all. It might have recorded when and where it was written, or it might have been an unanchored fragment. It might have described the magical powers of the stone, or how to transmute copper into gold."<sup>18</sup> The writing, copying, and circulation of manuscripts, then, was an uncertain but vibrant tradition in the early seventeenth century.

Fludd's manuscript was copied at least once. Elias Ashmole held what was probably Fludd's original copy in the collection that he eventually bequeathed to the Bodleian Library, but he possessed a scribal copy as well. On the first page of the manuscript, that eminent antiquary wrote, "Written by Doctor Robert Flood, & with his owne hand."<sup>19</sup> Although the scribal copy may not have been completed until the late seventeenth century, that fact does not diminish the significance of the original work. That we have two extant copies of Fludd's text suggests that the exchange between Scot and Fludd was a part of a community of voices that is difficult if not impossible to recover satisfactorily, much less completely.<sup>20</sup>

Just as significantly, the shift from manuscript to print culture was very slow, and the vibrancy of scribal culture remained strong throughout the seventeenth century and beyond.<sup>21</sup> Arthur Marotti notes that despite the influence of the

printing press, manuscript and print traditions coexisted throughout the English Renaissance and as late as the Restoration. The manuscript tradition continued in the seventeenth century, even as printing “had largely replaced handwriting as the dominant literary medium.” Significantly, Marotti uses the example of lyric poetry to argue that “manuscript miscellanies and verse anthologies give a better sense of the sociocultural functioning of such literary texts than printed editions do. Printed texts of lyric verse . . . yield a distorted picture of literary history or of the place of literary texts in the life of the society that produced and consumed them.”<sup>22</sup> This phenomenon was not limited to lyric verse, however. Harold Love has traced scribal publication in three genres: verse miscellanies, parliamentary compilations, and consort music for viols.<sup>23</sup> In his review of Elizabeth Eisenstein’s study of the printing press, Anthony Grafton cites a swarm of studies that collectively “suggest that the experience of collectors and readers changed rather less sharply than one might expect with the advent of printed books.”<sup>24</sup> Indeed, when Sir Kenelm Digby and George Digby published their exchange of letters debating Kenelm’s return to the family’s Catholic roots and George’s decision to remain in the Church of England, the anonymous (but probably joint effort) “To the Reader” stated plainly, “It is no Excuse . . . to tell Thee these Letters are now made publick to prevent false Copies: for really, if you have not these, you will be abus’d with others, so imperfect and mangled, that we may justly pronounce them to be none of the Authors own.”<sup>25</sup> While the authors express an implicit confidence that putting their letters into print will set the record straight as to their authorship, their words also confirm that the copying of those letters was so dynamic as to be almost beyond their control. In his monumental study *The Nature of the Book*, Adrian Johns has demonstrated powerfully the uncertain and indeed destabilizing nature of printing in early modern England. Clearly, early modern scribal culture was a lively and formidable medium, and an extant manuscript provides us with a yet another window into early seventeenth-century English *mentalités*.

### Scot and the Perils of Alchemy and Skepticism

Of Patrick Scot’s life (fl. 1618–25) we know very little. He followed James from Scotland and worked to raise funds for the king’s exchequer by threatening individuals with prosecution for usury. Based on the tone of some of his writings and the dedication of one of his books, it is possible that he may have been a tutor for Prince Charles.<sup>26</sup> Most of what we know about him we must discern from the five publications he produced, all of which were published between 1619 and 1625. Four of his studies focused largely on devotion or political issues. *The Tillage of Light* was the only one devoted to natural philosophy.

Scot's first publication, *Omnibus & Singulis*, was a devotional book of advice on leading a spiritual and moral life. Yet another book of advice followed in 1621, this one devoted to princes, specifically Prince Charles. In *A Table-Booke For Princes*, Scot outlined how he believed an heir to a throne should conduct himself. He wrote of education, governing, nobility, and, of interest to our study, how to approach religious controversies. Scot, unsurprisingly, positioned himself as a vigorous supporter of the Church of England but offered an olive branch to dissenters when he wrote, "The bonds of religion are our faith, our baptisme, and not our ceremony." However, he then continued more ominously, "our policy: that such who are given to unfruitfull and unnecessary controversies, unswadles the church of her bonds of peace, opens a gap to all disorder and scandall, gives advantage to the common enemy to make musicke by her discord."<sup>27</sup> In 1622 he published another volume, *Calderwoods Recantation*, devoted to conformity within the English and Scottish churches. In 1623 he published *The Tillage of Light*, and in 1625 Scot's last publication, *Vox-Vera, or Observations from Amsterdam*, appeared. In this final work he argued that the Church of England was inclusive enough to accommodate all Christians and that those who rejected the church were simply impious. Virtually all of Scot's work, whether directed to the controversies between the English and Scottish churches or to sectarian Puritans, was bound together by the fine but strong thread that conformity and adherence to one unified doctrine were the only ways to obtain stability in the body politic. In this respect Scot resembles Thomas Tymme and Joseph Hall, a court preacher and dean of Worcester, who, Peter Lake argues, used his "moderate" position for irenic and polemical purposes. Lake observes that pleas for moderation could at times be sincere in their attempt to bring differing positions together and yet also attempt to lay claim to the moral high ground.<sup>28</sup> This was Scot's position as well.

Much like Tymme, Scot brought to his discussion of alchemy a deep conviction that orthodoxy was critical to a stable society. Unlike Tymme, however, Scot said as much in his attack on alchemy. He argued that there was an economically, politically, and even morally destabilizing aspect to alchemy. If philosophers obtained the gold they sought, the wealth and even the sovereignty of kings would be compromised, and the world as it was known would collapse.<sup>29</sup> In addition to these concerns, he feared that lust for wealth was the true appeal for the search for the philosophers' stone and that therefore, if alchemy was capable of all that its proponents suggested, the entire political and social fabric could be torn asunder. Scot was not alone in his concerns. John Reynolds published several volumes that laid out in clear tables the worth and weight of gold. This exercise was necessary, he explained, because of the "un-even Peces of Gold."<sup>30</sup> Reynolds's work rested upon the assumption that the economic stability of the realm would be based in part on precise, accurate measurements of gold. Clearly, there was little room, in



either Scot's or Reynolds's view of a stable society, for the multiplication, let alone the creation, of new gold.

However, the telescopic sight of Scot's text always held a central point in its crosshairs: Wisdom was not, and indeed could not be, veiled in hieroglyphics or mysterious parables, the stock-in-trade of alchemical texts and the occult sciences in general. He believed that wisdom was expressed in divine philosophy.<sup>31</sup> God gave individuals intelligence that they might exalt the elements of the natural world but not transmute them into something new or different. The arts could "dignifie and polish natures workes; . . . but never adde essence to the first substance other then it had before" (B3r). While he did not cite scripture as assiduously as Fludd did, he argued that "all Scripture . . . ought to be interpreted morrally and understood Spiritually" (10). Individuals should not attempt to find biblical justification for their alchemical studies. This point struck at the most profound division between Scot and Fludd. Scot advocated divorcing the search for physical principles from biblical exegesis, while Fludd believed that scriptural study, spirituality, and natural philosophy must be completely integrated.

There were some principles, however, on which Scot and Fludd could agree. Scot said that there was a light that was given to "cleere bodies" that began with creation itself and was in fact the soul of the earth:

This light was incorporat in the sunne, whose vertue and essence cherisheth the essence of every creature: but the full knowledge of the tillage of light, ariseth from the true notice of the first and last end of things: as man was created of pure earth, coagulat by pure ayre: so his last end is to shine as the sunne. There bee spirituall, intellectuall and sensible perfections of light; *the first is that inaccessible light which seeth all things, but is comprehended of nothing; the second is a spirituall reallity, whose nature possesseth no place, yet is intyrelly whole in every part of his circumscription:* but the third wee understand the sensible perfection of the Sunne, Moone and Starres. (B2r, emphasis added)

Scot's position on the sensible qualities of light is clear enough, and assigning divine qualities to light was a commonplace notion. His description of light that was "inaccessible . . . but is comprehended of nothing" could be a description of God the creator. The second light, however, was present in all things, not located in a single place but suffused throughout all things. Light as a living force was an idea that many—certainly Fludd, for one—would have shared. In the first volume of his *History of the Macrocosm and Microcosm*, Fludd had already made a very similar statement regarding the property of light when he observed that light was either uncreated—that is, it was the presence of God himself—or created from that which could not be created, the purest and clearest spirit.<sup>32</sup>

What troubled Scot were the vast claims alchemists made. Fludd saw the alchemical process as a divine gift from God, but Scot saw such a belief as Marin Mersenne had, as presumptuous and even impious. Indeed, Scot noted, God anticipated the potential conflict between nature and art and therefore had confined them within his will so that they did not extend beyond the realms for which they were intended (B3r). Art, he said, was intended to be nature's helper, but transmutation was impossible, because individuals could not make God's creation more glorious (B3v–B4r). He recoiled from the dangerous notion that God could be called upon or set aside as individuals desired, or, worse, that God, who was the creator, was also idle and distant from humanity. He wrote that God alone had the power to invest the natural world with glory, "least foolish man should presume . . . or thinke that hee had committed the government of his Creatures to his servants nature and art, to set himselfe at rest; who is still in action" (B3v–B4r).

Scot's reservations about alchemy rested upon the same foundation from which Fludd defended it: Christianity. What concerned Scot was not so much the efficacy of alchemy but rather the implications of it. In his mind, belief in alchemy allowed the pernicious philosophy of skepticism to flourish, which both men opposed. However, Fludd thought that alchemy could counter the effects of skepticism, while Scot feared that alchemy promoted it. The revival of skepticism during the Renaissance was a complex development, and surely no single cause can explain its influence in the sixteenth and seventeenth centuries. Certainly the discovery of the New World prepared in significant but immeasurable ways the intellectual community's acceptance and incorporation of skepticism into their thought.<sup>33</sup> Perhaps no cause, though, was more significant in the rise of skepticism than the rise of humanist education in the fourteenth, fifteenth, and sixteenth centuries.

The history of the skeptical philosophy reaches back to ancient Greece and was originally formulated in the Platonic Academy in the third century BCE by students who opposed the notion of dogmatic certainty. The school of "Academic skepticism" was formulated by Arcesilas (ca. 315–241 BCE) and Carneades (ca. 213–129 BCE) who developed the proposition that no knowledge was certain because all knowledge rested on suppositions that cannot be proved. Although none of the writings of these individuals survives, we know of their work through later figures such as Cicero and Diogenes Laertius. However, a dispute arose between these Academic skeptics and the students of Pyrrho of Elis (ca. 360–275 BCE). Although Pyrrho actually predated the Academic skeptics, his interpretation of skepticism was not widely accepted until the first century BCE, when Aenesidemus of Alexandria began to teach it. The "Pyrrhonian school" of skepticism argued that those who observed that no one can know anything was in itself a dogmatic statement, precisely what skepticism was intended to avoid.<sup>34</sup> The Pyrrhonians advocated

that a skeptic must rule out any dogmatic statement in favor of suspending judgment. Unlike Academic skeptics, Pyrrhonian skeptics attempted to eliminate all judgments and dogmatic assertions. They believed that individuals ought to follow their natural inclinations and the laws and customs of society without passing judgment on anything.<sup>35</sup> Much to Scot's dismay, these texts had survived the centuries, and by the seventeenth century they were more influential than perhaps ever before.

The ancient Pyrrhonic texts were recovered and published in 1562 and 1569. Their publication was an eminently humanist event because the texts promoted circumspection, withholding judgment, uncertainty—all qualities that discomfited Scholastics. Their publication was ill timed, though, because it coincided with the Catholic response to the Reformation—the Catholic Reformation—and it was not long before the sights of these texts were trained against Protestants. By rejecting unquestioned standards of true knowledge, Catholics argued, Protestants would be led down a path of infinite regress. Protestants, for their part, responded that Catholics were subject to the same risk, because they could not justify their authority or defend their extrabiblical oral and written traditions.<sup>36</sup> Joseph Mede (1586–1638), the eminent biblical scholar of seventeenth-century England, despite his study of philology, history, mathematics, and natural philosophy at Cambridge, nevertheless claimed that his philosophical reading led him to Pyrrhonism.<sup>37</sup>

Of course, Catholics were not uniformly antagonistic to the skeptical philosophy. The mathematician, mechanical philosopher, and friar Marin Mersenne reconciled his faith with the skeptical philosophy, maintaining what Richard Popkin identified as “constructive skepticism.”<sup>38</sup> While not rejecting this characterization, Peter Dear identifies more precisely how Mersenne undercut pure Pyrrhonian skepticism by arguing that with mathematics, certainty could be achieved. Dear concludes that Mersenne ultimately wanted “to undercut the Pyrrhonists’ claim to possession of a legitimate philosophical alternative and to reduce their doubts to mere intellectual conceits.”<sup>39</sup> Fludd believed that alchemy was an even more powerful antidote than mathematics to the virus of skepticism. Mersenne and Fludd differed on the best way to eliminate skepticism, but not on the goal.

The influence of skepticism concerned numerous individuals of the day. Most notably, René Descartes (1596–1650) had formulated his own skepticism, which avoided the Pyrrhonian trap of never discovering certainty. His skepticism consisted of doubting all things until one reached that which could not be doubted. His renowned statement “*Cogito ergo sum*”—“I think, therefore I am”—expressed succinctly his recognition that an individual’s existence could not be denied if that individual could think. Descartes, like Francis Bacon, believed that certainties existed and that they must be rigorously sought. Descartes and his friend John

Dury (1596–1680) considered Pyrrhonian skepticism the cause of the philosophical crises of their day, and they agreed to challenge it directly.<sup>40</sup> Yet they too disagreed, as Fludd and Mersenne had, on the means by which skepticism should be confronted. Dury saw the study of biblical prophecy as the most effective method, while Descartes thought mathematics would douse skepticism's insidious flames. Dury and Descartes agreed to disagree, and while Dury roamed from one European city to the next, trying to obtain an agreement that would unify the Lutheran and Reformed churches, Descartes set off to study and write about mathematics.<sup>41</sup>

The early modern interest in alchemy by figures such as John Dee, Robert Fludd, Elias Ashmole, and even Francis Bacon may therefore be seen in part as a response by those who viewed Pyrrhonian skepticism with increasing alarm. All of these individuals believed to some degree that alchemy promised to realize or to prove God's redemption of humanity, or at least had the potential to do so. For Fludd, the practice of alchemy offered nothing less than physical proof of God's presence on earth. On this point there could be no suspension of judgment.

Scot's position clarifies the difference between an individual who merely entertained doubts and a seventeenth-century philosophical skeptic. Scot's doubts about alchemy did not make him a skeptic. He believed that alchemy was beneficial as a metaphor for redemption and purification. Even if alchemists mistakenly thought that they had obtained their "Elixir," he said, this spurious conclusion was better than throwing "themselves upon the more dangerous Rockes of higher forbidden Mysteries, or becom[ing] altogether idle. . . . Idlennesse is the cursed mother of many wicked brood, and is the tares which the envious sowe when wee sleepe."<sup>42</sup> Here Scot made two points that might best be considered separately. Taking the latter point first, he seems to have been scolding his readers when he called idleness "the cursed mother of many wicked brood." Idle hands were the devil's workshop, and the vice of idleness was at least as great a transgression as the practice of alchemy. Searching for the elusive elixir, however fruitless, was preferable to being dashed on "the more dangerous Rockes of higher forbidden Mysteries." Of course, this statement begs the question, what mysteries?

Scot believed that curiosity was one of the vices to which alchemists were always prone. In his 1619 devotional text *Omnibus & Singulis*, he proscribed "the curious searching of divine mysteries" and acknowledged that the best scholar was the one who reasoned least.<sup>43</sup> In *The Tillage of Light* he recommended that Christians spend their time and effort searching the scriptures only "so farre as the enquire is revealed, and is profitable in the true ends," because "in the Mysteries of divine wisdom, wee have no such countenance as humility," and God "loveth better a credulous heart, then a curious head."<sup>44</sup> He feared alchemy for the same reason that Icarus should have feared flying too close to the sun: When individuals come too close to the gods, their destruction is imminent.

In observing that God prefers “credulous love” to “a curious head,” Scot was trying to redirect the spiritual energies of alchemists to more productive and, in his mind, less perilous pursuits. However, it was not the physical reality of alchemy that he feared but its temptations. Time spent away from pursuing divine truths was time wasted: “what ill lucke is it, that we who have the Oracles of eternall truth are so carelese & prodigall of our short time, that we doe not freely enjoy the happinesse of true divine light, which onely sheweth generous spir-its, worthy to be the master-peece of that soveraigne worke-master their Creator, I can give no other reason, then *quos perdere vult Jupiter hos dementat* [Jupiter drives insane those whom he wishes to destroy].”<sup>45</sup> Scot saw alchemy as part of the larger efforts of natural philosophers and scholars to demolish previously accepted notions about the world, an endeavor that he thought could only lead to ruin.

Yet even as he affirmed the metaphorical value of alchemy, Scot never swayed from his belief that alchemy’s goals of transforming base metal into gold, and of creating an elixir of life that could make humans immortal, were physically impossible. “Let us goe a little further, in the severall operations, circumstances and qualities of the Philosophicall elixar,” he wrote, “and wee shall finde, that neither of them may be fitly adapted to any thing else, then to mans formation in vertue.” He remained concerned about the universal claims of alchemists and the charlatans who sought the philosophers’ stone for personal gain, but although he rejected what he saw as the false physical promise of alchemy, he accepted its affinity with philosophy. Readers would find philosophy “refyning of us in vertue, is to a more pure substance, then of thrice purified gold,” he wrote. What’s more, the virtues of “quintessence, content and true reputation” would be extracted from “poverty and contempt.” Those who were bound would be liberated, the impoverished would find wealth, and earthly crosses would be borne only briefly before being multiplied “into Celestiall permanent joyes.” Scot believed that divine philosophy, not occult sciences, would transform this world into a better one. “It is Philosophy that in adversity (as steele from flint) draweth from us that sparke of divine fire left in our soules.”<sup>46</sup> “Philosophy” was a divine system of thought that valued faith over reason and orthodoxy over heterodoxy. Its goals were conformity and stability. The physical wealth that alchemy promised, despite what those who defended it might say, prevented individuals from pursuing such a divine philosophy.

Fludd had a different understanding of divine philosophy. Flexibility and individual expressions of piety were critical to the creation of a truly inclusive and, in Fludd’s mind, truly divine church. He had intimated these positions in numerous earlier writings, but Scot’s address led him to write his most succinct and focused statement of how natural theology could resolve the problem of religious dissent.

## Alchemy, Certainty, and Faith

Fludd began his assault by attacking Scot's notion that he was writing his text out of love for the religious community, protecting it from the charlatans who practiced alchemy. He responded vigorously by pointing out that the failure of illegitimate practitioners did not discredit the practice itself. The fact remained that not just anyone was worthy of practicing alchemy, "because she will not daygne to reveale her self but unto very few, and thos must prove worthy of her graces and favours." He never dignified Scot by referring to him by name, calling him only "the tiller of Light," who must have been rejected by those privy to alchemical secrets.<sup>47</sup>

Gold, Fludd argued, was the least of alchemy's appeal. Yet it was not exactly clear what its other benefits were until Fludd explained that "we have more authentick authours to confirme the reality of it." His "authentick authours" were of course the authors of the Bible, but they were also cabalists and Platonists—in short, the ancient voices of spirituality. To know the secrets of the philosophers' stone was to begin to understand more deeply the philosophies that shaped and influenced the world shortly after its creation. More importantly, the philosophers' stone might hold the secret of creation itself: "this multiplying light, this cupido of nature, this cabbalists Metatron or platonists universall soule of the world, by which the effect of this creating word, Crescite & multiplicamini [Be fruitful and multiply], is produced into act in every creature of what kind so ever."<sup>48</sup> God's command to Adam and Eve to be fruitful and multiply went beyond them to include the entire natural world, and the philosophers' stone held that secret. Such knowledge was far more valuable to a Christian natural philosopher than mere riches.

Clearly, Fludd agreed with Scot that alchemy had valuable allegorical significance; such a belief was common among alchemical enthusiasts. John Warwick Montgomery has examined the role of allegory in Heinrich Khunrath's alchemy. Khunrath believed that the search for the philosophers' stone was a search for the redemption of the physical world based upon Christ's redemption of humanity. The harmonic relationship between microcosm and macrocosm allowed Khunrath to perceive the philosophers' stone as the "Filius Macrocosmi" (Son of the Macrocosm) and to identify the stone with Christ himself. The rose-colored stone he sought was an allegorical representation of Christ's redemptive blood. The philosophers' stone provided theological meaning to the physical world. Just as significantly, because the presence of Christ resided in the natural world, to study nature was to study Christ.<sup>49</sup> Khunrath wrote, "Since God the Lord of our edification permits Jesus Christ to be represented in the great Book of Nature by the Stone of the Philosophers, I may fitly quote the words of Isaiah the Prophet

concerning Christ, in order thereby to show to some extent the wonderful harmony and correspondence of these two stones."<sup>50</sup>

We have seen that Scot approved of the allegorical aspects of alchemy, but he was far from alone. Although there is no evidence to suggest that Martin Luther cared about the physical transmutation of metals, he also seemed to think that alchemy had allegorical significance. He once said that alchemy was an allegory of "secret signification, which is exceeding fine, touching the resurrection of the dead at the last day."<sup>51</sup>

However, alchemical allegory alone was not sufficient for Fludd, and he marshaled biblical support in both the Old and New Testaments for his good occult works. His earlier reference to wisdom propped up with seven pillars specifically echoed Proverbs 9:1. He cited an allegory in the book of Job about how all materials—silver, iron, gold, even bread—were produced from the earth. He called particular attention to Job 28:2–3, 6: "Iron is taken out of the earth, and brass is molten out of the stone. He setteth an end to darkness, and searcheth out all perfection: the stones of darkness, and the shadow of death. . . . The stones of it are the place of sapphires: and it hath dust of gold."<sup>52</sup> Inexplicably, he said that no better description of the "materiall Elixir" could be made of this allegory. He explained that through "purification and rotation of elements" of the sapphire, "the effect is quick gold," and that the light that shines from this stone from the darkness is "the forme or divine soule." But the earth itself was also suffused with the potential for perfection: "the body is the earth refined into the powder of lively gold, unto the which perfection all the earth shalbe reduced at the latter day." Thus, literally, everything on earth would be restored and made new. Although Fludd did not cite the book of Revelation, he surely had it in mind when he concluded, "as by scriptures we are warranted, wher we finde it spoeken of a new heaven and a new earth: and againe *Ecce omnia nova sunt facta: Loe I make all things new*" (10v). For Fludd, this biblical passage confirmed the argument that the philosophers' stone was intended to be understood both allegorically and literally; he even called the passage an allegory. Scot, however, was unwilling to concede that the passage pertained to anything other than a spiritual transformation, but Fludd clearly believed that the passage was biblical evidence of the existence of the philosophers' stone.

There were other biblical references as well. Fludd pointed out how Ezekiel spoke of a fire that was said to be like amber and crystal and made another reference to gold issuing from a north wind ("*Venit aurum ab aquilone*") (10v). He wrote of how Job described the purifying fire that would lead to resurrection. Later he wrote of the cloud that guided the Jews in the wilderness, the rock Moses struck with his staff, and the wisdom of Solomon; these things not only represented but actually proved alchemy's transformative powers ("and yet dare any

man be so blind as to calle this divine Elixir or summum bonum an imaginary non Ens, a fume or a Chimera?” (10v). For Fludd, alchemy was, or at least was part of, an animating force that suffused the entire natural world. He believed that when God commanded Adam and Eve to be fruitful and multiply, every creature was inspired with “a certayne germinating and vegetating spirit or viridity . . . and this multiplying was bestowed as well on mineralls as eyther animalls and vegetables” (13v). Indeed, Allen Debus points out that Fludd’s *Philosophicall Key* (1619) explained “spontaneous generation on the basis of this *spiritus mundi*; the search for the isolation of this substance was to become a major part of his life’s work.”<sup>53</sup> However, Fludd was not simply defending the practice of alchemy; he intended to lay the groundwork for a new theology that would demonstrate through natural forces the physical presence of God on earth.

### Fludd and the Trinity

The correspondence of alchemical thought with traditional Christian beliefs, both Protestant and Catholic, is perhaps what made alchemy so attractive to many of its practitioners and why Fludd turned to alchemy to seek what was as rare in the seventeenth century as the philosophers’ stone: religious unity and its Christian ideal, the doctrine of the Trinity. Like Thomas Tymme, Fludd believed that the doctrine of the Trinity and the alchemical process were central to achieving unity. The alchemist “leaveth not his operation untill it hath of duality made unity, so that as out of on[e] fountayne of light two ished and wer compounded namly matter and forme, so by progression into trinity, duality (the authour of discord) might againe be reduced unto unity” (11r). The source of unity was ultimately Christ, but a Christ who expressed himself in alchemical language: “for Christ sayeth: When I am exalted I will draw bodys unto me: and St. Paule . . . speaking of Christ . . . Pacifying and accordinge by the blood of his cross all things as well on earth as in heaven: that is by the harmony of the word rising and being delivered from the hands of death and corruption by verture of his bright and vivifying divinity, through which all disagreeing antipathy is brought unto concord and unity” (11r–v).<sup>54</sup> Like creation itself, Fludd suggested, the death and resurrection of Christ was an alchemical process. His reference to “the word rising and being delivered from the hands of death and corruption” spoke to Christ’s death and resurrection, and he cited not only Paul’s reference to Christ but the first lines of the Gospel of John, which refer to God explicitly as “the Word.” Harmony was obtained through the purifying processes of corruption and death: “We cannot deny but that Christ the authour of salvation (whos image and patterne this our mystery is) did rise both body and soule and so of two united together in perfection



made one unity, transmuted darknes into light, mortality into imortality, and so made his pasage from Unum which is the beginning unto bonum or felicity which is the end, and thes are both convertible and on[e] only thing by the connexion and unity of on[e] Spirit which is all on[e] with them both" (11v–12r).

Christ was not only the author of salvation, but his "image and patterne" made explicable the alchemical mystery. Christ's death and resurrection were not simply an alchemical process: they were *the* alchemical process, the process that all others must imitate. The body and soul of Christ were united in one, a body transmuted from the corruptions of life on earth to the sublime perfections of immortality, which allowed Christ to obtain the unity with God that the church had proclaimed in the doctrine of the Trinity at the Council of Nicaea in 325 CE. The Gospels had proclaimed this message, and the natural world underscored it.

Indeed, an anonymous manuscript in the Kassel collection made a very similar link, drawing clear, direct comparisons between the elements, particularly mercury, and Christ. Bruce Moran explains that in this fifteenth-century German alchemical manuscript, *Das Buch der Heiligen Dreifaltigkeit* (The Book of the Sacred Trinity), "The sacred trinity (the first emanation of the Word) was, in fact, so bound to the terrestrial triad of the three creative principles, Sulphur, Salt, and Mercury, that Christ, the Word incarnate, could be viewed as being hidden in every part of the natural world." This treatise drew powerful correlations, in both text and illustrations, between the alchemical process and Christian doctrines such as the immaculate conception, the Passion of Christ, and the Trinity.<sup>55</sup> Fludd's theological argument that nature itself expressed the word of God was part of a larger debate that had been going on for generations, with few or no geographical boundaries.

Clearly, Fludd believed the Book of Nature and the Book of God were integrally related and that neither could be fully understood without reference to the other.<sup>56</sup> He believed that the denial of material transformation constituted denial of Christ's resurrection. Fludd referred to the "spirituall rock" as identical to "the mysterys, parables and oracles of holy writ." For this reason, he cautioned, "we must not nor cannot justly affirme that this divine and spirituall stone can be excluded from materiality."

If all the mysterys, parables and oracles of holy writ be alluded unto such a wisdom as is the spirituall rock, above mentioned, which is Christ risen againe, composed of a divine spirit and a spirituall body, of which the true philosophers Elixir is sayd to be the type or patterne, we must not nor cannot justly affirme that this divine and spirituall stone can be excluded from materiality, for as much as it consists of a divine and plusquamperfect spirit and body exalted from corporiety unto a pure and spirituall existence, from

mortality unto immortality, and being the patterne of Christ risen again, it must needs have the power to multiply infinitely: according unto that saying of Christ: before mentioned. When I am exalted I will draw all bodys unto me. (12v–13r)

To suggest that the purifying and transforming processes of alchemy were only metaphorical was to diminish the redemptive, transformative power of Christianity itself.

Scot thought it strange that the spirit of God could be associated with base matter, but Fludd ridiculed that notion, observing that creation and resurrection would not have been possible had God not been intimately involved with earthly matter: “For an answeare I say that verely if that had not been we had not been, neyther should we have had any farther hope of resurrection” (13v).

As for the animating force, rather than turning to scripture as he had earlier, Fludd cited a hymn written by the early church official Synesius of Cyrene, bishop of Ptolemais (360?–415?): “I will referre you unto the sense of the 17. Hymne of the reverent Bushop Synesius who speaketh thus. Now the divine Mens (quoth he) or bright soule and mentall beame hath only a respect unto the intellectuall world, and from this her disposition the soule and reasonable spirit of man is derived” (13v–14r). It is not clear precisely which passage Fludd was referring to, but there are a few lines by Synesius—markedly different from the passage quoted above—that Fludd certainly had incorporated into his own epistemology: “Thou art the Generator, Thou the Generated: Thou the Light that shineth, Thou the Illumined; Thou what is revealed, Thou that which is hidden in Thine own beams; the One and All, the One Self-contained and dispersed through all things.”<sup>57</sup>

Fludd’s understanding of this animating light was more material, however, more incorporated with matter:

But this mental beame, being the ofspring from immortall and divine parents *gliding downe into the dark hyle or chaos, very smal in substance, and yet neverthelesse being all and on and every wher dispersed in the world; turneth about by her power and vertue the vast and wide cavity of the heavens, and preserveth them from ruin and corruption in her presence, for she is every wher present by changing and fashioning her self into divers formes, for part of her is employed to give motion and lif unto the starrs, part instituteth the order of the angells and againe part doth indue an elementary and earthly shape* which doth reciprocally embrace with a greevous tye or knot, in so much that she beeing seperated from her immortall parents she sucketh in dark oblivion, and so forgetting her self she admireth the unpleasing earth, respects it with a blind sollicitude and care, *and by that means is prone to*

*affect corporall things, and to incline it self unto human affaires.* (14r, emphasis added)

This “mental beame” provided the order of the universe, dictating the hierarchy of angels and “human affaires.” Trying to understand the conduits that Fludd constructed is a challenge. While the meaning of the phrase is far from clear, given the broad scope of his discussion in the passage we may cautiously surmise that Fludd believed in a divine order to human society and that occult forces exerted themselves to make society as ordered and stable as heavenly bodies.

Later, when he turned to scripture, Fludd said that Paul had made a grain of wheat a metaphor for the resurrection of the dead: “this beame or bright spirit of light doth inhabit this grayne or else it could not have rise againe” (15r). Fludd was referring to Paul’s first letter to the Corinthians (15:35–37, 43–44) when he wrote, “But some man will say, how are the dead rayseed up, and with what body doe they come? Thou foole, that which thou sowest is not quickened except it die. . . . It is sowen in dishonour, it is rayseed in glorie: it is sowen in weakenesse, it is rayseed in power: It is sowen a naturall body, it is raised a spirituall bodie. There is a naturall bodie, and there is a spirituall bodie.” The “mental beame” was a force that permeated the universe completely, the force that raised an earthly and a spiritual body from death.

The motif of light was therefore not simply a literary device. For Fludd, as for many if not all natural philosophers, light was the actual divine force inherent in the nature of matter itself.<sup>58</sup> “By Holy writ we are warrented that the essence of God, which filleth every thing in heaven and in earth . . . is attired in a naturall or materiall vestiment or mantle, it is evidently confirmed by sacred testimony, for in the highest heaven he is indued . . . with light as with a vestiment, and in this light doth he dwell centrally” (15r).<sup>59</sup> Clearly, light was not simply a “beame” but was infused throughout matter, in the flesh of individuals and in the earth itself: “Vos estis templum Dei. Ye ar the temple of the holy Goste. And it is sayed Terra pariet salvatorem: the earth shall bringe forth a Saviour” (15r–v). Fludd challenged Scot, if God’s spirit and creation were integrated, then why should not the same be true of “the exalted matter of the Elixir”? This elixir was a “bright spirit” and would “have dominion over darknes and shine forth as it doth out of the pure body of the heavenly sunnne, and bestowe her graces out of the little world heare on earth amongst men, as it doth out of the sunne of heaven in the great world” (15v).

Light—the light of creation and the light of divine illumination—bound the narratives of scripture and alchemy together. Fludd proposed a unity of interpretation, first with the creation; and then, once that foundation was complete, he could demonstrate a philosophical unity with alchemy. God had made the elements of earth and water. He had also clearly created air, because Moses had

said, “the spirit of the Lord moved on the waters.” Later, referring to “St. Austine” (presumably Saint Augustine), these elements were infused with a fiery love that gave them a “vivifying and multiplying vigour.” He pointed out that even Aristotle acknowledged the existence of a primary form, which he called “the first Act,” that universally suffused all matter (17r). Light, however, in accordance with both the alchemical process and the agricultural metaphor in the title of the text, played a vegetative role. Illumination was a broad alchemical concept often associated with vegetation.<sup>60</sup> Fludd said of the elixir “multiplying lif” that “this fier is multiplicative in infinitum” and that it would “multiplyeth infinitely if it have matter well prepared to worke on” (15v–16r). Fludd was advancing the purported generative and vegetative, usually called “vitalistic,” process in alchemy.

B. J. T. Dobbs observes that vitalism seems to have been associated with alchemy since its origins. When alchemical ideas began to develop in the early Christian centuries, metals were not understood to be distinct from one another but were thought to possess variable properties that might be “leavened” or “fermented”—and indeed, by analogy, alchemists referred to this phase of alchemy as “fermentation” or “generation.”<sup>61</sup> As we saw earlier, Fludd subscribed to a divine explanation for this process. Mersenne had attacked Fludd precisely because he felt that this position was antithetical to both Christianity and natural philosophy. Yet both Boyle and Newton reported “vegetative” phenomena in their alchemical work, which suggests that this idea endured at least until the middle of the seventeenth century and perhaps beyond.<sup>62</sup>

Fludd made one of his longest arguments in response to a particular point Scot made, which Fludd restated as follows: “We infer therefore upon thes grounds that it is a poore consequence and of little effect, namly that because the philosophers hieroglyphicks and the Theosophists mysterys and parables did principally point at wisdom, therefore theie should not respect any materiall Elixir” (16r). That parables contained wisdom did not prove the “material Elixir” a fiction. He gave dozens of examples from the Bible, esoteric wisdom, and occultism of God revealing himself to human beings. He reminded his readers that God and humanity had been in very close communication when the Hebrew scriptures were composed. Moses, who after Jesus had experienced the closest communication with God since Adam, nevertheless never saw the face of God.<sup>63</sup> Fludd rather imprudently, even impishly, noted that in Moses’ conversations with God, “though Moyses saw his posteriors yet did he never behould his essentiall face or being” (16v). David “knew [God] by a vision of his glorious light, and therefore sayed, Deus vestitur lumine quasi vestimento [God is clothed as if with the clothing of light] but to see him as he is, flesh and blood is not able. Thus have we our proofs of a materiall Elixir of perfection out of holy writ. Let us now se[e] how the sage Cabalists do agree with this doctrine of thee sacre Bible” (16v) Moses had singular experiences

but, as Fludd mentioned in closing, there were others, known as cabalists, who understood how to achieve such intimacy with the divine.

## Fludd and the Cabala

Fludd's and interest in Cabala was not commonplace, but neither was it unique in the seventeenth-century intellectual community. As we saw in the case of Renaissance humanism, because of the great interest in all things ancient and esoteric, including non-Christian sources by fifteenth- and sixteenth-century scholars, Cabala was one of many traditions that enjoyed a huge readership and was the subject of much study.<sup>64</sup> Cabalistic writings held a special resonance for Christian humanists because it was believed that the origins of Cabala lay in the earliest moments of the creation and therefore had a purity that the classical tradition lacked. Indeed, in Hebrew "cabala" means "that which is received through tradition."<sup>65</sup> The sixteenth-century rabbi Elijah Menahem Halfan described Christian scholars' intellectual excitement about Cabala:

In the last twenty years, knowledge has increased, and people have been seeking everywhere for instruction in Hebrew. Especially after the rise of the sect of Luther, many of the nobles and scholars of the land sought to have thorough knowledge of this glorious science (Kabbalah). They have exhausted themselves in this search, because among our people there are but a small number of men learned in this wisdom, for after the great number of troubles and expulsions, but a few remain. So seven learned men grasp a Jewish man by the hem of his garment and say: "Be our master in this science."<sup>66</sup>

The origins of Cabala are difficult to identify with certainty. In its earliest manifestation (apparently coinciding with the beginning of the common era), Cabala appears to be quite similar to the traditional Jewish understanding of the messianic age, a time when the righteous will enjoy goodness and mercy, led by the Messiah, a descendant of David. This earthly experience of salvation contrasts sharply with the traditional Christian belief that salvation is a spiritual, otherworldly experience. A form of Jewish mysticism developed, however, throughout late antiquity and the early medieval period in Europe. It was probably this tradition that led to the development of no fewer than three distinct schools of cabalistic thought by 1300.<sup>67</sup>

Between 1480 and the late seventeenth century, Christian scholars turned to Cabala in numerous ways.<sup>68</sup> The celebrated and eventually notorious humanist

Giovanni Pico della Mirandola (1463–1494) brought Cabala into the Christian scholarly community, where it was received by the Ficinian humanists.<sup>69</sup> When Pico attempted to distinguish contemporary magic, which he defined as diabolical, from legitimate natural magic, he explained that natural magic had been lost, corrupted, or, in the words of Nicholas Popper, “enclosed within the ancient Jewish tradition of cabala—orally transmitted and secret wisdom—that Pico firmly supported and to which he claimed unique access.”<sup>70</sup> However, the appeal of Cabala extended beyond the confines of the Florentine academy. The renowned Christian Hebraist and German philosopher Johann Reuchlin (1455–1522) argued that Pythagoras was “a Kabbalist.”<sup>71</sup> The northern scholar Heinrich Cornelius Agrippa von Nettesheim (1486–1535) studied Cabala and integrated it into Christian theologies in the early sixteenth century.<sup>72</sup> By the late sixteenth century, figures such as Giordano Bruno (1549–1600) and the English mathematician and natural philosopher John Dee were students of Cabala. Dee developed its numerological dimension, turning to Pythagorean principles that Reuchlin had also considered earlier in the century.<sup>73</sup> Thus by the time Robert Fludd was writing of Cabala in the early decades of the seventeenth century, he was part of an august intellectual lineage.

Early modern cabalists drew their knowledge primarily from the *Sefer Yezirah* (Book of Creation), written between the third and sixth centuries CE.<sup>74</sup> This small volume was available to a wide audience in numerous Latin editions and commentaries. The anonymous text argues that the letters of the Hebrew alphabet were “the building blocks of the universe.” Each letter was separated individually and also combined with other letters to establish 231 “basic ‘roots’ or ‘gates’ from which all created things developed.”<sup>75</sup> This foundation of language was crucial to Cabala’s appeal to its Christian students because it spoke to larger efforts to recover and reinstitute a lost but better past. Early modern humanists’ philological interest and expertise led them to think very carefully about the earliest languages spoken by God and his human creation. Indeed, creation itself was recorded in Genesis as the result of merely the voice of God, and Adam was endowed with the knowledge to name the creatures of the world. All of this must have changed, however, with the Fall. As Deborah Harkness observes, “After Adam sinned, his mastery of the divine language was lost along with his ability to communicate with the Book of Nature and God. Thus the disintegration of Adam’s linguistic and communication skills was inextricably tied to the fall of mankind and the decay of the natural world.”<sup>76</sup>

The question of humanity’s original language remained unanswered, of course. The early Greek church fathers, Augustine and Isidore of Seville, believed that the language of Eden was Hebrew, an opinion held by medieval scholars as well.<sup>77</sup> Early modern scholars such as Reuchlin and John Dee thought that it was

Hebrew, Greek, or Latin, with Hebrew the most likely candidate. Guillaume Postel and Cornelius Agrippa also favored Hebrew (although, as Harkness points out, the Swedish natural philosopher Andreas Kempe [1622–1689] made the cheeky suggestion that God spoke to Adam in Swedish, Adam spoke to the animals in Danish, and the Serpent spoke to Eve in French).<sup>78</sup>

Beyond the fact that it was the language of the forebears of Christianity, there was another reason to believe that Hebrew was the original human language. Hebrew is an alphanumeric language—a language in which characters serve as both letters and numbers—and both Jewish and gentile students of the language and tradition believed that through the knowledgeable manipulation of characters, individuals could obtain power over nature and effect miracles.<sup>79</sup> The divine names used to describe Cabala, even numbers or the names of angels, were not arbitrary but were deliberately designed to conceal their mysterious and miraculous power.

Some Christian scholars turned to Cabala because they wanted to use the Jewish mystical system to prove that Jewish beliefs were in fact prophecies of Christ and contained the teachings of Christ. Fludd and other alchemists were interested in Cabala because of its esoteric and magical possibilities. Robert Bostocke wrote that “the secrets of Nature, whose study & use doth flowe out of the Fountaines of Nature, and is collected out of the mathematicall and supernaturall precepts, the exercise whereof is Mechanicall, and to be accomplished with labor, is part of Cabala, and is called by auncient name, Ars sacra, or magna, & sacra scientia, or Chymia, or Chemeia, or Alchimia.”<sup>80</sup> The sixteenth-century natural philosophers Giovanni Pantheus and John Dee attempted to integrate Cabala into their alchemical work. Pantheus’s *Voarchadumia contra alchimiā* of 1559 and Dee’s *Monas Hieroglyphica* of 1564 demonstrate their efforts to use Cabala to read the Book of Nature.<sup>81</sup> According to Harkness, Dee integrated Cabala with his natural philosophy when angels revealed to him the “true cabala of nature.” She writes that “the cabala of nature enabled Dee to have both wisdom (a revealed gift) and knowledge (an acquired understanding of the complexities of the created world). This mixture of wisdom and knowledge, of revelation and natural philosophy, lie at the heart of the cabala of nature.”<sup>82</sup> Although he wrote extensively on angels—rather than converse with them, as Dee had—Fludd turned to alchemy to integrate Cabala with his natural philosophy.

Cabala contained messianic and apocalyptic elements in addition to revelation. Cabalists called God *En Soph*, the infinite. Because God is infinite, he cannot be the direct creator of the world because any creation proceeding directly from him would have to be boundless and perfect, and the universe was clearly neither. By the late fifteenth century, however, Christian cabalists reconciled God’s indirect creation by positing that the three highest *sephiroth* represented the Trinity.

The *keter* was supreme, and it represented God the Father; *chochma*, or wisdom, represented the Logos, God the Son; and *binah*, or understanding, represented mercy and God the Holy Spirit.<sup>83</sup> Christian cabalists could see that through the mediating stages of the *sephiroth*, God's creation was accomplished. The reconciliation of Cabala with Christian doctrine was crucial to its acceptance within the Christian community.

Essentially, Cabala provided a path through which humanity could be fully integrated into the larger cosmos. Each individual possessed all aspects of the creation within and as such could recognize the harmonies of the world and express those harmonies in words.<sup>84</sup> The *sephiroth* also served as a dialectical process: The separate stages were intermediaries that allowed God to intervene in human affairs and thereby enabled individuals to communicate with God and also allowed God to communicate with humanity.<sup>85</sup> Ten separate *sephiroth*, or emanations, collectively formed the *Adam kadmon*, or archetypal man. The *sephiroth* revealed God to an individual who sought him in a gradual and increasingly exalted series of steps. According to Fludd, even Moses, who came close but never actually saw the face of God, had ascended to only the forty-ninth of fifty levels. Cabalists, for all their skill, had not reached, and perhaps could not reach, the highest level of the *sephiroth* and communicate with God directly. Still, no other tradition claimed such intimate communication between humanity and the divine.

Fludd's central goal was to renew and restore a deeper communication between humanity and God, and he thus attempted to connect humanity more closely with the natural world. Therefore, alchemy *and* Cabala served to renew mystical elements, while at the same time both appealed to his reverence and humility for phenomena not wholly subject to the bounds of reason. By incorporating Cabala into his theology, he demonstrated how even a Jewish tradition could prove the doctrine of the Trinity. In doing so, he delicately straddled the line between esoteric knowledge and orthodoxy. He used a paradoxical rhetorical strategy by turning to natural philosophy and Jewish theology as it was expressed in alchemy to illustrate orthodox doctrine. Fludd's natural theology was surely intended to supplement orthodox belief rather than replace it. His goal was to bring natural philosophy and Christianity into greater harmony. What Allison Coudert said of Knorr van Rosenroth and F. M. van Helmont was also true of Fludd: "Thus the Kabbalah unlocks the secrets of the two great books God had given man, the book of Scripture and the Book of Nature, since both books—the first dealing with the upper world and the second with the lower—are intimately linked. This great truth leads to another, namely, that the perceived gap between the material and spiritual realms, or matter and spirit, is non-existent. Matter and spirit are simply different ends of a single continuum."<sup>86</sup>



Fludd's first task was to establish the inherent agreement between the Bible, Augustine, and Aristotle. Biblical evidence made clear that air, fire, earth, and water were all present at creation, but he believed that the biblical, extrabiblical, and classical traditions agreed on this point as well. Moses' account of creation was obviously the authoritative version, but he cited Augustine's remark that the love of God was "fiery" and infused the elements with life itself, which echoed accepted Aristotelian knowledge as well. Once he had established the essential unity of interpretation that the authorities held on creation, Fludd could proceed with an even more complex discussion, this time incorporating numerals into his argument. In this text as well as in his *Mosaicall Philosophy*, he examined Pythagorean themes. The belief that profound theological and philosophical truths were secreted in numerals was ancient, and, like alchemy, experienced a resurgence in the Renaissance.

The first-century architectural commentator Vitruvius argued that the human body represented the divine proportions of the universe. Vitruvius suggested, in John MacQueen's words, "that numbers, ratios and geometric figures link the arts generally, by way of the microcosm, to the macrocosm." Numerology could be applied to architecture, arts such as painting, and of course music, but it could also be applied to language.<sup>87</sup> It was in this application that numerology became significant in Fludd's study.

Numerology referred to the system of interpreting a group of letters, a word, or sometimes a group of words not on the basis of their linguistic meaning but according to their numerical value.<sup>88</sup> *Gematria*, an aspect of Cabala, grew out of the alphanumeric tradition of Hebrew; the word itself is probably a corruption of the Greek *geometria*, which was written as *gmtr*.<sup>89</sup> Just as the ancient mystery that attended Cabala fascinated early modern scholars, theologians, and natural philosophers, so did the hidden symbolism of numerology. The search for mathematical order and symmetry knew no bounds. The biblical texts had always been subjected to rigorous mathematical scrutiny. Theologians not only attributed significance to the numbers 1, 3, and 12; 4, 6, and 7 were also rife with symbolic meaning for the faithful mathematician. In Fludd's alchemical texts the numbers 1, 7, 12, and 1,000 all had profound theological significance. It was 3 and its factors that Fludd seemed to think were particularly significant:

And Plato calleth [the primary form] the soule of the world which he measured by .999. for three times .9. amounting unto .27. maketh the cube of the root. 3. which is the most perfectest number and therefore attributed unto the soule or first act in every creature. as .2. which is the number of confusion (as Pythagoras sayeth) is the roote of matter whos square is .4. and therefore his root<sup>90</sup> is 8: This .999. of Plato by the addition of the Cabbalists

Aleph which signifyeth .1. in Arithmetick maketh up .10000.<sup>91</sup> beyond the which ther is noe denomination: and therefore as Aleph was one. and consequently the beginning so also is it that on[e] which is the end of all things.<sup>92</sup>

Over the course of his argument Fludd argued that the Hebrew language and numerology gave credence to the doctrine of the Trinity. Like Tymme, who also turned to alchemy to explain the Trinity, Fludd used his occult knowledge to prove its inherent logic. Because aleph was one, we are told, this number was both the beginning and the end of all things. With a slight variation, he returned to his equation of unity, trinity, duality, and unity: “from perfection or unity we come unto imperfection which is duality and from thence by death and putrefaction we must passe unto trinity which uniteth us againe, after the example of divinity, unto unity from whence we came” (21v). This statement was swarming with alchemical language: perfection and imperfection, unity, duality, and trinity—all were terms that held rich alchemical as well as theological significance. Moreover, aleph, the first character in the Hebrew alphabet, possessed enormous significance for Fludd. In conjunction with the *Timaeus* (Plato’s cosmological dialogue), aleph brought the Hebraic and classical traditions in line with Christianity.

For Fludd, aleph signified not simply humanity but matter itself. He said that cabalists transformed the dark aleph into a light aleph. The theological significance of this remark becomes clearer in his observation that “Aleph is converted into bright and shining Aleph, which Aleph eyther way taken is ment and understood for God” (17v). God, the creator of light and darkness, was both the beginning and the end. “By this his shining forth,” Fludd wrote, “the world was proportioned and limited, so that as dark Aleph was Deus latens and principium [the hidden God and the beginning], so also is light Aleph Deus patens & rerum omnium finis & perfectio [the visible God and the end and completion of all things]” (18r).

The theological significance of aleph extended, however, beyond God the Father and Creator to God the Son: “Now when that Aleph or God hath shined out of darknes they calle him Beth. which is the second Hebrew letter which added unto Aleph make Ab. which is as much to say as pater, father, which hath a reference unto a sonne . . . wher Aleph is the hieroglyphick of the father and Beth of the sonne springing from the father by a divine emanation” (18r). Unsurprisingly, Fludd also correlated this discussion with the doctrine of the Trinity: “We se that Aleph signifyeth both Alpha and Omega, the beginning and the end, and therefore also it is their trinity in perfection, for .3. seemeth to retourne from the binary confusion into the unity, from whence it came, and therefore .3. is the root of the progression of all formall perfection: it is the numerus numerans or number from which all numeration is heweth” (27r).

Although Fludd did not mention scripture in this passage, its intention was fundamentally Christian; it was a classical, numerological, and cabalistic demonstration of the unity of knowledge. In Plato's *Timaeus* the primary form was measured in a number divisible by three, which, according to Fludd, was the most perfect number; confusion or chaos was represented by the number two.<sup>93</sup> He demonstrated how two led to division by showing that the cube of two was eight and thus that as a whole number it could not be divided by three. The cabalistic figure of aleph signified one and brought Plato's figure of 999 to 1,000, beyond which, "ther is noe denomination" (17r).<sup>94</sup>

But aleph possessed a crucial *physical* significance as well. This was, after all, precisely the point on which Fludd and Scot most clearly disagreed. Fludd's complicated progression from a highly metaphysical discussion of aleph to the physical transformation of matter required that he consider yet another discipline—musicology—to bridge the gap between his spiritual and earthly arguments.

Fludd's commentaries on music have unquestionably been the central focus of modern scholars, in no small part because music was undeniably important in his work.<sup>95</sup> Yet, regardless of Fludd's interest in music, music (like virtually every other discipline he studied) mattered to Fludd because it led him to consider the essential unities in theology, human knowledge, and the natural world. Music was another manifestation of God, and it was especially wonderful because, like God, music was present and yet invisible. Ultimately, however, Fludd was concerned, in his response to Robert Scot's attack on alchemy, not with music but with demonstrating God's actual presence on earth through the practice of alchemy. Alchemy, not music, could demonstrate that faith was a necessary part of natural philosophy.

What made music central to Fludd's argument was that, despite his proclaimed interest in demonstrating the physical experience of alchemy, music was the only approach he used that actually *was* physical. While music might not be visible, it is certainly sensible, and therefore it is quite different from the intellectual and spiritual approaches he had taken thus far to prove the worth of alchemy. The unison of music, he argued in "Truth's Golden Harrow," was the fountain from which all other concord flowed (27r).<sup>96</sup> In some of his most mystical and tortured prose—which is saying something—he argued that music embodied the *summum bonum*, or greatest good. The harmony of numbers and letters, the alpha and the omega, was present in music: "as great Aleph is to litle Aleph or Omega to Alpha so is Diapason unto Unison the worlds spirit" (27v). The analogy was significant: a diapason is a musical term denoting the interval of an octave, the highest and lowest notes of the musical scale. Aleph was a diapason that encompassed the fullest possible range of harmony (27r).

However, music, like all earthly things, was subject to discord. Harmony, Fludd observed, existed in a world of “Diatessaron” (the interval of a fourth in ancient and medieval music), and this world was subject to corruption. Fludd correlated the concept of diatessaron with the four corruptible elements of the physical world. Yet this dissonance was also subject to “the celestiall or quintessential spirit which serveth in the compound body in lieu of a soule unto the body: so that the mentall beame soundeth forth the harmony of diapason in man.” He correlated his quintessential or fifth spirit with the musical term “diapente” (the consonance or interval of a fifth in ancient and medieval music). His “mentall beame,” then, would not only restore his body to its harmonious state with nature but would extend to all substances and creatures on earth (27v). Through the harmony of music aleph thus entered the physical world, where it was “subject to mutations” and became a body of matter like all others, to be corrupted or exalted. His “mentall beame” was the transforming force of life itself; it suffused aleph, multiplying its degrees of perfection exponentially. Music, in this instance, was both a medium and a philosophers’ stone in itself, an agent that Fludd used to move from the Hebrew language to the physical world, a conduit between the divine perfection of the heavens and the corruptible but redeemable earthly world. Fludd’s correlation of cabala, numerology, and music, as complex and elusive as it appears, was not unique. His perception of the universe was based on the assumption that there was a cosmic harmony in the universe, and this notion is reminiscent of the Scottish physician William Davidson.<sup>97</sup>

Fludd concluded his long manuscript with a final summation of how alchemy represented humanity’s hope for redemption in a corrupted natural world: “Wherupon I conclude that the materiall Elixir of the philosophers is not therefore to be excluded, because the shadow of it, which is morality is not to be rejected, . . . Look therefore for a reall ☿ [mercury] of the philosophers, and in it search a sonne which can give light unto the darknes as wel of bodies as soules” (56v–57r).

Fludd’s search for a “sonne” through which spiritual as well as physical healing could occur may have more historical resonance than his labyrinthine treatise may appear to possess. On June 20, 1624, James Ussher, the Irish bishop of Meath, preached a sermon before James I that “was much admired, and the King ordered him to print it.”<sup>98</sup> Indeed, the sermon appeared in print that year and again in 1625, and again under Charles I, in 1629 and 1631 (for not only did James appreciate the sermon but it seems his son did too), under the title *A Briefe Declaration of the Universalitie of the Church of Christ, and the Unitie of the Catholike Faith*. It began with a reminder that when the ark of the covenant was moved, Moses was to pray, “Arise up Lord, and let thine enemies be scattered, and let them that hate

thee, flee before thee" (Num. 10:35). Ussher told his royal audience that the ark was "a figure of Jesus the Mediatour of the new Covenant: the great King, Prophet and Priest of his Church. Therefore was it ordered, that the Arke should have a crowne of gold about it: (Exodus 37:2)." Ussher proceeded to explain that Jesus became the next physical presence of God on earth and, upon his ascension, "went to the Father; making his last remove unto the high Court of Heaven, where he is to reside untill the time of the restitution of all things."<sup>99</sup> The reassurance that was left for humanity was "the vertue comming from him, by the operation of his Word and Spirit; so wee shall finde him in his Temple upon earth, present with us alwaies, even unto the end of the world" (5).

Ussher returned repeatedly throughout his sermon to the image of the church as a "mysticall bodie." Christ's church "so neerly conjoined unto him, that he holdeth not himselfe full without it, but as long as anie one member remaineth yet ungathered and unknit unto this mysticall bodie of his, he accounteth, in the meane time somewhat be deficient in himselfe" (7–8). After quoting Psalm 2, Ussher said, "Aske of me, and I will give thee the heathen for thine inheritance, and the uttermost parts of the earth for thy possession," adding, "and to his mysticall bodie, the Catholick Church accordingly" (9). He used this term again at the end of the sermon, when he warned his audience that the church could only grow from "from faith to faith . . . else thos mayest justly suspect, that thy growth is not found, and answerable to that which the Apostle sheweth to be in the mysticall body of Christ" (64–65).

There was nothing alchemical about Ussher's sermon, but there was something very tactile about it. His emphasis on the ark, the crown (of gold, no less), and the earthly presence of God—the "mysticall bodie" of the church—all speak to the physical presence of God on earth and, moreover, to how commonplace this notion was. Ussher was one of the figures of the Church of England who advocated that the church must be catholic—that is, universal. He allowed that there might be differences within individuals' understanding, and yet those differences ought not to exclude anyone from the universality of the church (15–16). Although Ussher insisted that all Christians must assent to certain absolute doctrinal truths, he also averred that faith was the foundation of salvation and that it outweighed any doctrinal uniformity. This universal church was to be Protestant, but it was not an explicitly exclusionary church. Perhaps it should come as no surprise that Ussher was sympathetic to John Dury's goal of reconciling the Protestant denominations on the Continent, even giving Dury an annual gift.<sup>100</sup>

Ussher's sermon contained another resonant image. The image of the ark was clearly an article of war, and in 1624 no image could be more timely. Thomas Cogswell's precise study of these last critical years of James's reign argues that the king's goal of a united Protestantism, accomplished by breaking the Spanish stronghold

in Europe, seems to have been embraced by Parliament almost as enthusiastically as by the natural philosophers of the day, though by vastly different means.<sup>101</sup> The parliament of 1624 authorized the funding of England's entry into the Thirty Years' War, specifically to restore Protestant authority in the Palatinate. Frederick V, elector Palatine and the most prominent German Calvinist, had accepted the crown of Bohemia in an election disputed by the emperor Ferdinand II and against the advice of James I. Frederick may have led the Protestant Union, but Ferdinand was determined to reverse the momentum of Protestantism in the Holy Roman Empire. In November 1620 Ferdinand's forces soundly defeated Frederick's in the battle of White Mountain, just outside Prague. Frederick and his family retreated to The Hague, and James, albeit reluctantly, agreed to assist his Protestant brother in the restoration of the Calvinist foothold in Germany. Since 1614 James had sought a dynastic marriage for his younger son, Charles, with the Spanish Habsburgs. The Spanish victory in the Palatinate in 1620, however, gave the Habsburg dynasty a considerably stronger negotiating position in the marriage, and the Habsburgs insisted that Charles convert to Roman Catholicism, along with Frederick's heir and James's son-in-law, Frederick Henry. To these demands, James could not agree.<sup>102</sup>

England's entry into the war was a disaster, but James never lost faith in his pursuit of a unified Christendom. Four days before he died, on March 27, 1625, he asked to receive communion, and when he recited the Apostles' Creed, he added, "Hee beleeveth them all, as they were received and expounded by that part of the Catholique Church which was established here in England."<sup>103</sup> To his very last breath, James believed that he was head of the most open, most inclusive, most catholic church in Christendom.

In 1625 Francis Bacon published his *Essays* and dedicated the volume to the duke of Buckingham, the newly crowned monarch's favorite courtier. The third essay, "Of Unity in Religion," is characteristically circumspect, written in the voice of a lawyer and courtier. However, Bacon, like James I, valued the benefits of peace and charitable understanding and the clear limits of using force in the matter of religious division: "Men must beware, that in the Procuring . . . of Religious Unity, they doe not Dissolve and Deface the Lawes of Charity, and humane Society. There be two Swords amongst Christians; the Spiritual and Temporall; And both have their due Office, and place, in the maintenance of Religion. But we may not take up the Third sword, which is Mohomets Sword, or like unto it; That is, to propagate Religion by Warrs, or by Sanguinary Persecutions, to force Consciences."<sup>104</sup> Although Bacon understood that there were times when the sword would be required, conversion was clearly not one of them. Like Tymme, Fludd, Ussher, Dury, and even perhaps James VI and I, Bacon understood that healing the divisions of society had to begin with spiritual and intellectual transformation—otherwise the effort would be illusory.<sup>105</sup>

Thus an alchemist like Fludd fits more neatly within the religious culture of early modern England than we might first suspect. His view of the role of alchemy in seventeenth-century England was formed during a time when the question of appropriate religious expression was becoming one of the most controversial issues of the day. Certainly Fludd was not trying to appeal to mainstream Protestants when he wrote "Truth's Golden Harrow." However, his argument accorded generally, and significantly, with the larger direction of the Church of England in the 1620s and 1630s. Anglican congregations in the 1630s were beginning to take a greater interest in the worship experience. Vestry records of parishes throughout England testify to the dilapidated condition of churches but also to congregations' initiative and willingness to repair church buildings and improve the conditions of worship. Kevin Sharpe suggests that, "for all we hear of puritan and popular hostility to the high church liturgy of Laud, the congregations of many parishes were willing to pay for furnishings and for an order and decency that was not so removed from Laud's beauty of holiness as some historians would like to believe."<sup>106</sup> Sharpe's cautionary note to the hostility of Calvinist and Puritan opposition to the visual aspects of worship needs to be taken very seriously. Both Fludd and church officials expressed the belief that religious worship was a vital part of spiritual life. The complex political and religious circumstances of seventeenth-century England created odd bedfellows indeed.

Yet Archbishop William Laud, that vigorous promoter of preserving church liturgy, would have vehemently opposed Fludd's broad understanding of religious expression. "No one thing hath made conscientious men more wavering in their own minds," he wrote, "or more apt and easy to be drawn aside from the sincerity of religion professed in the Church of England than the want of uniform and decent order in too many churches of the kingdom."<sup>107</sup> Despite Laud's best efforts, he failed to bring religious unity to England. Over time, religious life only became more varied, not less, and in the first decades of the seventeenth century the English wrestled with this very problem. While church wardens were repairing altars, alchemists were appropriating the language of the Anglican liturgy into their laboratories. Furnaces and vessels became their altars and founts, for the purpose of presenting a wider vision of Christianity than Ussher, Bacon, and certainly Laud could have ever imagined.

Yet it was precisely in this variation of religious expression that the search for unity occurred. The first half of the seventeenth century witnessed an effort by various groups in England and on the Continent: Christian humanists, Rosicrucians, the Hartlib Circle—all wanted a universal reformation that would unite a divided Christendom. Robert Fludd was part of a community of alchemists who saw the solution in the irenic, healing quality of alchemy. Indeed, irenicism was one of the unlikely progenies of the Renaissance and Reformation. At least a few

individuals in the sixteenth century believed that religious unity was unequivocally valuable.<sup>108</sup> Fludd's vigorous faith was directed toward using his knowledge of scripture and occult wisdom to find unity in a divided world.

The express goal of Fludd's natural philosophy was a deeper understanding of God. He clung to Paracelsian principles because he believed that their Christian credentials were impeccable and yet supple enough that he could incorporate new ideas into his preconceived epistemology. His interests were as broad as those of any of his predecessors or contemporaries (with the possible exception of the Elizabethan mathematician and magus John Dee), but the sheer breadth of his work has allowed us to lose sight of the central issues that preoccupied him. Knowledge of theology and philosophy was only the first element of the extraordinarily complex intellectual milieu in which Fludd and his colleagues wrote. Fludd's rhetoric was significant not because he used the Bible to support his arguments but because he was willing to depart from it. He integrated Cabala, numerology, and musicology as well as alchemy into his work. Christianity, however, was the force that propelled him through his medical and natural philosophical endeavors and, because of its deep affinity with his religious beliefs, toward alchemy in particular. It did not matter to him that he had "proved" the physical reality of alchemy through an argument based upon theological, philosophical, and occult arguments—not physical ones—he *believed* in alchemy's physical reality, and that was all that mattered. Fludd did not make such a distinction, of course; for him, the physical and the spiritual were as mysteriously inseparable as the elements of the Trinity.

Almost as mysterious as the Trinity is the influence of "Truth's Golden Harrow." Curiously, folio 44v to the end of the manuscript, folio 57v, is in another hand, clearly a scribal copy. What happened to the conclusion of the manuscript that Elias Ashmole was convinced Fludd himself had written? Parts of the manuscript are very worn, even as it is so well protected by the Bodleian Library. Was the conclusion so worn that a scribal copy was necessary to replace the original? Though we will never know the answer to that question, Lauren Kassell's work on alchemical manuscripts in early modern England suggests that we are safe in assuming that Fludd's well-worn manuscript circulated among those sympathetic to its message at the very least, sustaining much the same message that Thomas Tymme had conveyed a few years before: that alchemy could prove theological doctrine.

Fludd remained in London for the rest of his life and died in his home on September 8, 1637. He never married, maintaining throughout his life that it was best that a man remain celibate and chaste. His will directed his executors to have three pounds sterling distributed to the poor of his parish, Saint Katherine Coleman in London. He also asked that his body be brought back to his childhood



home and buried in the churchyard of the Bearsted parish church in Kent. For the Bearsted parish he immodestly requested a monument modeled after William Camden's in Westminster Abbey, and that the inscription record his seven largest publications. Although he had no heirs, he had a large extended family, and part of his fortune was set aside to pay for their mourning clothes and their journey to attend his burial.<sup>109</sup> Fludd's life, notable for its public debates, was brought to a close with a public flourish.

Christianity based on scripture and commentary, or on scripture alone, had failed to achieve religious unity. Fludd died believing that unity would be accomplished only when Christianity became more deeply integrated with natural philosophy. He thought that it was possible to achieve intellectual certainty about matters of faith, and that the revelation of this elusive goal would include the occult and, in his mind at least, divine tradition of alchemy.

His contributions to governing, rhetoric, and science aside, Francis Bacon was trained to be a lawyer, and although he never practiced law, he used his legal expertise and experience to sniff out all manner of frauds and pretenders: astrologers, magicians, witches, necromancers—virtually all practitioners of the occult.<sup>1</sup> Of these offenders, alchemists were the most egregious transgressors of the vigorous methods he advocated. In a manuscript written in 1603 and titled “The Masculine Birth of Time,” he wrote, “But there on the other side I see the Alchemists arrayed, Paracelsus among them conspicuous for his braggart air. His presumption calls for a particular reproof. I have been taking to task people who peddle falsehoods; your stock in trade is portents. In Meteorology, O you rival of Epicurus, what drunken oracles do you not pour forth!” He cross-examined and attacked the posturing defendants: “You, Paracelsus, adopted son of the family of asses, owe [Peter Severinus] a heavy debt. He took over your brayings and by the tuneful modulations and pleasant inflexions of his voice made sweet harmony of them, transforming your detestable falsehoods into delectable fables.”<sup>2</sup>

In his *Novum Organum* of 1620, Bacon’s most complete statement on natural philosophy, he wrote that “chemists out of a few experiments of the furnace have built up a fantastic philosophy framed with reference to a few things.” That alchemists had constructed complete, systematic philosophies based on their limited observations angered Bacon, and he contemptuously called those who committed this error “empiricists.” Those who accepted such experimental results, he charged, had been “infected” by their imaginations, and even though the results may seem probable or even certain, to anyone else they seemed “incredible and vain,” and “there is a notable instance [of this] in the alchemists and their dogmas.”<sup>3</sup> Finally, he said, if a natural philosopher considers

those arts which are deemed curious rather than safe, and look more closely into the works of the Alchemists or the Magicians, he will be in doubt

perhaps whether he ought rather to laugh over them or to weep. For the Alchemist nurses eternal hope, and when the thing fails, lays the blame upon some error of his own; fearing either that he has not sufficiently understood the words of his art or of his authors (whereupon he turns to auricular whispers), or else that in his manipulations he has made some slip of a scruple in weight or a moment of time (whereupon he repeats his trials to infinity).<sup>4</sup>

Bacon was prosecutor, judge, and jury in the court of natural philosophy, trying and condemning alchemists for committing egregious errors of method and design. He publicly exposed their fraudulent assumptions, demonstrated the poverty of their arguments, pointed out the flaws in their methods, and scoffed at their alleged authorities. Alchemy, lacking proven, much less predictable or orderly, methods that would provide reliable results, withered under Bacon's blistering prosecution.

And yet, as with so many aspects of Bacon's thought, his attitude toward alchemy and the occult was not as clear as it might seem. In 1594, when he was a youthful adviser to the court of Elizabeth I, Bacon was invited by a group of princes, nobles, and courtiers to a Christmas celebration at Gray's Inn. In a court masque he counseled that the monarch ought to direct the state toward a conquest of nature. He advised the court to begin "searching out, inventing and discovering of all whatsoever is hid in secret to the World, that your Excellency be not as a Lamp that shineth to others, and yet seeth not it self; but as the Eye of the World, that both carrieth and useth Light." The rising courtier thought that this task could be accomplished through what he called "four principal Works and Monuments of your self." The first monument would consist of a library of books and manuscripts from all regions and in all languages, the second of a garden, so that Elizabeth's court would have "a Model of Universal Nature made private." Third, a cabinet was required, one that would hold not only the art and accomplishments that individuals had made but also artifacts from nature. Finally, the fourth monument was to be "a Still-house so furnished with Mills, Instruments, Furnaces, and Vessels, as may be a Palace fit for a Philosopher's Stone. Thus when your Excellency shall have added depth to Knowledge to the fineness of Spirits, and greatness of your Power, then indeed shall you lay a Trismegistus."<sup>5</sup>

Bacon's references to alchemical equipment—mills, instruments, furnaces, and vessels—and to the philosophers' stone and the mysterious and reputed Egyptian alchemist Hermes Trismegistus are worth considering for a moment. The philosophers' stone was of course the material that was believed to transmute lead into gold, heal injured bodies, restore political stability, and renew and redeem the natural world and society itself. These references alone may not be compelling

evidence of his sympathetic attitude toward alchemy and the occult, but neither should they be dismissed. These four “Works and Monuments” were his foundation for a whole new approach and attitude toward knowledge, and it is unlikely that he would use a metaphor for one of his monuments that represented a tradition he rejected unequivocally.<sup>6</sup>

However, this was not Bacon’s only ambiguous reference to alchemy. In the *Novum Organum*, immediately after criticizing alchemists in the passage quoted above, he wrote, “Not but that Alchemists have made a good many discoveries, and presented men with useful inventions. But their case may be well compared to the fable of the old man, who bequeathed to his sons gold buried in a vineyard, pretending not to know the exact spot; whereupon the sons applied themselves diligently to the digging of the vineyard, and though no gold was found there, yet the vintage by that digging was made more plentiful.”<sup>7</sup> Even when he appeared to be condemning alchemy, he could equivocate: “The study of nature with a view to works [i.e., ends],” he observed, “is engaged in by the mechanic, the mathematician, the physician, the alchemist, and the magician; but by all (*as things now are*) with slight endeavour and scanty success” (emphasis added).<sup>8</sup> Although he was clearly criticizing alchemists and magicians, the fact that he grouped them together with practitioners of substantial, respectable disciplines suggests that his approach to alchemy was not as neat and tidy as it may appear.

While some scholars have not appreciated the complexity with which Bacon viewed the alchemical tradition, historians of science have looked at his comments on alchemy quite carefully and have identified his debts to alchemical principles and traditions.<sup>9</sup> However, what has not been made clear is *why* Bacon chose to veil his vision of alchemy. Why would he direct his frustration so explicitly at a tradition to which he was indebted, to a practice in which he even at times engaged? Why would he *appear* to reject it? Why did he incorporate aspects of alchemy into his natural philosophy and yet write of it at times so disparagingly? Why, even in the midst of his criticisms of alchemy, was he ultimately reluctant to discard the ancient pursuit from his natural philosophy? Why would someone with such formidable rhetorical skills express himself on this issue so ambiguously?

In his elegant biography of Bacon, Perez Zagorin may begin to provide an answer.

Francis Bacon lived two separate but interconnected lives. One was the meditative, reserved life of a philosopher, scientific inquirer, and writer of genius, a thinker of soaring ambition and vast range whose project for the reconstruction of philosophy contained a new vision of science and its place in society. The other was the troubled, insecure life of a courtier, professional lawyer, politician, royal servant, adviser, and minister to two

sovereigns, Elizabeth I and James I, who from early youth to old age never ceased his quest for high position and the favor of the great. It was the first of these two lives that brought Bacon the lasting fame for which he strove, and established his claim to the permanent interest of posterity. The second, however, absorbed a large part of his time and energy, pitting him against rivals in a continual competition for office and power, diverting him from pursuing some of his most cherished intellectual goals, and forcing him to leave his main philosophical enterprise fragmentary and incomplete.<sup>10</sup>

Events in his life as well as his personal characteristics probably contributed to the man Bacon would become. When he first appeared in the court of Elizabeth, it must have seemed that his career would have no limits. Born in 1561 to Sir Nicholas Bacon, a lawyer, statesman, privy councilor, and Lord Keeper of the Great Seal, the highest judge in England, Bacon's early days were most promising. Elizabeth was quite impressed with the young man's intellectual prowess. He began his law studies at Cambridge at the usual age of twelve, and by 1576 was admitted to Gray's Inn.

However, the fragility of a sixteenth-century political career was never so poignantly evident as when Nicholas died in 1579 without a will. Francis was serving in a diplomatic legation in France at the time, and he returned to England immediately. Adrift in Elizabeth's court without independent means, Bacon was forced to earn his living as a lawyer, although as early as 1580 he tried—and failed—to receive patronage through his uncle Lord Burghley, the favored counselor to Elizabeth. In 1581 he was elected to the House of Commons for Bosinney, a Cornish borough, where he remained for all but one of the parliaments in the reigns of Elizabeth and James.

It was during the parliament of 1593 when Bacon made perhaps the most impolitic move of his career: He suggested that Elizabeth's request for taxes to fund the war against Spain be spread over six rather than the requested three years. As reasonable as this position may have been, Elizabeth was angered and never fully forgave him. Although he asked for Burghley's intercession, Bacon never received more than tidbits of royal patronage thereafter. He never allowed his conscience to supersede his ambition again. He spent the rest of his life bowing and scraping for preferment. It could not have been pleasant. His divided ambition to be a courtier and a scholar was surely one reason why understanding the motives of his life remains so elusive.<sup>11</sup>

Understanding how and why Bacon approached the alchemical tradition as he did helps us to comprehend his methodologies and, more fundamentally, his view of how knowledge was gained and revealed. As profound as his influence was on modernity, one purpose of this study is to place his ideas within the

context of early modern culture and society. At least two factors—his reverent approach to all knowledge, both sacred and profane, and his politic approach to expressing his views—will help us to understand why he expressed his views toward alchemy so elusively. Identifying and clarifying his attitude toward alchemy will not only better locate his position on the map of seventeenth-century intellectual history but will highlight the peak of the alchemical tradition in late sixteenth- and early seventeenth-century political culture. Thus our question: How does alchemy help us to understand the place of reverence and revelation in Bacon's thought? Understanding his spirituality, intellectual philosophy, and political strategy will provide a clearer, more historically grounded understanding of Francis Bacon.

### Alchemical Irreverence and the Sacred Nature of Knowledge

The number of Bacon's writings devoted exclusively to religious issues is small, and most of them were published posthumously by his chaplain and biographer, Dr. William Rawley. His religious writings are also some of his earliest, composed mostly in the 1580s and 1590s, after he had returned from serving as attaché in the English embassy in Paris. Yet we err if we consider Bacon's religious expressions solely in terms of his direct statements. Although he wrote very few explicitly theological treatises, this study suggests that he approached virtually all aspects of life, from governing a state to scholarly study, with religious reverence, and thereby broadened the boundaries of the religious culture in England.<sup>12</sup>

Bacon's utopia *New Atlantis* (1627) depicts a mythical island, Bensalem, that is discovered by the crew of a European ship after they are lost in the Pacific Ocean. The sailors are conducted into Bensalem's House of Strangers, led by a Christian priest. We learn that Bensalem was founded by the "Finger" of God in the earliest days of the church, "twenty years after the ascension of our Saviour."<sup>13</sup> Bacon's belief in the sacred nature of knowledge was expressed in the name he gave to the center of learning in *New Atlantis*, "Solomon's House." In another treatise, *The Advancement of Learning*, Bacon called Christian charity a virtue that comprehended all virtues.<sup>14</sup> Even the religious significance of his reference to Hermes in the 1594 Christmas masque at Gray's Inn is notable. Hermes Trismegistus was believed to have been a contemporary of Moses, a man who lived in an era when God walked more closely with humanity and magic was a prominent aspect of the ancient Egyptian and Hebrew societies.<sup>15</sup>

The spiritual and prophetic nature of Bacon's work has also been noted by Charles Whitney, who argues that Bacon's work comprised a delicate balance between reform and revolution. In noting the puzzling character of the word

“instauration” in Bacon’s *Instauratio Magna*, or *The Great Instauration* (1620), Whitney points out that in the seventeenth century the word had the dual meaning of both restoration and a new beginning. “Instauratio” is usually translated simply instauration, meaning a restoration of something lost, but Whitney believes this is misleadingly narrow in Bacon’s case.<sup>16</sup> In his dedication to James I, Bacon wrote, “I may yet perhaps, through the kindling of this new light in the darkness of philosophy, be the means of making this age famous to posterity; and surely to the times of the wisest and most learned of kings belongs of right the regeneration and restoration of the sciences.”<sup>17</sup> Bacon’s natural philosophy was driven by the rich meaning he associated with instauration: regeneration, restoration, and redemption. For theological, philosophical, and even political reasons, he believed in individuals’ capacity for redemption. One of the common themes in his writings was his belief that individuals could restore to the present what had been lost in the past. He turned the tables on previous philosophies, calling *his* generation ancient and the writings of antiquity the fruit of a youthful humanity.<sup>18</sup> It was his and succeeding generations’ responsibility to restore the perfection and beauty of the past so that humanity might be redeemed in the sight of God, and he attempted to use his position at court to achieve this goal.<sup>19</sup>

We see this delicate balance between prophetic fulfillment of the past and fundamental change for the future crystallized in Bacon’s attitude toward alchemy. For as much as he wanted to level and clear away alchemy’s old mystical and spiritual associations, he still believed that the possibility of transmutation remained viable. His chief concern was probably that alchemical experiments ought to be consistently replicable, provided that the correct procedures were followed. In his *Novum Organum* he outlined the process by which “bodies,” presumably metals, could be transformed. He used none of the divine invocations common to earlier alchemists; instead, he provided an almost workmanlike description. He began by describing gold as “yellow in colour, heavy up to a certain weight; malleable or ductile to a certain degree of extension; it is not volatile, and loses none of its substance by the action of fire; it turns into a liquid with a certain degree of fluidity.”<sup>20</sup> Beginning the alchemical process with accurate descriptions of the properties of the metals in question was crucial to a successful transformation. Understanding the qualities of gold allowed one to transform another metal into gold.

This transformation, however, was only worth pursuing, in Bacon’s view, if one disregarded the ancient associations that Paracelsians and mystical magi held so dear. Alchemy, like all intellectual pursuits, had to be subjected to a rigorous methodology. He may have deplored alchemists, but he never rejected or tried thoroughly to discredit the practice of alchemy itself. Bacon’s enemy was not the practice but its misguided practitioners, and the most misguided of all were the Paracelsians.

Although both Tymme and Fludd saw clear relationships between Christianity and Paracelsianism, Bacon, far from seeing Paracelsian alchemy as pious, believed that the mystical and imaginative qualities of the tradition were dubious and, worse, irreverent. He thus made explicit and implicit references to Paracelsus or Paracelsians in his attacks on alchemy (“You, Paracelsus, adopted son of the family of asses”) or accused alchemists of having been “infected” with their imagination. The uncertainty inherent in the tradition and their resilient arrogance angered him further. However, it was not merely the inappropriate and irreverent aspects of Paracelsianism that annoyed Bacon. The reforms he proposed were not only intended to redeem politics and government but had virtually cosmic implications, reaching back to the Fall itself. His conception of the Fall illuminates the reasons for his hostility to the traditional methods of alchemy.

Adam and Eve’s fall from grace presented a particularly difficult philosophical problem for Bacon. They had eaten the fruit of the Tree of Knowledge, fruit expressly forbidden to them by God. If the search for knowledge was the sin that stained the fabric of humanity since the beginning of time, how could he reconcile his belief that knowledge and its pursuit needed to be completely reformed? He responded to this problem by noting that Adam and Eve’s sin was not their desire for knowledge but their pursuit of it without God’s permission, and indeed against his express command. In his “Confession of Faith,” written sometime in the 1590s, he explained more precisely the sin of Adam and Eve. He believed that Adam and Eve had been created innocent and given free will. Adam’s sin lay in his desire “to depend no more upon God’s will revealed, but upon himself and his own light, as a God; than the which there could not be a sin more opposite to the whole law of God.”<sup>21</sup>

Even as he wrote these lines, however, Bacon was working on his first major work, *The Advancement of Learning*, published in 1605, in which he addressed the questions raised by the Fall at length. Adam had already been endowed with knowledge of the natural world. That he could name the animals according to their properties was clear evidence that God did not condemn humanity for being learned. The sin of humanity resided in Adam’s “proud knowledge of good and evil, with an intent in man to give law unto himself and to depend no more upon God’s commandments, which was the form of temptation.”<sup>22</sup> Humanity’s greatest sin was not to seek knowledge but to do so for its own ends, without recognizing that all knowledge began and ended with God. Knowledge would be revealed to Adam as God saw fit.

Bacon developed this insight further in *Valerius Terminus* (1603). The essay begins with a discussion of how Lucifer fell because he aspired to be higher than God: “The angel of light that was, when he presumed before his fall, said within himself, *I will ascend and be like unto the Highest*; not God, but the highest . . .



therefore his climbing or ascension was turned into a throwing down or precipitation." He compared Adam's fall to Lucifer's: "but again, being a spirit newly inclosed in a body of earth, he was fittest to be allured with appetite of light and liberty of knowledge; therefore this approaching and intruding into God's secrets and mysteries was rewarded with a further removing and estranging from God's presence."<sup>23</sup> The prideful search for knowledge without God's sanction was the cause of sin both in heaven and on earth.

Yet by 1620 Bacon's perception of the Fall had changed slightly. The *Novum Organum* closes with words of hope for a humanity suffering from Adam and Eve's decision: "For man by the fall fell at the same time from his state of innocency and from his dominion over creation. Both of these losses however can even in this life be repaired: the former by religion and faith, the latter by arts and sciences."<sup>24</sup> Before Adam's descendents could recover their "dominion over creation," they had to be restored to innocence. Indeed, recovering the purity, the innocence, the dependence of humanity on God appears to presuppose human dominion over nature—Bacon had already said as much in his *Valerius Terminus*, when he gave primacy to belief over knowledge: "Therefore attend his will as himself openeth it, and give unto faith that which unto faith belongeth; *for more worthy it is to believe than to know*, considering that in knowledge (as we now are capable of it) the mind suffereth from inferior natures; *but in all belief it suffereth from a spirit which it holdeth superior and more authorised than itself*" (emphasis added). Indeed, he reiterated that Adam's "original temptation" lay in his unwillingness "not to depend upon the revelation of his [God's] will."<sup>25</sup>

Only then was Bacon in a position to consider the role of knowledge within a human compass. He said that we must remember that knowledge must be subject only to that which God granted: "the benefit and relief of the state and society of man; for otherwise all manner of knowledge becometh malign and serpentine." Yet even here he continued his cautionary advice, noting that in Paul's first letter to the Corinthians, "as the Scripture saith excellently, *knowledge bloweth up, but charity buildeth up*."<sup>26</sup> He then added his gloss to a later passage in Corinthians: "And again the same author doth notably disavow both power and knowledge such as is not dedicated to goodness or love, for saith he, If I have faith so as I could remove mountains, (there is power active,) if I render my body to the fire, (there is power passive,) if I speak with the tongues of men and angels, (there is knowledge, for language is but the conveyance of knowledge,) all were nothing."<sup>27</sup> Power and knowledge would have to be harnessed for the good of humanity, and only before knowledge was gained appropriately. He echoed yet another New Testament passage when he observed "that it is no less true in this human kingdom of knowledge than in God's kingdom of heaven, that no man shall enter into it except he become first as a little child."

The new methods that Bacon advocated here were the basis of a terrestrial redemption for humanity. Christ had redeemed individuals' souls, but Bacon was offering—quite immodestly—redemption for their earthly lives. God's punishment for the sin committed in Eden was not eternal, but salvation would occur only when individuals approached God with humility, charity, and innocence—anything less was doomed to failure. The deeply religious nature of his work suggests that God's grace presupposed the reason and learning necessary for redeeming a fallen world.<sup>28</sup>

This redemption, like the spiritual one, would not come easily but would be the result of much labor. In the final lines of the *Novum Organum* Bacon promised that success in this endeavor would result only with great difficulty: "For creation was not by the curse made altogether and for ever a rebel, but in virtue of that charter 'In the sweat of thy face shalt thou eat bread;' it is now by various labours (not certainly by disputations or idle magical ceremonies, but by various labours) at length and in some measure subdued to the supplying of man with bread; that is, to the uses of human life."<sup>29</sup> Steven Matthews concludes that Bacon's biblical reference "In the sweat of thy face shalt thou eat bread" (Gen. 3:19), commonly read as a curse, was, for Bacon, "not only a promise, but also a prophecy of human recovery."<sup>30</sup> It was the "idle magical ceremonies" that infuriated him. Alchemists had always insisted that the quest for the philosophers' stone was extraordinarily difficult. Yet, even allowing for the labor involved, critics saw alchemists' work as simplistic. The difficulty and labor of achieving his goals were important elements in Bacon's religious belief.

Despite its adherents' claims to the contrary, Bacon suspected that most if not all alchemists were not only impious but self-serving as well, motivated by the desire for gold. The alchemical tradition was not without controversy, and its claims had been doubted before. Bacon's ambivalent attitude toward alchemy, therefore, was certainly not unique. Alchemists themselves had sometimes criticized the tradition.<sup>31</sup>

One of its more curious critics was Johannes Trithemius (1462–1516), a friend of the famous occultist Cornelius Agrippa (1485–1535), who was sympathetic to many occult practices. Trithemius is even purported to be one of the individuals who trained Paracelsus in the alchemical tradition.<sup>32</sup> The seventeenth-century alchemist Thomas Vaughan (1622–1666), who wrote under the pseudonym "Eugenius Philalethes," cited Trithemius in his alchemical treatise *Magia Adamica* (1650).<sup>33</sup> Despite his understanding of the position of alchemists, however, Trithemius had reservations about them. He had witnessed the enormous amount of time, effort, and money that religious orders had poured into obtaining the philosophers' stone, in vain. Trithemius excoriated alchemists, calling them fools and disciples of apes, enemies of nature and despisers of heaven. He mocked John

of Rupecissa (fl. 1354), saying that he was consumed with studying alchemy and did not devote enough time to useful work (“qui multo tempore Alchimiae deditus, tempus cum labore non satis utiliter consumpsit”).<sup>34</sup>

Trithemius had studied natural philosophy; he was knowledgeable about magic and Cabala and apparently was acquainted with alchemical principles and could distinguish them from traditional ones. He was also abbot of the Benedictine monastery at Sponheim, a position to which he was elected at twenty-two and held for twenty-three years.<sup>35</sup> He saw alchemy as not only trivial but pernicious, a cancer that threatened the well-being of monasteries and religious orders, and he attacked it because of the destruction he thought it was doing to the body of the church. However, Trithemius’s judgment was motivated by the difficult and risky aspects of the enterprise. Because of his ecclesiastical office, he felt obliged to warn others of that risk, but he did not necessarily doubt alchemy’s efficacy.

Other commentators also expressed reservations, if not hostility, about the alchemical process. The Italian chemist Vannoccio Biringuccio (1480–ca. 1539) and the German metallurgist Georgius Agricola (1494–1555) wrote some of the most widely read treatises on metals in Bacon’s day, and both probably shaped Bacon’s approach to alchemy.<sup>36</sup> Yet they, too, held complicated opinions about the alchemical tradition.

Benjamin Farrington has noted that Sir Thomas Smyth brought Biringuccio’s *De La Pirotechnia* (1540) to England, and significant portions of it were translated, making it widely available in Elizabeth’s court.<sup>37</sup> Precisely what edition Bacon saw or could read, however, remains unclear. Cyril Stanley Smith, in the introduction to his collaborative translation of the *Pirotechnia*, points out that the only contemporary translation of the text that purported to be complete was a French edition by Jacques Vincent. However, Smith notes that Vincent’s translation was not a good one, “full of omission, condensation and misinterpretation.” Although it is probably safe to surmise that Bacon read Italian and read Biringuccio, we do not know whether he read the original Italian version or Vincent’s French translation.

Biringuccio wrote deftly on alchemy, expressing concerns that Bacon would later echo.<sup>38</sup> At first he seemed convinced that alchemy was a fraudulent practice. “The more I look in to this art of [alchemists],” he remarked in the first chapter of *Pirotechnia*, “so highly praised and so greatly desired by men, the more it seems a vain wish and fanciful dream that it is impossible to realize unless someone should find some angelic spirit as patron or should operate through his own divinity.” However, he acknowledged that alchemy had a line of distinguished followers, notably Hermes Trismegistus, Raymond Lull, Geber, and William of Occam. Their opinions, he thought, deserved to be accorded some respect. Still, as Bacon would later argue, respect for ancient and medieval scholars and occultists did not confirm the legitimacy of alchemy: “But it is not in this way that such

men persuade those who have good judgment that the art of alchemy is true; for it is evident that in their desire for riches they become blind with credulity, and when they seek to persuade the minds of others that this art is true, the fact of their evident poverty belies them.”<sup>39</sup>

Biringuccio disliked alchemy’s simplification of the complexity of nature. “I would like to be told,” he wrote plaintively, “how [alchemists] can receive at will the influence of the heavens, on which are dependent all inferior things on this convex of the world, and also how men ever know by this art how to purify those elemental substances or how to proportion necessary quantities one to the other, or finally how to carry these substances to perfection as Nature does and make metals of them.”<sup>40</sup> Ingrid Rowland has argued that for Biringuccio, the complex order of the heavens and the natural world was intrinsically bound up with aesthetics, and that the beauty of the natural world was, in part, its complexity.<sup>41</sup> He saw the majesty of God in the myriad details of nature, a vision that Bacon clearly appreciated and shared as well.

Yet Biringuccio confessed that he knew little about the practice itself.<sup>42</sup> This may have been true, but given that the Catholic Church, in the wake of the Protestant Reformation, was sensitive to even the appearance of heterodoxy, and was inclined to view all occult practices as inimical to its goals, even the appearance of ignorance may have been a protective shield for him to bear.<sup>43</sup> More significantly, despite his seeming ignorance of the tradition and the doubts he expressed in the opening chapter of the *Pirotechnia*, he tried to justify its practice. Alchemists could take only one of two paths, he said, one good, the other evil. The followers of the good path called their work “just, holy and good,” and they called themselves “but imitators and assistants of Nature.” Although he doubted that such practitioners would ever succeed in their goal, he believed that good would result from their efforts. “It is surely a fine occupation,” he wrote, “since in addition to being very useful to human need and convenience, it gives birth every day to new and splendid effects such as the extraction of medicinal substances, colors, and perfumes, and an infinite number of compositions of things.”<sup>44</sup>

The evil path was taken by charlatans who knowingly practiced alchemy for deceptive purposes. But Biringuccio concluded that it was necessary to understand the nature of metals and other materials and their impact on the chemical process. It was also necessary “to know how to administer the fires, make furnaces, and prepare vessels according to the effects that are sought after.”<sup>45</sup> In short, alchemists had to approach their work not with faith and hope but with a precise knowledge of metals, of how to prepare them and how they react with one another.

Bacon was acquainted with Agricola’s *De re metallica* (1556), which introduced precise mining techniques and technologies that surely appealed to Bacon.<sup>46</sup>

Agricola had also rejected Paracelsian methods of alchemy, but buried inside his vast and amply illustrated treatise were commentaries on how to purify gold and how lead could be drawn out of gold and silver. His recipe made exacting demands on its practitioners, at one point calling for amounts as small as half an ounce (“semunciam”) and at another stage requiring that one-fourth of a container be filled with air. Through the use of rigorous technique and “aqua valentes” (a term that probably referred collectively to hydrochloric, nitric, and sulfuric acids), he explained, precious metals could be separated from base ones.<sup>47</sup> Was this a form of alchemical knowledge, or was he merely discussing expectations and techniques? Did Agricola even make this distinction?<sup>48</sup> Yet Agricola criticized alchemy for many of the same reasons Bacon did. Alchemical recipes were deliberately difficult to follow, and alchemists invented personal names for metals, so that the names appeared to change arbitrarily. In short, the experiments these alchemists conducted lacked precision, much less predictability.<sup>49</sup> Still, these criticisms speak to their methods, not to the process itself, and Agricola may have harbored an attitude that Bacon inherited a generation or so later.

Generations of alchemists had maintained, for example, that the application of mercury, sulfur, and salt in secret quantities and using methods known only to adepts divinely elected to the task would transmute one metal into another. However, the suppositions that one had to be divinely chosen, or spiritually prepared for the process, Bacon considered impious. Such alchemists, in his view, trivialized science, learning, religion, and, therefore, God. These individuals were not Christian natural philosophers but hypocrites. He wrote that hypocrisy “signified those external and empty rites and ceremonies with which men overload and inflate the service of religion: things rather got up for ostentation than conducing to piety. Nor is it enough for men to offer such mockeries to God, but they must also lay and father them upon himself, as though he [God] had himself chosen and prescribed them.”<sup>50</sup> Bacon was thus unmoved by the religious conventions and supplications invoked so often by Paracelsian alchemists, perhaps the most flagrant hypocrites, as far as he was concerned. They knew nothing of how natural philosophy ought to be practiced, yet proclaimed throughout their texts that they did. Their work exemplified the poverty of their knowledge and the hollowness of their piety.

The natural theology alchemists constructed particularly irritated Bacon. While he agreed with most natural philosophers that God had revealed himself in both the Book of God and the Book of Nature, he did not believe that the two could be read together. Any attempt to study natural philosophy through the opening chapters of Genesis or in any other parts of the Bible was, in Bacon’s words, “seeking for the dead among the living.”<sup>51</sup> Bacon’s metaphor would have leaped off the page to a seventeenth-century reader; it is a reversal of the reference

in Luke's account of Christ's resurrection, at the moment when the disciples enter the tomb to prepare Jesus' body for burial: "And it came to pass, as they were much perplexed thereabout, behold, two men stood by them in shining garments: And as they were afraid, and bowed down their faces to the earth, they said unto them, Why seek ye the living among the dead?" (Luke 24:4–5). For Bacon, to seek knowledge of God's creation in scripture was as futile as the disciples' search for Jesus' resurrected body in a tomb. The study of the natural world would have to be approached with concepts as new and foreign to natural philosophers as Christianity was to the Jewish disciples of Jesus. His resurrection metaphor spoke powerfully to his new vision of natural philosophy. One of the purposes of his *Novum Organum* was to establish the appropriately reverent but paradoxical approach to God's creation, which involved departing from scripture and relying on new methods of exegesis, methods of which the authors of the Bible could not have known. The book of Genesis spoke to theology, but philosophy spoke to nature. That scripture was the "living" and philosophy the "dead" spoke as well to the theological supremacy of the sacred word over the natural world.

Clearly, then, although natural philosophers studied God in their work, they had to distinguish between searching for spiritual edification and searching for knowledge of God's creation. Bacon argued that it was precisely the unwise practice of mixing the human and the divine that gave rise to not only "a fantastic philosophy but also an heretical religion. Very meet it is therefore that we be sober-minded, and give to faith that only which is faith's."<sup>52</sup> Bacon was probably alluding here to the "render therefore unto Caesar" command in Matthew, Mark, and Luke, and like that admonition, Bacon's sentiment should not be construed as a limitation on religious studies but as a consideration of propriety.

The search for knowledge and the difficulties it entailed was therefore a common theme in Bacon's work. In the dedication to *The Great Instauration*, he wrote, "the divine philosopher declares that 'it is the glory of God to conceal a thing, but it is the glory of the King to find a thing out.'"<sup>53</sup> It was his belief that God had concealed knowledge from humanity but had also provided the ability to discover that knowledge. This realization allowed him to reconcile the theological problem raised by original sin.

In addition to the implications of the Fall, Bacon saw the study of natural philosophy as the perfect antidote to superstition and other threats to faith; those who saw the study of nature as a threat to the Christian faith were, in his mind, simple.<sup>54</sup> Alchemy of course promoted superstition—a failing worse than even atheism. Time and again he wrote that an idea had to be worthy of God. It was "better to have no opinion of God at all," he wrote, "than such an opinion as is unworthy of him." Bacon later commented that "atheism leaves a man to sense, to philosophy, to natural piety, to laws, to reputation; all which may be guides to

an outward moral virtue, though religion were not; but superstition dismounts all these, and erecteth an absolute monarchy in the minds of men." Atheism was not a threat to the stability of society, because it made individuals wary of themselves and of others. Superstition, however, was the cause of "confusion in many states," and it "ravisheth all the spheres of government. The master to superstition is the people; and in all superstition wise men follow fools; and arguments are fitted to practice, in a reversed order."<sup>55</sup>

Still, one could learn from superstition. Bacon concluded in the *Novum Organum* that superstition and magic should not be dismissed entirely. Although superstitious practices were lies and deceptions, some natural processes might still be worth uncovering.<sup>56</sup> This notion was particularly evident when he turned to the topic of miracles. He wrote in *The Advancement of Learning* that ecclesiastical history had too often been written by those willing to believe that a particular miracle had occurred. These tales of miracles were accepted by people who were either ignorant or superstitious or simply had a "politic toleration of others, holding [reports of miracles] but as divine poesies." As time passed, however, and "when the mist began to clear up, they grew to be esteemed but as old wives' fables, impostures of the clergy, illusions of spirits, and even badges of antichrist, to the great scandal and detriment of religion."<sup>57</sup> Miracles often did more to erode the legitimacy of religion. God did not perform miracles to convert an atheist, because "the light of nature might have led him to confess a God: but miracles have been wrought to convert idolaters and the superstitious, because no light of nature extended to declare the will and true worship of God."<sup>58</sup>

Bacon seemed to indicate that only "the light of nature" could convince an atheist of the existence of God. The study of nature was both a rational and a sacred activity, and one could not approach nature with reason and order and not be convinced of the existence of God. He apparently believed that atheists were less problematic, less menacing, than those who believed in superstitious phenomena, because atheists had come to their conclusion intellectually rather than emotionally; they could be convinced by reason alone. In *Valerius Terminus* he acknowledged "that a little natural philosophy inclineth the mind to atheism, but a further proceeding bringeth the mind back to religion."<sup>59</sup> But reason in "the light of nature" could not penetrate the stubborn walls of idolatry and superstition, and therefore God had to approach these individuals differently, more spectacularly, through the use of miracles.

Clearly, there was little room for spiritual alchemy in Bacon's theology. Alchemy embodied a mistaken search for knowledge and, despite all of its spiritual invocations, was an impious approach to God. The superstitious associations that alchemists invoked were, in his mind, cynical attempts to cloak their self-serving work in the guise of piety. He never invoked the creation, the Old Testament,

or ancient wisdom when he discussed cosmology—the fundamental concern of Paracelsians.<sup>60</sup> He pruned away the branches of cabalism and mysticism that had extended so far into alchemical thought. Real piety began and ended with an unclouded and appropriately respectful attitude toward the blessing of God—a fundamental element missing in the traditional alchemical methods.<sup>61</sup>

### A Politic Approach to Alchemy

Understanding the religious nature of Bacon's philosophy begins to help us understand why he attacked the alchemical tradition, but it does not explain why he secreted away his acceptance of the principles of transmutation so carefully. Several considerations may clarify why he expressed his opinion on alchemy so deceptively, and one is the practice of dissimulation. Dissimulation was always a part of Bacon's public life, and he considered the matter explicitly in his essay "Of Simulation and Dissimulation," in which he concluded that there were three advantages to simulation and dissimulation. "First, to lay asleep opposition, and to surprise. . . . The second is, to reserve to a man's self a fair retreat. . . . The third is, the better to discover the mind of another." "To set it even," our careful courtier acknowledged three disadvantages as well. "First, that simulation and dissimulation commonly carry with them a shew of fearfulness. . . . The second, that it puzzleth and perplexeth the conceits of many, that perhaps would otherwise cooperate with him. . . . The third and greatest, is, that it depriveth a man of one of the most principal instruments for action; which is trust and belief."<sup>62</sup>

Perez Zagorin identifies the breadth of dissimulation in early modern society and notes that occultists were particularly engaged in the practice. Zagorin suggests that Machiavelli may have been a particular influence on Bacon: "Bacon's keen interest in dissimulation may have been related in part to the influence of the political realism of Machiavelli, to whom, he wrote, 'we are much beholden' for showing 'what men do, and not what they ought to do.'"<sup>63</sup> Zagorin also notes that Bacon's essay "On Cunning" expressed his disapproval of the duplicity involved in the political machinations of the court: "Again, it is one thing to understand persons, and another thing to understand matters; for many are perfect in men's humours, that are not greatly capable of the real part of business; which is the constitution of one that hath studied men more than books."<sup>64</sup> Although his attack on cunning men was not as brutal as his criticism of alchemists, his scorn was sharper, more elegant, the work of a rapier, not a broadsword. He also wrote memoranda to himself, intending to guide him through the complex political world in which he lived. Clearly, he both considered and acted, when he could, as deftly, and, at times, as deceptively as he possibly could.



Zagorin suggests another reason for Bacon's penchant for dissimulation: his alleged homosexuality. In addition to the social opprobrium attached to homosexuality, it was a statutory crime in late Renaissance England. If Bacon was homosexual, he would naturally have hidden this fact as well as he could.<sup>65</sup>

Another explanation for Bacon's dissimulation is related to an issue raised earlier. Bacon was born into a life of privilege and always wanted to be a political force at court. He studied law but never intended to practice it. Throughout his life he tried to gain positions of power and preferment, and to some extent he succeeded.<sup>66</sup> Indeed, Julian Martin sees this desire as the defining characteristic of Bacon's life and career: "Francis Bacon was a politician and statesman by trade, and he always regarded himself as such, and not as a natural philosopher *per se*. Bacon was a member of the English governing elite; his overriding ambition was the augmentation of the powers of the Crown in the state, and he believed his refashioned natural philosophy was but one (albeit novel) instrument by which to achieve this political aim."<sup>67</sup>

Because of his professional ambitions, Bacon approached alchemy as he did virtually all other issues he confronted, as something that must be approached judiciously and politically. His experience as a courtier explains in part why his sympathy for alchemy was so veiled. There was, however, a difference between his political wisdom and his political actions. He made some ghastly errors of judgment—opposing Queen Elizabeth over a relatively minor tax issue, allying himself with the earl of Essex, the man who later led a failed rebellion against Elizabeth, and, late in life, making himself vulnerable to his powerful political enemies by accepting gifts, which provided the evidence they needed to convict him of taking bribes, thus ending his public career. That he did not always pursue the wisest political path does not mean that he failed to appreciate the wisdom of politic action, of course.

In his *Wisdom of the Ancients* (1609), Bacon articulated an explanation that helps us to understand his political philosophy and his complex approach to alchemy. Bacon believed that to advocate a policy to a monarch, it would be inappropriate to outline his proposal and present it directly to him. The way to convince a ruler of the wisdom of one's ideas was to do so indirectly, through court masques, fables, and other entertainments. Despite his claims otherwise, his debt to ancient sources was far greater than he ever admitted, and in a classic and invaluable study, Charles Lemmi scrupulously noted the likely sources of his interpretations.<sup>68</sup> However, in his zeal to demonstrate these debts, Lemmi probably did not give sufficient credit to Bacon's innovations. It is more accurate to say that in *Wisdom of the Ancients* Bacon turned to classical figures such as Pan and invested them with his new interpretation and philosophy.<sup>69</sup>

Despite the difficulty involved in trying to learn from a fable or parable, Bacon maintained that “beneath no small number of the fables of the ancient poets there lay from the very beginning a mystery and an allegory.”<sup>70</sup> *Of the Wisdom of the Ancients* was intended to counsel James I. The fables he selected and analyzed advanced his views to the court on governing. While he made numerous direct pleas, both through the court and as a minister of Parliament, he appreciated the value of indirect counsel as well, and he used this strategy in his approach to alchemy. By subsuming alchemical themes and vocabulary within his natural philosophy, he attempted to provide a new approach to alchemy without hiding or diminishing his contempt for the old. We saw earlier that Bacon compared the pursuit of the philosophers’ stone to the fable of the old man who buried his gold in his vineyard. Although his sons never found the gold, the vintage of the field was more plentiful.

While Bacon did not discuss alchemy specifically in his examination of the fable of the pagan god of nature, Pan, this work shows how he could excoriate alchemy openly but promote some of its ideas and concepts subtly.<sup>71</sup> Bacon portrayed Pan as an emblem of nature, a traditional interpretation dating at least to the Stoics.<sup>72</sup> Pan’s horns came to a pyramidal point, like “the whole frame of nature”; his body, covered with hair, suggested “the rays which all objects emit.” Pan’s beard had the longest hair “because the rays of the celestial bodies operate and penetrate from a greater distance than any other; and we see also that the sun, when the upper part of him is veiled by a cloud and the rays break out below, has the appearance of a face with a beard.”<sup>73</sup> Bacon borrowed his comparison of Pan’s face to the sun from Macrobius.<sup>74</sup>

Pan’s body alluded to the brutish nature of humanity, and the “emblems” he held in his hands—his pipes and staff—represented harmony and empire. Although Bacon probably borrowed his interpretation of the pipes from Macrobius and perhaps also from Boccaccio, it is also quite likely that his analysis of Pan’s staff was original, and it deserves a word of attention.<sup>75</sup> Bacon believed that Pan’s hooked staff was particularly noble because it suggested how “all the works of Divine Providence in the world are wrought in winding and roundabout ways—where one thing seems to be doing, and another is doing really—as the selling of Joseph into Egypt, and the like.” Pan’s staff was an eminently appropriate metaphor for governing: One may be more successful with “winding and roundabout ways” than through direct suggestions or counsel. Furthermore, he invested his reference to the staff with biblical significance. The story of Joseph—the young man wronged by his jealous older brothers who later became a powerful Egyptian official—must have spoken powerfully to him. Even in 1609, when *Of the Wisdom of the Ancients* was published, Bacon had experienced both the bitterness of

political rejection and yet enough of the pleasure of political success to keep his hopes intact. This passage illustrates not only how deftly he could insert a Christian image into his discourse but also the appeal of “winding and roundabout” self-revelation.

The mountains gave Pan the greatest views from which to see and study nature. Again, although Bacon borrowed from earlier sources, he also extended his analysis beyond them. He observed that Pan was second only to Mercury, the messenger of the gods. This was highly appropriate and “an allegory plainly divine,” but he was also almost certainly using the sixteenth-century mythographer Natale Conti (1520–1585) as a source.<sup>76</sup> However, he continued on his own, remarking that “next to the Word of God, the image itself of the world is the great proclaimer of the divine wisdom and goodness. So sings the Psalmist: The heavens declare the glory of God, and firmament sheweth his handiwork.” Keeping his classical metaphors intact, he noted that Mercury (meaning Christ) delivered God’s messages to individuals, while Pan (meaning nature) was the indirect expression of God. Yet Pan did not represent the pristine expression of God before the Fall but the natural world that had fallen from God’s grace as surely as humanity had: “For true it is that this Pan, whom we behold and contemplate and worship only too much, is sprung from the Divine Word, through the medium of confused matter (which is itself God’s creature), and with the help of sin and corruption entering in.”<sup>77</sup>

This was why nature, fallen and imperfect, represented chaos. Bacon pointed out that in challenging Cupid to a fight Pan was engaging in an allegorical struggle between order and chaos: “matter is not without a certain inclination and appetite to dissolve the world and fall back into the ancient chaos; but that the overswaying concord of things (which is represented by Cupid or Love) restrains its will and effort in that direction and reduces it to order. And therefore it is well for man and for the world that in that contest Pan failed.” He believed that the intemperate and unpredictable aspects of nature would have to be reined in with reason. This was why natural philosophy itself had to be reformed before nature could be redeemed. In his *Novum Organum* he complained that no natural philosophy currently being practiced was “pure”; all of it was “tainted and corrupted. . . . From a natural philosophy pure and unmixed, better things are to be expected.”<sup>78</sup> Although Lemmi believes that he lifted this idea from Natale Conti, even if that is true, it is also clear that he sharpened the interpretation with more precise metaphors and language of nature.<sup>79</sup> For Bacon, the figure of Pan became not only a traditional emblem of nature but a powerful new metaphor of governing nature and reform.

Later in the *Novum Organum* Bacon remarked that the methods he advocated were not intended for natural philosophy alone but also for logic, ethics, and politics; what was true of one was to be true of all.<sup>80</sup> He believed that his methods

would only be completely successful if they were invoked in virtually all aspects of public life. In 1605 he published *The Advancement of Learning*, a critique of the traditional education practiced in the universities and tolerated by the state. Directing his discussion toward “the places of learning, the books of learning, and the persons of the learned,” he argued for a new philosophy of education that would enrich not only individuals but the state. The stability and prosperity of the state was incumbent upon the realization that education was a state’s foundation. In his preface to the second book he wrote, “if any man think that Philosophy and Universality are idle and unprofitable studies, he does not consider that all arts and professions are from thence supplied with sap and strength.”<sup>81</sup> A society built upon a coterie of broadly educated individuals rather than narrowly conceived professions was enriched and fortified. That 1605 was the same year in which James I narrowly escaped assassination in what is now known as the Gunpowder Plot is an indication of how volatile the political situation was when Bacon was writing.

The reformed alchemy that Bacon eventually envisioned therefore had to operate in some fashion under the aegis of the government. He had no illusions that his enterprise would be expensive, and his fourth work and monument, a laboratory “fit for a philosopher’s stone,” was to be “a palace.” Few institutions other than the court could afford to construct such a monument. So there were some simply financial reasons why alchemy and natural philosophy in general could only be properly pursued by the government.

Bacon’s political experience played a significant role in why he chose to support the principles of alchemy indirectly. He was employed in one capacity or another by the government for virtually his entire adult life, and throughout his career he demonstrated a consistent desire to obtain reconciliation between quarreling parties. The reconciliation theme in his political life paralleled the reconciliation that alchemists hoped to achieve. Bacon and numerous alchemists attempted to create inclusive societies that would allow individuals to agree upon the common ground they shared and diminish the influence of their differences. He must have found the irenicism of alchemy appealing, which may explain why he openly rejected the methods of alchemists but indirectly incorporated the principles and goals of alchemy into his natural philosophy.

### Indirect Political and Alchemical Direction

Bacon used indirect rhetoric for political purposes on several occasions. In late 1584 or early 1585 he composed a “Letter of Advice to Queen Elizabeth” in which he urged the queen to take a more lenient attitude toward English Catholics. His

reasoning was simple: Because Catholics were enemies on her own soil, such demands as the oath of supremacy would drive them to despair and strengthen their contempt for the English government. The threat of Catholicism on English soil, however, might be extinguished indirectly. He suggested that the oath of supremacy be rephrased negatively: "That whosesoever would not bear arms against all foreign princes, and namely the pope, that should any way invade her majesty's dominions, should be a traitor." He thought that this rhetorical change would diminish foreign observers' impressions that Protestant England was riven with discord and help the monarch present an image, however inaccurate, of a unified realm. Diminishing the threat of English Catholics indirectly, it seemed to Bacon, was the best way to achieve a permanent solution to the problem of dissent.

We see further evidence of his interest in reconciliation in the paper Bacon dedicated to James shortly after his assumption of the English throne upon the union between England and Scotland. Bacon hoped to achieve under James a final pacification and consolidation of the English Church. James assigned him to assist in the completion of the union, and in his 1604 treatise devoted to the resolution of this issue he took great pains to allow for diversity of opinion and conduct within the larger structure of unity between the two nations. Private property rights were not to be meddled with, and even matters that affected the government were to be approached cautiously so as not to upset the delicate balance of needs and desires between the two nations.<sup>82</sup>

In the matter of religious practice, Bacon believed that restrictions on nonconformity ought to be lifted. He thought that this action would diminish dissenters' feelings of persecution—one of their most powerful bonds. Indeed, in *The Advancement of Learning* he warned against interpreting scripture too narrowly; it should be considered "not only totally or collectively, but distributively also in clauses and words, infinite springs and streams of doctrines, to water every part of the Church and the souls of the faithful."<sup>83</sup> Perhaps, as his "infinite springs and streams of doctrines" seemed to intimate, there was even a scriptural foundation for dissent.<sup>84</sup>

Yet even this theological observation was based upon scientific rigor. Bacon argued that it was fallacious to interpret divinely inspired scripture in the same manner as the writings of individuals. "We ought to remember," he wrote, "that there are two things which are known to God the author of the Scriptures, but unknown to man; namely, the secrets of the heart, and the successions of time."<sup>85</sup> God knew the thoughts of individuals, but individuals could never be sure they knew the thoughts of God. Further, the scriptures were written for all people in all ages. In approaching his theological writings with sharpened reason, Bacon articulated his belief that his methods had application in all aspects of human consideration, even in contemplation of the divine.

The relationship between seventeenth-century politics, religion, and natural philosophy is elusive but important if we are to obtain an accurate impression of the period. Paolo Rossi was the first historian to place Bacon's alchemical and occult views within the context of his other work, and he argues that Bacon was particularly indebted to Renaissance natural philosophy and magic. Rossi suggests that his *Sylva Sylvarum*, published posthumously in 1627, reveals the influence of Renaissance discrimination theory in Bacon's thought. In discrimination theory, when a substance came in contact with another substance, it engaged in a process that distinguished whether the contact was pleasant or painful. If the contact was pleasant, it was accepted, but if the substance experienced pain, it was rejected.<sup>86</sup> Alchemy, with its long association with the Aristotelian idea of sympathy and antipathy, paralleled the theory of discrimination rather well. Discrimination theory and alchemy were two sides of an occult Renaissance coin.

However, Rossi argues, alchemy figured more prominently in Bacon's work than simply on the level of a single Renaissance philosophy. In the *Novum Organum*—the same volume in which he excoriated alchemists and their methods—he argued that a spiritual body was present in all substances, a common assumption among alchemists. In his *History of Life and Death* Bacon clarified that he did not mean a virtue or a power when he spoke of the spirit of a substance “but a body, subtle and invisible yet situated in actual space,” a definition many alchemists would have accepted.<sup>87</sup>

The spiritual quality of matter was a central alchemical supposition. Early modern alchemists believed that metals differed because each possessed a different spirit. A metal could be transmuted if a new spirit was introduced into it. While Rossi does not suggest that Bacon expressed this view of metals, he believes that Bacon's vocabulary betrayed the influence this notion had on him: “Bacon's vocabulary bears the distinctive mark of this [alchemical] tradition: he speaks of the assimilation, nourishment, generation, and irritation of substances in the process of conservation or mutation; he makes frequent use of the term fixation with its traditional alchemical connotations.”<sup>88</sup> Rossi points to the first sentence of book 2 of the *Novum Organum*, in which Bacon wrote that “to generate and superinduce a new nature or new natures, is the work and aim of Human Power. Of a given nature to discover the form, or true specific difference, or nature-engendering nature, or source of emanation (for these are the terms which come nearest to a description of the thing), is the work and aim of Human Knowledge.”<sup>89</sup> Bacon further aligned himself, Rossi points out, with the alchemical tradition when he turned to two very typical alchemical suppositions. He said that the transmutation of one substance into another was possible only if a foreign element was introduced. Mercury, for example, was often thought to be the critical foreign substance that would begin the transmutation process. Bacon

even declared that fire could produce a previously nonexistent substance—a fundamental precept of alchemy.

James VI's ascension to the throne in 1603 as James I changed Bacon's fortunes profoundly. Between 1605 and 1620, the years between the appearance of *The Advancement of Learning* and the *Novum Organum*, his political star rose. In 1613 his political ascent took off when he was appointed attorney general. The House of Commons had ruled previously that an attorney general could not sit in the Commons, but an exception was made for Bacon. He therefore was in a unique position to mediate the numerous political and religious disputes between Parliament and the Crown. However, James's dissolution of Parliament in 1614 shattered Bacon's hopes of reconciling the divisions between the two institutions. The following years witnessed his official political position rise even as his actual political influence diminished. In 1617 he was appointed privy councilor, and in the same year he obtained the title his father held, Lord Keeper of the Great Seal. In 1618 Bacon was made Lord Chancellor, and a few months later was raised to peerage, bestowed as Baron Verulam. In 1620 he received another beneficent when his peerage was raised to Viscount St. Albans. It was in these same years that he acquired some powerful political enemies, notably his rival, the Duke of Buckingham, with unfortunate consequences.<sup>90</sup>

In 1620 another one of Bacon's longtime political opponents, Sir Edward Coke, confronted him with a bribery charge. Bacon had been instrumental in dismissing Coke from a judgeship in 1616 and Coke, now in Parliament, led an unpleasant, vengeful campaign against him. Bacon was justly accused of accepting gifts while a legal suit was pending, and he had indeed acceded to the tradition of accepting gifts from suitors to his court. The charge itself, however, was absurd. First, James I was notorious for his corruption, as was Buckingham.<sup>91</sup> Second, Bacon showed in his defense that the gifts never influenced his judgment—he still sometimes held against the interested party. Neither James nor Buckingham rose to his defense, though, sacrificing him instead to appease an irascible parliament. Too old and too wise to fight a battle that could not be won, he confessed his guilt.<sup>92</sup>

The formal sentence handed down by the House of Lords was harsh. Bacon was fined £40,000, imprisoned at the pleasure of the king, and prohibited from coming within twelve miles of the court. Probably because of his long service to the Crown, his actual sentence was more lenient. He was forced to spend only a few days in the Tower, and James pardoned him from all demands except those that arose from his parliamentary sentence. The last years of his life were spent writing his histories and continuing his work on the *Instauratio Magna*, all the while trying to procure his former positions of political influence. On April 9, 1626, Bacon

died from complications of a cold he caught while collecting snow, which he was using to stuff a chicken in order to observe the preservative effects of cold on flesh.

The early decades of the seventeenth century saw the English parliament assert its power, while the Stuart monarchy attempted to define further its royal—and indeed divine—prerogative.<sup>93</sup> Bacon's political strategies were intended to diminish as much as possible the conflict between these institutions. That he never achieved what he sought, like the alchemists' search for the philosophers' stone, is less significant historically than the consistency of his resolve.

At the same time, however, there was something unrepentant about his own political indiscretions. In *Wisdom of the Ancients* Bacon included a section titled "The Flight of Icarus; Also Scylla and Charybdis." "Moderation, or the Middle Way," he began, "is in Morals much commended; in Intellectuals less spoken of, though not less useful and good; in Politics only, questionable and to be used with caution and judgment." He later said that the path of virtue ran between erring on the side of caution or of excess; Icarus made a mistake, but the lesser of the two: "And yet if [Icarus] was to perish one way, it must be admitted that of two paths, both bad and mischievous, he chose the better. For sins of defect are justly accounted worse than sins of excess; because in excess ther is something of magnanimity—something like the flight of a bird, that holds kindred with heaven; whereas defect creeps on the ground like a reptile."<sup>94</sup>

Bacon represented a new and changing attitude toward natural philosophy. His reform of methodology extended beyond his notion of natural philosophy to include his larger conception of how individuals ought to perceive natural philosophy, religion, and the state. He believed that natural philosophy itself had to be reformed before nature could be redeemed. If all natural philosophy as currently practiced was "tainted and corrupted," this was true of alchemy, which was tainted and corrupted by superstition, spurious methodologies, and dubious claims.

The philosophy expressed in Bacon's *Great Instauration* attempted, like the Second Coming, to restore something that had been lost. It expressed Bacon's conviction in a *real* redemption, based not on an elusive mystical concept but on his belief that individuals must consider their salvation with a measure of certainty based on knowledge; this conviction drove his work. Even his definition of knowledge was specific: "It is a correct position that 'true knowledge is knowledge by causes,'" he wrote in *Novum Organum*.<sup>95</sup> It was his insistence that the knowledge of causes must be rigorously sought that led him both to criticize alchemy and yet to formulate a new attitude toward its practice. Perhaps alchemy alone could not redeem the natural world, but in rescuing it from its worst practitioners, Bacon believed that it could play a role in the great redemption he sought.

Despite Bacon's claim that the pursuit of knowledge should be a public and more open enterprise, his natural philosophy was composed of continuous



back-and-forth steps between the public and private spheres, and he expressed contempt for the secrecy of the occult tradition yet was secretive, even deceptive, about his own views. Dissimulation seems to have been as much a part of his discourse as any other rhetorical strategy he employed, and this was particularly true of his views on alchemy. His was the method of a flawed but ambitious politician, courtier, diplomat, and perhaps even irenicist. Understanding the nuances in his approach to alchemy helps us to understand how he believed knowledge was revealed to individuals and how individuals should reveal their knowledge to others. For a man who was never known for intense religious sentiments, faith loomed large in his new philosophy.

Although much of their enterprise would have pleased him, because of their appreciation of the occult tradition, he would probably have been disconcerted to learn that his ideas were appropriated by that learned and pious Czech refugee from the Thirty Years' War, Jan Comenius, and the company he kept, the Hartlib Circle. Comenius cited Bacon often as an inspiration, and in 1641 he wrote to Hartlib that he believed they were in position to enact Bacon's vision, even urging Hartlib to "adapt Bacon's supplication to James I in Book II of *De Augmentis Scientiarum* to be addressed to Charles I."<sup>96</sup> Whether they understood him or not, the Hartlib Circle clearly appreciated the implicit irenicism in Bacon's new philosophy.

Bacon never completed the *New Atlantis*, but he at least got as far as outlining his utopian view of a government directed by a balance of belief in God and scripture and the wisdom of reason: Bensalem embodied the unity of faith and reason that Bacon had sought for so long. The author of the journey of Bensalem recorded that the most important and successful action of the king was his construction "of an Order or Society which we call Solomon's House; the noblest foundation (as we think) that ever was upon the face of the earth; and the lantern of this kingdom. It is dedicated to the Works and Creatures of God." This house was deeply indebted to the wisdom of the Hebrews. Solomon, we are told, had written a book, now lost, on natural history, a comprehensive volume that explained "all things that have life and motion."<sup>97</sup>

Bacon's vision of utopia was a society in which the wisdom of the ancient world was recovered but studied with a new rigor, one in which the religious truths that he believed were expressed in the natural world were studied with a reverence and a wisdom worthy of Solomon.<sup>98</sup> Alchemy would have to withstand the judgment of its critics and prove its relevance. When, and only when, alchemy was approached in precisely this manner would Bacon permit it to be a part of the preparations he was making for the great redemption of his society.

# 4

## CATHOLIC NATURAL PHILOSOPHY: ALCHEMY AND THE REVIVIFICATION OF SIR KENELM DIGBY

On May 1, 1633, Lady Venetia Digby, the wife of Sir Kenelm Digby, died. Before her body was prepared for burial, however, Digby called upon his good friend, Anthony Van Dyck, the renowned Dutch painter of the Caroline court, and asked him to come to his home immediately and paint a portrait of Venetia as she lay in her deathbed. Van Dyck had already painted her portrait twice before, once sitting alone and again in a family portrait with Digby and their two children. Van Dyck agreed immediately to undertake a final painting of Digby's beloved wife.

Serenity dominates the result of his efforts, titled *Venetia Stanley, Lady Digby, on Her Deathbed*. In the portrait, we view Venetia through parted bed curtains, and if we did not know better, we might think she was merely falling asleep. Her head is propped up and resting delicately on the open palm of her right hand. She is dressed in a white gown and cap, a pearl necklace gracing her neck, reclining in luxurious comfort, supported by numerous pillows and enveloped in sumptuous, velvety bedding. Yet it is the moment that captivates us: Her left eye is almost but not quite closed, as if we are forever witnessing Venetia's last moments on earth. Drifting into an eternal slumber, her portrait conveys to us not only serenity but the immediacy of the moment as well. The only liberties that Van Dyck took were the addition of the pearl necklace, symbolic of Digby's eternal and perfect love, and a scattering of withered rose petals across her lap, representing the transience of earthly beauty (see fig. 2). The painting hung in his room for the rest of his life, and he often remarked on the comfort it brought him.<sup>1</sup>

However, Venetia's partially opened eye conveyed more than simply a poignant moment in time. For the remaining thirty years of his own life, the portrait reminded Digby of eternal life. After her passing, he slipped into a two-year period of mourning. Contemporaries whispered that he was responsible for his wife's death, brought on by his insistence that she drink "viper wine," a drink thought



Fig. 2 Anthony Van Dyck, *Venetia Stanley, Lady Digby, on Her Deathbed*, 1633. By permission of the Trustees of Dulwich Gallery.

to stave off the aging process. An autopsy was performed and he was cleared of any charges. Nevertheless, his grief was intense. Whether his sorrow was based on guilt or simply the longing of lost love, his letters between 1633 and 1635 indicate that he suffered a wide range of emotions, from mental pain, guilt, and anger to an idealization of Venetia and even hallucinations—all revealing the depth of his bereavement.<sup>2</sup>

Eventually Digby found solace by returning to two traditions from which he had drifted away since a young man: Catholicism and the occult tradition of alchemy. The reasons why he returned to the Catholic fold are complex. For one, he had been born into a notorious Catholic family: his father, Sir Everard Digby, had been executed in 1606 for his involvement in the foiled Catholic rebellion known as the Gunpowder Plot in the previous year. Born in 1603, Digby was a child at this time and was raised Catholic by his mother. As a young man, he joined the Church of England, concerned more about his rising political star in a society increasingly dominated by Puritan values and norms than he was about family tradition and devotion. So at a time of intense grief and sorrow, surely his

family's long ties to the Roman Catholic Church must have had some effect on his reconversion.

Other factors led to his decision as well. The Catholic Church placed great emphasis on the material elements of religion: the veneration of relics, prayers accompanied with rosary beads, the lighting of candles for departed souls—all spoke to the deep, tactile connection the Catholic Church had with the temporal world. England in the 1630s, however, despite the efforts of Charles I and Archbishop William Laud to narrow the perceived if not the real distance between the churches of England and Rome, was experiencing a rising tide of radical Protestant sects, most notably Puritanism.<sup>3</sup> Digby certainly found the Protestant rejection of formal liturgy, transubstantiation, and free will to be distasteful if not offensive. For him, Protestantism represented division and discord, while the Catholic Church stood for unity, inclusiveness, and perfection. Catholic doctrine comforted Digby: The miracle of transubstantiation that occurred at every mass, providing God's grace for all communicants—not just the preordained elect, as the Protestant denominations proclaimed—the perfection and symmetry of the Trinity, the antiquity and origins of the church—all were spiritually and intellectually compelling, making Catholicism a powerful force in Digby's intellectual life.<sup>4</sup>

However, Digby's return to Catholicism was even related to the other tradition he turned to in his grief: alchemy. Just as B. J. T. Dobbs argues that Isaac Newton's Arianism permeated his alchemy, Catholicism saturated Digby's natural philosophy and his alchemical studies.<sup>5</sup> His approach to the doctrine of the resurrection of the dead and the revivification of matter, and his desire for a unified and inclusive Christendom, one that would be reborn and renewed after the disastrously divisive effects of the Reformation, all led him to study alchemy from what he believed was a distinctly Catholic perspective.

Digby believed that the transmutation of metals was only possible with techniques that could be replicated—a common requirement of numerous practitioners of the day, certainly one that we saw Bacon expected. In her study of Digby, Dobbs argued that he explained his “weapon-salve,” or “powder of sympathy,” to accord with his mechanical universe, thereby eliminating the “astral and spiritual influences involved in Paracelsian theory.”<sup>6</sup>

Digby approached alchemy in much the same way: He attempted to explain the process of transmutation as nearly as he could according to the principles of the mechanical philosophy. At the same time, he integrated his religious belief into the mechanical philosophy and alchemy. Like the miracle of transubstantiation, alchemical transmutation could occur only when all the components were correctly in place. In effect, an alchemical process had to be as reliable in its efficacy as the Mass itself.

Digby's interest in alchemy, however, was also driven by less lofty and far more personal reasons. Although his alchemical studies probably began before 1620, while he was a student at Oxford, and continued sporadically until the 1660s, he did not begin to study alchemy in earnest until about 1635, about the same time that he emerged from his mourning for Venetia. At that time he set up a laboratory in Gresham College, London, focusing particularly on the process known as palingenesis, the revivification of plants from their calcined ashes.<sup>7</sup> Given that he returned to study alchemy at this time with a particular focus on palingenesis suggests a profound psychological aspect to his alchemical studies.

Digby is known to historians of seventeenth-century England as a public figure who intermittently and deftly served as a diplomat and counselor to two Stuart monarchs and the Cromwellian Protectorate—all the while brandishing his Catholicism. After his reconversion to the Catholic Church, he became an unapologetic advocate of his church, even when it was politically imprudent to be so. Like many of his contemporaries, his personal beliefs and public persona ran strikingly parallel courses.

To historians of science, Digby's studies in the mechanical philosophy especially, but also his work in botany and alchemy, have made him a figure of moderate scholarly interest.<sup>8</sup> The purpose of this study is to suggest that understanding his natural philosophy begins by understanding his religious belief. Even as a Catholic, he shared some crucial beliefs with other seventeenth-century alchemists. He too integrated traditional doctrines within his alchemical studies, and he too viewed alchemy as a redemptive, purifying, even revivifying process.

John Henry has written on Digby's interpretation of certain aspects of Catholic doctrine and his role in the so-called Blackcloists, a group of English Catholics who in the late 1640s tried to establish an English Catholic church separate from Rome.<sup>9</sup> Henry's study is significant not least because it identifies clearly the role of Catholicism in Digby's thought; it was *the* single defining element in his life, dominating his personal, intellectual, and public life. Yet Catholic dogma provoked troubling implications of the mechanical philosophy for Digby.

Like other early modern alchemists, Digby did not turn to traditional religious sources to defend his faith but rather to natural philosophy and the occult tradition of alchemy. Alchemical principles allowed him to resolve the theological problems presented by the new theory, the mechanical philosophy. The doctrines of the resurrection of the dead and the Trinity were not exclusively Catholic doctrines, though he presented them as such in his examination of their veracity. Clarifying his approach to his faith and his alchemical studies will allow us to place his ideas within the context of larger irenic and moderating forces in the tumultuous decades of seventeenth-century England.

## The Origins of Digby's Catholicism

On March 10, 1629, in a bitter dispute with the House of Commons, Charles I dissolved Parliament and began what became known as his “personal rule” of England.<sup>10</sup> The cause of the dispute was twofold. First, Charles demanded that he be allowed to exact fees on the tonnage and poundage of merchant shipping in order to replenish his dwindling coffers. Second, and just as important, Charles at least appeared to desire to increase the ceremonial liturgy in the Church of England services and directed the clergy not to criticize openly Arminianism—the doctrine that agreed essentially with the Catholic Church that God’s grace was not predetermined but was dependent upon an individual’s free will. These positions, many believed, represented clear attempts toward an eventual reconciliation with the Roman Catholic Church—something that would be violently resisted if it came to pass. Thus, when Digby reconverted to his family’s Roman Catholicism, there were few decisions he could have made that would have placed him at greater political and perhaps even personal risk.

Born on July 11, 1603, just a few months after the death of Queen Elizabeth, Digby was the son of a wealthy Catholic heiress, Mary Mulsho, and Sir Everard Digby. Together they were the most prominent Catholic family in Buckinghamshire. The family had been deeply involved in protecting the Catholic faith in England, even providing an oratory and hiding place for several Jesuit priests. There were personal ties as well: Jesuit priest John Gerard, who had made his name by escaping from the Tower of London, was Kenelm’s godfather at his baptism. Therefore, when the conspiracy of the Gunpowder Plot was hatched, it was unsurprising that Sir Everard was involved. Although he paid the same grim price as the others, because Everard was not part of the conspiratorial inner circle, his family was not stripped of its land, and Mary was allowed to raise Kenelm unharassed. Digby enrolled at Gloucester Hall, Oxford (present day Worcester College) in 1618 to study under the great mathematician and occultist Thomas Allen (1542–1632), a mentor of notable influence for Digby.

Allen, along with John Dee (1527–1608), was part of a Platonic-Pythagorean circle that flourished during the English Renaissance. The two men also shared a wide intellectual curiosity. Allen and Digby were interested in alchemy, astrology, and Cabala; in addition, Allen pursued work in mathematics, history, astronomy, and philosophy. Unfortunately, nothing is known of any alchemical work on which Allen and Digby may have collaborated. Digby’s earliest recorded alchemical work does not appear until 1635, two years after the death of Venetia.<sup>11</sup> Yet Allen was said by Fuller to have “succeeded to the skill and scandal of Friar Bacon,” and it is likely that the two men at least discussed, if not practiced,

alchemy during their time together.<sup>12</sup> Allen thought highly of his pupil, calling him “the Mirandula of his age.”<sup>13</sup> Digby, however, left Oxford after only two years of study and never obtained a degree. Instead, in 1625 he met and married Venetia Stanley; beautiful, three years older than he, Venetia was already notorious in London society. The gossipy John Aubrey intimated that Venetia had been the mistress of Richard, Earl of Dorset.<sup>14</sup> Aubrey also noted that the earl would join the Digbys annually for dinner, and “with much desire and passion he beheld her, and only kissed her hand; Sir Kenelme being still by.”<sup>15</sup>

His good relationship with Allen, a powerful political figure, suggests Digby’s political acumen. As he grew into a young man, making his way through the labyrinthine courts of the Stuart and Cromwellian regimes, he learned from his father’s mistake. He had learned at a very young age the cost of religious zeal, and the brutal execution of his father may go far in explaining why he was sometimes bold and sometimes cautious when he expressed his religious belief. As he matured, his politics were at times mercurial, but his loyalties were always clear: He supported, protected, and defended the current head of state, whoever that might be.

Digby’s political reputation was launched by his military success. In 1627–28 he made a courageous and successful defense of English naval interests with his victories over the Flemish, Spanish, and Dutch. His most spectacular success was his victory, in three hours’ time, over French and Venetian forces at the Mediterranean port of Scanderon on June 11, 1628, a victory that led to his knighting. It was also in 1628 that he wrote his essay on Spenser, though it was not published until 1644.<sup>16</sup> This brief composition was his first foray into the complex realm of natural philosophy and theology. His analysis of Spenser’s allegorical stanza was deeply rooted in another largely unexamined interest of his: mathematics.

Mathematics had been an important area of inquiry for several generations in England. Since the 1580s the orthodoxy, utility, and even the history of mathematics had been debated in London. It began in 1583 with the publication of Richard Harvey’s “Astrological Discourse,” a mathematical and astrological prophecy that foretold massive instability and unrest that spring.<sup>17</sup> For Digby, mathematics was another example of the perfection of the natural world. John Wallis (1616–1703), the celebrated English mathematician, edited a collection of mathematical papers and letters, *Commercium Epistolicum* (1658), and Digby served as a kind of mediator between the English and French positions. Wallis dedicated the papers of his debate, which included his debate with his French logarithmic nemesis, Pierre de Fermat, to Digby, calling him “an English Knight.”<sup>18</sup> As clever as that was, as an Englishman, he was acceptable to Wallis and his colleagues, yet because Digby spent so many years in Paris and Rome, the French mathematicians could trust his integrity as an intermediary. The *Commercium Epistolicum* is a collection of

Latin, French, and English papers, and while he never entered into this or any other actual mathematical debate, simply being one of Thomas Allen's students was testimony of being numbered among his day's most promising mathematical talents.<sup>19</sup>

Theological as well as political issues became important to Digby at this time. As noted above, for practical and perhaps also theological reasons he professed Protestantism and swore his allegiance to the Church of England in 1630.<sup>20</sup> His concerns about protecting his family and their fortune were not unfounded. During the mid- to late 1620s, the English gentry was nearly hysterical in its fear of Catholics, and this fear was intimately related to the Arminian and predestination controversies. When a Jesuit meetinghouse owned by the Earl of Shrewsbury was discovered in Clerkenwell in 1628, the public outcry was so great that English Catholic parents feared that their children would be taken from them and raised as Protestants. While these fears may have been exaggerated, they were not completely groundless, given what really did happen to many practicing Catholics. In August 1628 Charles I signed a proclamation ordering the detention of all Jesuits and those who harbored them. In March 1629, to stem the flood of English Catholics who attended Mass in the ambassadorial residences, Charles posted guards outside the homes of the ambassadors from Spain, France, and Venice who arrested English Catholics immediately after they emerged from Mass. Fines were also levied against "recusants," the name given to those who recused themselves from the Church of England. Although the revenue from these fines was significant—it averaged £6,000 per year in the 1620s, and by the mid-1630s more than £20,000 was pouring into royal coffers—their intention was not just to increase revenue but to provide tangible penalties for practicing the Catholic faith.<sup>21</sup>

By converting to the Church of England, Digby's position in the court undoubtedly improved. In fact, the practice of the Catholic faith was illegal, and Digby could have been imprisoned, though the law was rarely enforced. As a Catholic, Digby was forced to pay recusancy taxes on his estate. Moreover, the Protestant polemic in England consistently portrayed the Catholic Church as hostile to reason, and this depiction may have had some effect on a man as intellectually curious as Digby was.

Upon Allen's death in 1632, Digby was bequeathed his library, and after consultations with Archbishop Laud and Sir Robert Cotton he gave the collection to Oxford's Bodleian Library.<sup>22</sup> He became close friends with Laud and gave him several Arabic manuscripts that were later donated to Laud's alma mater at Oxford, St. John's College.<sup>23</sup> We have few details on the relationship between Digby and Laud in the 1630s, but their friendship is significant. They shared several aspects of their lives and interests. Both men held theological positions that ran counter to



the prevailing mood. Oddly, Arminianism was ultimately more damning than Digby's Catholicism, and this certainly contributed, in part, to Laud's beheading in 1645. Although Laud and Digby may not have agreed theologically, they were intellectual mates, content to sail against the prevailing headwinds and currents.

Digby's return to the Catholic Church was far from unusual. The number of Catholic conversions in the 1630s led to near hysteria among Protestants. Queen Henrietta Maria was completely devoted to the Catholic faith and was surrounded by an equally devout circle of friends and supporters. In 1624, when she and Charles were married, the articles of their marriage guaranteed that she could practice her faith safely. The result was a royal enclave of Catholicism that served not only as a safe place of worship but also as a locus where attempts at conversions could be broached. Indeed, she felt a duty to proselytize. Her godfather was none other than Pope Urban VIII, and when he communicated his marriage dispensation he told her that "she was to be the guardian angel of English Catholics."<sup>24</sup> Among the more prominent converts was Walter Montagu, a friend of Digby's and a favorite of the queen, who alienated both his father and his king with his conversion.<sup>25</sup>

In 1639 Charles I granted the Jesuit priest John Goodman a reprieve from execution. Goodman had been sentenced to death under the Elizabethan statute that prohibited Jesuits from even setting foot on English soil. The House of Commons responded by demanding the removal of the Catholics in Charles's retinue, Wat Montagu, Toby Matthew, Digby, the queen's secretary Sir John Winter, and the papal nuncio, Count Rossetti. Charles ignored the demand. Instead, Digby and Montagu were called in and questioned as to whether the queen's contribution to the Scottish war could be increased.<sup>26</sup>

As irritating as these issues were, there was little Charles could do. He could not challenge his wife's right to practice her faith, and he probably was not interested in doing so. What troubled Charles was the persistence of the conversions. In 1638 Katherine Howard and Lady Maltravers, wife of the heir to the most sought-after house in the kingdom, converted.<sup>27</sup> While Catholics in Charles's court in the 1630s did not accurately represent the Catholic community in England, they clearly enjoyed a disproportionate influence in the political sphere between 1637 and 1642, and they took advantage of their unique position.<sup>28</sup> Seventeenth-century readers of John Foxe's *Book of Martyrs* and observers of the Caroline court believed that the greatest danger to their religion was not a Catholic invasion but an internal conspiracy centered in the court itself.<sup>29</sup>

Ultimately, Anglican fears of a Catholic takeover proved to be unfounded. The Catholics in Queen Henrietta Maria's immediate circle were not the older English Catholics, who were thought to be under Jesuit (thus Spanish) influence, but were more often female companions from the French court. Henrietta took

care to balance her devotion to her faith with her husband's political considerations.<sup>30</sup> Beginning in the final years of Elizabeth's reign, intelligence reports to the Privy Council made clear that the vast majority of English Catholics presented no threat to the security of the Crown. Many Catholics defied Rome and took the Oath of Allegiance to the English Crown, confirming the Protestant court's impression that Catholicism posed no serious danger. Protestants outside Charles's circle were largely ignorant of the intelligence reports and continued to mistrust the loyalty of recusants. When the civil wars of the 1640s ensued, the usual suspects were rounded up, and Charles's ambiguous words and deeds only made his loyal Catholics more vulnerable than ever.<sup>31</sup>

It was during his period of mourning that Digby set up a laboratory at Gresham College in London and began his work in chemistry and alchemy. According to John Aubrey, Digby arrived at Gresham in "a long mourning cloake, a high crowned hatt, his beard unshorne." The work and the community at Gresham probably helped Digby work through his loss. Aubrey observed that "he diverted himself with his chymistry, and the professors' good conversation." His initial work focused on the revivifying process of palingenesis, a project to which he was almost certainly drawn as a result of Venetia's death.<sup>32</sup> In the ensuing years, as he began to develop his natural philosophy, Digby kept such theological concepts as resurrection, perfection, and immutability always in sight. He had long been interested in natural philosophy, but the death of Venetia and his religious reconversion gave new focus to his scientific endeavors, which in turn helped to sharpen his theological positions. These years were to be the most intellectually fertile and productive of his life.

In 1635 Digby left England and traveled to Paris to escape the increasingly intolerant religious atmosphere in England; he resided there throughout most of the next twenty-five years. France must have been appealing to him, given the religious toleration provided by the Edict of Nantes, a model Digby no doubt admired.<sup>33</sup> Late in his life he pleaded with Charles II to remove the legal obstructions English Catholics faced,<sup>34</sup> presumably in the hope that England might eventually arrive at the same solution for Catholics that France had for Protestants.

Digby returned to England after the outbreak of hostilities in 1642 to fight with the Royalist Cavaliers. He was captured by the Parliamentarian troops and released in July 1643 after none other than the French queen, Anne of Austria, wrote a strong letter on his behalf.<sup>35</sup> Owing to his rank and accomplishments, Digby was merely restricted to Winchester House, the former episcopal palace of Lancelot Andrewes, where he was allowed to set up a laboratory and even hire a local glassworker, John Colnett, as an assistant.<sup>36</sup> He was released after about a year and returned to Paris, remaining on the Continent until Charles II's restoration to the throne of England in 1660.

Even in the midst of the wars there remained Catholics in England who hoped that reconciliation could be reached with the Church of England—and Digby became one of them. As with most early moderns, Digby's religious beliefs permeated his life and work, and rather than hide them, he promoted the Catholic cause, beginning with his own family. He and his brother George, who had also been raised in the Church of England and remained a member, engaged in a debate in a series of letters that were collected and published in 1651. On December 26, 1638, Sir Kenelm wrote to his brother to explain why he accepted the Catholic doctrine of the infallibility of the church fathers. The authors of Catholic doctrine were infallible, he told George, because their one and only purpose was to teach the meaning of scripture. He pointed out that in the aftermath of the Reformation, biblical exegetes' rhetoric was so rife with personal polemic as to seriously undermine its validity. Moreover, he said, restricting access to the Bible led to a more uniform and coherent understanding of scripture. Once it was conceded that this tradition represented the true teachings of Christ, he said, "It cannot be denied but that it is an easier and better rule to guide our understandings in the affaire of Religion, then to resort for that end unto the Scriptures alone."<sup>37</sup> Examining the scriptures unassisted and untutored was, for Digby, a perilous affair best left to those trained to meet its dangers. The ceremonies that Charles advocated were pleasant enough, but they did not go far enough in reaching out to a still deeply divided Christian community. Only the Catholic Church, he believed, was inclusive enough to accommodate all faithful Christians.

Despite Digby's faith in the infallibility of such venerable commentators as Saint Augustine or Saint Jerome, three years later he informed Sir Tobie Matthew of his belief that perfection resided in the natural world as well. The axioms of natural science were "nothing else but constant and unvarying rules gathered out of heedfull and accurate observing the trackes and motions of such bodies and agents as by their excellent and perfect composure, do proceede att all times and upon all occasions, in a complete masterly and unerring way."<sup>38</sup> While these letters addressed different topics, they shared a clear intellectual foundation: belief in perfection and, perhaps more specifically, immutability. Digby's letter to his brother addressed a central tenet of the Catholic Church—the infallible and enduring state of the Patristic writings—while the letter to Matthew dealt with the constancy and immutability of the rules of nature. For Digby, nature seemed to imitate Catholic doctrine and perhaps even provided a foundation for its immutability and infallibility.

Laws of perfection and predictable natural phenomena were topics that occupied virtually all of Digby's life, even coloring his personal correspondence. In a letter to one of his many debtors he wrote, "I have no small discouragement in hoping to receive in time your money-debt . . . since i see it hath not finished its

motion backwardly for he that wrote the superscription of your letter to me (if he still be with you and whose handes I kisse) is able to tell you, that the unsteady planets do never advance in their course till their motion of retrogradation be come to a periode. And in your letter, in stead of 300 you were to pay me, you owe but the 200 I lent you.”<sup>39</sup> For Digby, the church, nature, and society itself were governed by the same principles of immutable law that collectively guided individuals socially, politically, and personally.

Digby’s belief in infallible and immutable precepts in both Catholic theology and nature suggests the complexity of his intellectual life and, ultimately, his view of alchemy. His work was often explicitly religious and polemical. He was an apologetic advocate of toleration for Catholics in England for most of his adult life. It was his desire for a unified and inclusive Christendom that led him to study alchemy. He developed his own alchemical vision: an amalgam of Bacon’s skeptical attitude toward alchemy and deep Catholic faith. Although he believed that the transmutation of base metals into gold was possible, the techniques had to be replicable. Perhaps a philosophers’ stone was not even necessary, nor was Paracelsian mysticism. Like the sacrament of communion, the transformation was assured because all the components necessary for the miracle were in place when the Mass was said.

Alchemy was also a medium through which Digby could solve the problems presented by the compelling but theologically troubling mechanical philosophy.<sup>40</sup> It allowed him to move between Catholic theology and natural philosophy. In his *Religio Medici* (1642), Sir Thomas Browne (1605–1682) argued that God’s judgment would destroy the world as it was known. Digby rejected that notion: “I must beg leave to contradict [Browne] namely in this point, and to affirme that the letting loose then of the activest Element to destroy this face of the World, will but beget a change in it, and that no annihilation can proceed from God Almighty: for . . . it is more impossible that Nothing should flow from him, then that cold should flow immediately from fire, or darknesse from the actuall presence of light” (emphasis added).<sup>41</sup> While he certainly was not stating that God’s judgment would be an alchemical process in the way that Tymme and Fludd had, his rhetoric suggests his belief that a body created by God could not be destroyed but only transformed—a virtually universal belief among alchemists.

Just as Bacon expressed himself ambiguously on alchemy, so did Digby. At one point he remarked that the immortality of the soul could be demonstrated through natural philosophy without turning to alchemical secrets: “To exemplifie the immortality of the Soule, hee needeth not have recourse to the Philosophers stone.”<sup>42</sup> Digby may have been diminishing the primacy of alchemy, but here again we need to approach such comments cautiously. Given that he had become interested in alchemy during his studies with the Oxford mathematician and occultist

Thomas Allen in the 1620s, and that he engaged in this work for the rest of his life, Digby could not have been discrediting alchemy here. It is far more likely that he was rejecting the secrecy and the serendipity that surrounded it. Like Bacon, he believed that true alchemical principles had to be not only replicable but also independent of spiritual variables. Although we will see that alchemy could demonstrate the veracity of at least two Christian doctrines, the physicality of the soul and the resurrection of the dead, Digby seemed to believe that the immortality of the soul was an immutable truth that did not require occult proof.

### Catholicism and the Mechanical Philosophy

Shortly after he arrived in Paris in 1635, Digby composed his first theological treatise, *A Conference with a Lady about Choice of Religion*. The woman in question was Lady Purbeck, Frances Coke Villiers, the daughter of one of England's most luminous jurists, Sir Edward Coke. Lady Purbeck had fled London to avoid an arranged marriage, and Digby, who had only recently reconverted himself, used this opportunity to attempt to convert her to Catholicism.<sup>43</sup> He published the manuscript the following year, in 1636.

In his treatise Digby argued that the Roman Catholic Church's ability to trace its origin to the time of Christ was evidence that the church was unable to teach a false doctrine. While Catholic doctrine was the most infallible expression of God's will on earth, it was not the only source of spiritual edification. Natural philosophy also taught theological truths: "fayth thus delivered [by the Catholic Church], is absolutely more certaine and infallible then any naturall science whatsoever. And yet sciences are so certaine (I meane such as depend of experience and demonstration) as he were not a rationall man that should refuse his assent unto them."<sup>44</sup> Apparently, Catholicism was a faith, a tradition, and even a body of knowledge that could be perceived and understood by rational means. Catholic doctrine was infallible, but natural philosophy was nearly so, and Digby seemed to think that natural philosophy could be used to frame and reinforce the rationality of Catholic positions—even the most controversial ones.

One of the most contentious doctrines was the Catholic position that human salvation was not predestined and that individuals could choose to receive God's grace, or not, through the exercise of their free will—that is, by performing good works (or not). Lutheran and especially Calvinist theology swept that notion aside and proclaimed that God's grace was an inexplicable, divine gift that was manifest in an individual's faith alone. Individuals were tied to sin so ineluctably that one's only release was from God's inexplicable, divine intervention in the lives of those to whom he chose to give this gift. This Protestant theology of grace became a

crucial delineating line even within Protestantism in England.<sup>45</sup> Distinguishing the Church of England from the Roman Catholic Church became especially critical in the seventeenth century, because both James I and Charles I wanted their church to be recognized for its universal and inclusive appeal. In his first speech to Parliament, James I stated plaintively, “I acknowledge the Roman church to be our mother church although defiled with some infirmities and corruptions.”<sup>46</sup> When Charles I communicated with papal agents in the 1630s, he maintained that he was a good Catholic and not a schismatic.<sup>47</sup>

For Digby, predestination was the antithesis of universality precisely because of its exclusivity. His hostility to predestination was unyielding; in 1643 he referred to “the abyse of Predestination.”<sup>48</sup> His unity—and the unity of Charles I’s monarchy—was the kind of unity that the English grew to associate so closely with tyranny: prescribed liturgy, prayers, and papal authority that could cross sovereign borders. It was for precisely these reasons that virtually all English Protestants found Catholicism so abhorrent. Digby advocated a position that conforming members of the Church of England and most dissenters would never accept, and in a political atmosphere that was becoming increasingly volatile and intolerant of such dissent with each passing year. Yet it was precisely this issue of dissent that made Catholicism so compelling for him, for beyond the question of authority lay his larger goal of a unified Christendom.

In his *Conference with a Lady*, as we just saw, Digby argued that the Catholic Church espoused a faith “more certaine and more infallible then any naturall science whatsoever.” Turning to natural philosophy, he proceeded to argue that it was devoted to the study of matter, which was corrupt and imperfect. However, he thought that faith, precisely because it was not material, was higher and less subject to “contingency” and “error.”<sup>49</sup> Faith, for Digby, was almost Platonic in its immaterial perfection.

Evidently, Digby saw individuals’ ability to record the intent of God as a prelude to their ability to read the Book of Nature accurately. The perfection of faith expressed in Catholic doctrine provided him entrée into the study of the perfect and regular order of the natural world. In making this argument he was not simply equating Catholicism with unity but demonstrating its triumph. If the reformers were right, then the church fathers and Christian tradition must be wrong. But this was not possible, because, he reasoned, God provided inspiration, internally through the Holy Ghost and externally through miracles, and these two sources had sustained the church infallibly for more than a millennium and a half.<sup>50</sup> Further, the Catholic Church was far more widely dispersed and universal than any Protestant confession. The perfection of faith expressed by individuals and codified in the doctrine of the church was the standard that all laws and principles in natural philosophy had to meet.

Perhaps predictably, given that he belonged to an embattled minority, Digby's Catholic apologies were always framed in terms of irencism and toleration. He never relented in his task of reaching a more equitable sensibility between Protestants and Catholics in England. In a plea for religious toleration addressed to Charles II that was copied and circulated, he appealed to the monarch's sense of justice: "I cannot make it too smooth and plaine. It is evident in nature, Reason, Justice and conscience, that punishments ought not to be inflicted where no crime hath bin committed."<sup>51</sup> He used principles of natural philosophy as tools to demonstrate the irenic nature of his position. He believed that Catholicism was more perfectly aligned with the natural world than Protestantism was. By adhering consistently to the fundamentally *natural* aspects of toleration, he could advocate his religious belief—even in the eyes of his opponents—without appearing to be simply partisan and divisive.

However, Digby's Catholic beliefs caused more than awkward political and practical difficulties. Like many adherents of the mechanical philosophy, there were theological problems to resolve. These problems required Digby to focus much of his energy on their complex—and, for him, ultimately alchemical—resolution.

While he lived in Paris, Digby was associated with the so-called Newcastle Circle, a group of English mechanical philosophers turned émigrés composed of Thomas Hobbes, Charles Cavendish, William Cavendish, then Marquis of Newcastle, and John Pell, who alone resided in the Netherlands. Digby, it seems, joined the group through Hobbes upon its arrival in Paris from Newcastle. During his twenty-five years in Paris, he circulated among enclaves of both French and English Catholics, all the while keeping abreast of events in England. These groups believed that universality was, to a great extent, the *raison d'être* of the Catholic Church. Digby and his English Catholic colleagues hoped that by using widely accepted principles of natural philosophy, some universal theological truths could be clarified and perhaps Christendom unified once again.

During this time, Digby, along with other English exiles, discussed the subtleties of the mechanical philosophy with virtually all of its most illustrious proponents: Isaac Beeckman (1588–1637), René Descartes (1596–1650), Pierre Gassendi (1592–1655), Thomas Hobbes (1588–1679), and Marin Mersenne (1588–1648), to name a few. They met to discuss one another's work throughout the 1640s and 1650s.<sup>52</sup>

Gary Deason explains that the mechanical philosophy, from its inception, began with a single assumption: Matter is passive. Change in matter did not occur because of an inherent tendency in matter to change but as a result of external forces that compelled inert matter to change. Change, therefore, according to mechanism, was a result of motion.<sup>53</sup> Digby believed that the fundamental properties of bodies were quantity, density, and rarity, and that these qualities

accounted for the nature of matter.<sup>54</sup> His mechanical philosophy also incorporated Stoic, Christian, and alchemical ideas. Despite his inclusive approach to the mechanical philosophy, he was surrounded by the foremost mechanical philosophers of the day and was deeply influenced by Descartes, Hobbes, and Mersenne. Digby's approach to the mechanical philosophy may have been uniquely his, but it was not wholly unorthodox, either.

Like Mersenne and his colleague Pierre Gassendi, Digby considered the theological implications of the mechanical philosophy very carefully. He always maintained that natural philosophy was inherently inferior to theology. As we have seen, he recognized that although natural philosophy could help untangle a theological knot, it was nevertheless inferior to pure theological reasoning. Like Thomas Tymme and many other natural philosophers of the seventeenth century, he considered the Book of Nature theologically complementary but inferior to the Book of God. Yet he blurred the distinction, cleaving to the natural laws demonstrated through his studies but keeping the sacred goals and nature of his work intact. The role of the mechanical philosophy was prominent in his discussions of the soul. Although he outlined his position on the resurrection of the dead in his *Observations upon Religio Medici*, he set it forth in much greater detail in his largest and most ambitious work, *Two Treatises: The Nature of Bodies; The Nature of Mans Soule*.

The *Two Treatises* is a vast volume, first printed in a folio edition in Paris in 1644. The first treatise, devoted to physical bodies, comprises fully three-quarters of the entire text. Digby intended to make the first part the foundation for the more important second part, his examination of the soul. His dedication to his son reads, "What needeth he feare the desolations of warre, and the worst that they can do against him, who have his estate in their power, when he may be rich with a much nobler treasure that none but himselfe can robbe him of?"<sup>55</sup> He later told his son, "To the end then that you may be armed against the worst that may arrive unto you, in this unhappy state of affaires, in our distressed country; I send you those considerations of the nature and Immortality of humane soules, which of late, have beene my chiefe entertainment."<sup>56</sup> The date of its publication, 1644, is surely significant. Digby's volume was produced in Paris while his homeland was at the height of its Civil War. Yet it was in the preface that he made his true intentions explicitly clear:

This writing was designed to have seene the light under the name of one treatise. But after it was drawne in paper; as I cast a view over it, I found the proemiall part (which is that which treateth of Bodies) so ample in respect of the other . . . that I readily apprehended my reader would thinke I had gone much astray from my text, when proposing to speake of the immortality of



Mans Soule, three parts of foure of the whole discourse, should not so much as in one word mention that soule, whose nature and proprieties I aymed at the discovery of. To avoyde this incongruity, occasioned mee to change the name and unity of the worke; and to make the survay of bodies, a body by it selfe: though subordinate to the treatise of the soule.

Clearly the treatise on the soul could not be understood without a firm grasp of the physical principles of the mechanical philosophy.

Digby's religious beliefs played a prominent role in the argument of the *Two Treatises*. He believed that the immortal soul could and indeed must be understood by natural philosophical principles if individuals, particularly non-Catholics, were to accept his arguments.<sup>57</sup> Although his concerns were not uniquely Catholic—Protestant natural philosophers shared them—he had to frame his argument in such a way that it would be acceptable to his mostly Protestant audience. This strategy did not mean that he distanced himself from his faith when it became inconvenient, but it begins to explain why he wanted to integrate his religious argument into the principles of natural philosophy. His goal was to build a bridge between the two confessions.

The Fifth Lateran Council in 1513 had established the immortality of the soul as official Catholic dogma. In an almost haunting anticipation of Luther a few years later, the council asked that Christian philosophers “use all of their powers’ to demonstrate that the immortality of the soul can be understood by natural reason and not by faith alone.”<sup>58</sup> Digby and his Catholic circle were engaged in discussion of this and related issues. Pierre Gassendi in particular sought to resolve the troubling theological implications of the mechanical philosophy.<sup>59</sup>

Digby and his cohorts saw the *Two Treatises* as an answer to the theological problem that confronted them in Paris in the 1630s and 1640s. Aquinas's four-hundred-year-old synthesis of Aristotle and Christianity had largely identified the role of God in Aristotelian physics. If Aristotelianism was to be replaced by mechanism, then the role of God had to be clarified once more. Yet Digby's philosophy of the soul, as expressed in the *Two Treatises*, was planted firmly in the soil of Aristotelianism. Aristotle's *De anima* opens with the statement that “the soul is, so to speak, the first principle of living things. We seek to contemplate and know its nature and substance and then the things that are accidental to it.”<sup>60</sup> Like Aristotle, Digby believed that the soul was “the first principle of living things.” It was an “orderer” that could direct itself through its own volition and also communicate its dicta to order other things. Like matter, the soul was subject to motion, but unlike matter the soul could “communicate it unto such things, as are to be ordered.” He was satisfied that he had demonstrated the soul's intelligence and, especially, its free will: “then, sithence *ordering* is motion,

it followeth evidently, that the soule is a moover and a beginner of motion."<sup>61</sup> His belief that the soul could communicate its will to material bodies was an implicit statement that individuals had free will. If the soul could not communicate its will to move matter or bodies, then free will was not possible—a position he explicitly rejected.

To Puritan ears, Digby's language was incendiary. England was in the midst of a civil war ignited in part, some have argued, by the very issue of free will. It has been argued that the predestinarian theology of grace was the fundamental divide between the Church of England and the Catholic Church, which began to take shape in the Elizabethan period and continued through the first half of the seventeenth century. When James I accepted the Synod of Dort's reaffirmation of the predestination of the soul as a tenet of the Church of England, some read this as a ringing endorsement of the doctrines of unconditional predestination, limited atonement for the elect, and irresistible grace.<sup>62</sup>

Nicholas Tyacke has argued that the English gentry's nearly hysterical fear of Catholics was intimately related to Arminianism, the doctrine that introduced the role of free will in the Protestant interpretation of grace. While Tyacke is certainly right to note this tension, Arminianism was probably not an actual *casus belli*. The division between moderate Anglicans and radical Calvinists and other Puritans was a more likely cause.<sup>63</sup>

It was in this tumultuous setting that Digby undertook his study of the soul according to the mechanical philosophy. He defined the nature of a "separated soul," that is, a soul that existed outside a body, in terms of place, time, and activity. A spiritual substance, he said, resided not in a single place but in all places. Just as a soul was not bound to a single place, neither was it bound by the constraints of time. In addition, "A third property we may conceive to be in a separated soule, by apprehending her to an Activity; which that we may rightly understand, lett us compare her, in regard of working, with a body: reflecting then upon the nature of bodies, we shall find, that not any of them will do the functions they are framed for, unlesse some other thing do stirre them up, and cause them so to do." Similarly, "the soule, . . . by its nature, motion may proceed from it, without any mutation in it, or without its receiving any order, direction, or impulse, from an extrinsecall cause."<sup>64</sup> In other words, unlike matter, the soul was not inert and could move itself without the application of an outside force.

The mechanical philosophy served as Digby's point of comparison to the soul. "A seperated soule," he wrote, "is of a nature to have, and to know, and to governe all thinges"—a deliberate distinction between spiritual matters and physical matter that allowed him to distance himself from the taint of predestination. Indeed, it was the issue of predestination that brought his colleague, René Descartes, such notoriety.<sup>65</sup>

These issues brought to the surface the central Christian doctrine of the Trinity. Descartes's system was essentially theistic: He reserved a place for God the Creator but not for God the Redeemer, much less for God the Holy Spirit. This was a crucial component of the discussion, because it was in the matter of God the Redeemer that the question of free will or predestination lay.<sup>66</sup> Thus contemporary theologians' accusations that Descartes's system was essentially Pelagian—a fifth-century heresy claiming that individuals could enter the kingdom of heaven through their own force of will and without divine grace—had some cause.<sup>67</sup> Although not all mechanical philosophers cared about this issue, Digby was deeply concerned about its doctrinal implications.<sup>68</sup>

Digby immunized himself from the contagion of Pelagianism by turning to natural philosophy. His first treatise, on the nature of bodies, established the inherent coexistence of the body and soul. Further, although the *separated* soul was divine, it was subject to corruption and damnation as long as it existed within a corporeal body. While the soul was bound to the body, it was subject to human reason, which was always subject to sin and error. Still, the soul could be exalted while existing within the body through the action of knowledge. He believed that the soul, like matter, could mutate and increase its knowledge while the body existed. "A soule in this life is subject to mutation," he observed, "and may be perfected in knowledge." However, knowledge did not simply elevate a soul in this world; it *improved* the soul's existence in the next: "That the knowledges which a soule getteth in this life will make her knowledge in the next life more perfect and firme."<sup>69</sup>

Natural philosophy was particularly efficacious in the elevation of the soul, although also quite exclusionary. "The soules of men addicted to science whilst they lived here," Digby noted, "are more perfect in the next world then the soules of unlearned men." Simply studying human action, or working to obtain a skill in an art or trade, would not suffice to exalt the soul: "They who spend their life here in the study and contemplation of the first noble objects, will, in the next, have their universall knowledge (that is the soule) strong and perfect: whiles the others, that played away their thoughts and time upon trifles, and seldome rayed their mindes above the pitch of sense, will be fainte throughout their former laiznesse, like bodies benumbed with the palsey."<sup>70</sup> Knowledge obtained through contemplation and experimentalism, rather than simply through physical activity, would exalt the soul. For Digby, natural philosophy combined contemplation and activity perfectly.

The soul was limited precisely because it was physically bound to the body while the body was alive, and the salvation of the soul thus depended largely on the decisions of an individual's reason and the actions of an individual's body.

This, Digby argued, was how individuals became responsible for their salvation and not subject to a predestined fate. Whether a soul was miserable after death was the result of judgments made in life by an individual's free will. This was just, Digby thought, because if one was inclined "to a lesser good," then one's actions would lead in that direction, while if one had "a greater inclination to a greater good," then those actions would also follow in that direction.<sup>71</sup>

Individuals were subject to tendencies, but tendencies could either be overcome or go unheeded; assurance did not figure in Digby's idea of salvation. Knowledge could exalt the soul and perhaps even lead to its eternal salvation. However, knowledge was also intimately related to the corruptible body and was therefore, by definition, limited. Moreover, as noted above, it was subject to reason, and nothing was more fallible than human reason. The individual will was thus the "motion" required to determine the outcome of the soul.

The significance of Digby's *Two Treatises* lay not in the natural philosophy it expounded but in the theology it sought to preserve. God was more than just a creator and arbiter of universal natural laws. God had provided a path to redemption, a path that the individual could choose through the exercise of his or her free will. While the mechanical philosophy provided a soul with the potential for salvation, however, the means of that salvation remained unclear in the natural world. Free choice was only one factor in an individual's salvation. No matter how pious one might be, individuals remained dependent on God's grace for salvation. Digby still needed to identify the soteriological role of the Trinity—the Christ-centered role—in his mechanical philosophy.

Digby had amalgamated and reconciled the mechanical philosophy and the Catholic advocacy of free will, but the doctrine of the Trinity remained to be resolved. He could identify God the Creator, but God the Redeemer and God the Holy Spirit remained at large. It was at this moment that Digby turned to alchemy. Years would pass before he fully worked out this problem. His research in the last years of his life was concerned with ideas of purification and redemption, and he integrated his Catholic beliefs with alchemy to resolve some nagging theological concerns.

### Alchemy and Redemption in Digby's Natural Philosophy

However rarified the air was that he breathed, Digby was also a man of this world, and he turned his service as a soldier into diplomatic and political service. In the 1630s Digby wrote to Secretary Coke weighing in on the French perception of the English navy.<sup>72</sup> Although he had left London, he did not leave Charles's service.

Indeed, as Queen Henrietta Maria's chancellor, he served as envoy to Rome in the mid-1640s, trying—but failing—to shore up support from European courts even as the ground was collapsing beneath Charles's feet.<sup>73</sup>

Upon Cromwell's victory he found himself in much the same position as other Royalists, his property seized and his income cut off. Only a month after Charles's execution on January 30, 1649, however, the Puritan Thomas Watson came to France to urge Digby to return to England. Digby agreed to return, both to see if Catholics could be tolerated in the new regime and to try to recover at least part of his estate. He met with Cromwell but was also summoned before the Council of State and questioned alongside Montagu and Winter. All three were deemed dangerous, guilty of visiting England without permission and given twenty days to depart—returning signaled death and confiscation of any remaining property.<sup>74</sup>

Digby's fortunes turned a few years later. In 1653, deeply in debt, he petitioned the Council of State for the return of part of his estate. Although the request was refused, he was invited to return to England the following year, and once he did, astonishingly, he was allowed to remain. Before long he moved into Whitehall and joined Cromwell, the start of a flourishing relationship with the lord protector. Anthony Wood remarked that Digby was "cringing to Oliver," and Wood was not alone in his disgust. Clarendon and William Prynne also detested the close relationship he enjoyed with the Calvinist protector. However, the fact remained that Cromwell seemed to genuinely appreciate Digby's company. Even after Cromwell survived an assassination attempt and began taking elaborate precautions to protect himself, he continued to see Digby frequently, in spite of Digby's continuing zeal for the Catholic faith.<sup>75</sup> Ultimately, though, he never achieved anything close to a policy of toleration for Catholics, and in 1656 he returned to France.

Despite his rather impressive political recovery, Digby never completely deserted his studies in natural philosophy. In 1658 he gave an address in Montpellier, France, on his sympathetic powder.<sup>76</sup> In 1661, four years before he died, he published an address he had given at Gresham College in London on vegetation titled *A Discourse Concerning the Vegetation of Plants*. Like his other treatises on natural philosophy, this text extended far beyond the study of botany. Vegetation, and more specifically germination, was a cosmic event. He argued that the vegetating seed showed in microcosm a vast vegetating process that occurred in the universe, a process with important corollaries in religion and alchemy.

Digby used the language of an alchemist to describe a botanical process. He used the terms "rarefaction," "condensation," "fermentation," "concoction," and many others. In short, he turned to the language of an alchemist when he began his discussion of vegetation.<sup>77</sup> He may also have had his own mortality and perhaps even the memory of Venetia in mind as he developed his argument. For after

listing all the alchemical “virtues” his readers would encounter, he noted, “but presently I should have in my view, the reparation of a decaying life, and the reproduction of a faded one; and so ingulfe my self in the mysterious contemplation of the resurrection of dead and dissipated bodies, and how they may continue the same individuation, and be again the same identicall body, after so many strange changes, and after having put on so many different habits and shapes, as we daily see in the course of Nature” (3–4).

Fermentation was another alchemical process that he used to explain the resurrection of the dead. Fermentation was a process that could lead to the complete “Putrefaction, Dissolution, and Destruction of the compound.” However, if the fermentation process was contained within certain limits, “then the body in which it was wrought, is raised to a nobler pitch, and the Ethereall spirits of it are actuated, and put in possession of their native vertue” (13–14). Digby thus provided an alchemical description of the resurrection of a vegetative body, but this concept could also be applied to the resurrection of the dead.

Something that had been seen as a miraculous process was, according to Digby, comprehensible without requiring faith or spirituality, much less occult methods or techniques: “And it is want of consideration of judgement, which maketh men fly to occult and imaginary qualities, to shroud their ignorance under inconceivable termes: Whereas nature in her self is pervious and open to humane discovery, if a due course be taken to dissect and survay her” (48). Examining the question of miracles through occult means—especially for a Catholic—was a delicate matter. Digby believed that alchemy provided a solution for the problem but wanted to diminish the hidden, “occult” aspects of the process.

Digby’s use of the term “occult,” as it was understood in the seventeenth century, has received careful attention and analysis. Keith Hutchison argues that the word “was part of the technical Peripatetic terminology used to distinguish qualities which were evident to the senses from those which were hidden. In this context it was the antonym of ‘manifest.’” Manifest qualities required using the senses, such as taste or sight. Typical occult qualities consisted of the motion of the planets, the magnetic virtue, or the result of a specific medical treatment.<sup>78</sup> Ron Millen has refined Hutchison’s argument, noting that Scholastics in the sixteenth and seventeenth centuries contributed to the understanding of occult qualities.<sup>79</sup> John Henry has argued further that the role of active or vitalistic principles played such a prominent role in seventeenth-century English natural philosophy precisely because mechanical philosophers believed that active, but hidden or occult, properties were the best way to understand God’s creation and therefore played an essential role in defining the true religion. A cadre of English mechanical philosophers—Robert Boyle, Walter Charleton, and Henry More—considered it essential to identify God as the prime mover in the mechanical philosophy.<sup>80</sup> Digby

shared the concerns and goals of his colleagues, but he turned to alchemy to determine the role of God in the mechanical philosophy.

To see universal implications for life and death in vegetation was eminently appropriate in the seventeenth century. Finding religious significance in the process of regeneration would have been equally appropriate. The doctrine of the resurrection of the dead had occupied generations of theologians. Questions of how, upon Christ's return, the dead would be raised, what the bodies would look like, and how they would be received by God were questions continually asked but for which satisfying answers were few.<sup>81</sup> Digby used the New Testament in his search for rejuvenation, resurrection, and redemption, but he believed that alchemy held promise as well.

As noted above, palingenesis was the notion that plants and animals could be revived or resurrected from their calcined ashes. Digby failed in his attempt to revive calcined flowers when he followed the process described by the Jesuit natural philosopher Athanasius Kircher (75). When he followed Joseph Duchesne's method, however, it worked exactly as he had said it would (76). Digby guided his audience through Duchesne's palingenesis process, which ultimately led him to consider the resurrection of the dead (76–85). "All this leadeth me to speak something of the Resurrection of humane bodyes. There we may find some firm and solid footing. Hitherto we have wandered up and down in the Mazes of Fleeting matter, *qua nunquam in eodem statu permanet* [as a shadow and continueth not]. And with great truth did *Job* apply that expression to the State of men living in this World" (85).<sup>82</sup> Once humanity's "frail Mortality" had been put to rest, he explained, then "a state of permanence and immutability" would exist (85–86).

Not onely whiles the Soul is seperated from the Earthy Companion, but when she shall be cloathed again, that new flesh will partake of the constancy of her glorious Mate. But why doe I call it new flesh? I may be pardoned for doing so, when I consider the new qualities and endowments it shall have put on. But otherwise, *in substance and reality, it is the same, the very same, that (for example) accompanied me in this long and tedious Pilgrimage upon Earth*. How is this? If a Caniball should feed upon my body, and convert it into the substance of his, can both of us rise again with the same bodyes we enjoyed here? Yes, without doubt we may. And I conceive, that the taking away of this difficulty, which hath so highly perplexed even the best Christians, will be so welcome a performance to them who yet have not met with it; that for its sake you will pardon the tediousnesse and coursenesse of all I have hitherto said. And with that, I will cease further troubling you. (86–87, emphasis added)

Just as Duchesne's process of palingenesis restored the calcined plant to its original state, so would the resurrection of the dead revivify bodies in a way that would be both new *and* original. The substance of the human form would not be destroyed with death, only its accidental properties. The state of the body at death was not important. Thus the destruction of a body would not destroy the body's potential to be raised in its original form, reassuring news for Christians concerned about the precise details of Judgment Day.<sup>83</sup>

Digby then clarified why it was important to understand natural philosophy and the alchemical properties of vegetation and resurrection: "I doe not undertake to shew here how this great work is wrought. . . . *But my undertaking is, to convince that there is no impossibility nor contradiction in nature, against this great and amazing Mystery*" (87–89, emphasis added). For Digby, the resurrection of the dead was not a miraculous process but a natural one, and therefore one that individuals could comprehend. If the process could be understood, then it was not miraculous; anyone who understood the process and devoted the time, energy, and resources could reproduce it. One did not have to be divinely chosen or "elect."

By eliminating the mystical or divine aspects of alchemy, Digby implicitly separated himself from the Paracelsian tradition that depended fundamentally on the role of God's blessings and the particular spirituality, sometimes even the election, of a particular alchemist.<sup>84</sup> That an alchemical procedure be replicable—regardless of a given philosopher's particular church—was an important requirement for Digby and a measure of his desire to apply the more rigorous principles of natural philosophy to the occult tradition of alchemy than previous generations had. It also preserved his Catholic belief in individual free will.

Yet Digby's position on free will was only one aspect of his theory of the resurrection of the dead. He also related the question of resurrection to his eclectic matter theory and his alchemy. Matter was the "capacity to be this or that or any thing whatsoever." What determined that capacity, however, was "form," the blueprint of matter on earth. "And consequently as long as the Form remaineth the same, the thing is the same, and the matter is the same. Were it not for this [Form], how could any body under Heaven remain the same even but for a short Moments space? All sublunary things are in a perpetuall Flux" (91–93).

By the 1660s, Digby's confidence in Aristotelianism had eroded. The forms to which he referred here appear to be Platonic. Platonic thought dictated that matter was by definition mutable, the imperfect representations of immutable and universal forms. Matter on earth composed all material objects, which were imperfect representations of perfect, immutable, but immaterial forms, and were always "in a perpetuall Flux" (93). The Aristotelian conception of form was founded



on the principle that change was the principal task of nature. Aristotle's forms seemed to be immutable.

It was also during this time that the mechanical philosophy became less important to Digby's understanding of natural philosophy. The resurrection of the dead was not the result of the mechanical philosophy and indeed was not even relevant in the vegetation process: "For speaking rigorously, I cannot allow Plants to have Life. They are not *Se Moventia*, They have not a principle of motion within them. It is the operation of outward Agents upon them, that seteth on foot all the dance we have above so heedfully observed, and which so near imitateth the motions of Life" (80). Resurrection occurred because of a "Universall Spirit" that resided in all things. "This Universall Spirit then being Homogeneall to all things, and being in effect the Spirit of Life, not onely to Plants, but to Animals also: were it not worth the labour to render it as usefull to mens bodyes, as to the reparations of Plants?" (70).

The "particles" of matter of which living bodies were composed were guided and organized by the divine force, Digby's "Universall Spirit," a force intimately related to alchemy. This spirit was present in all matter but was diminished by its contact with base materials—the single exception being gold, the most noble substance of all. Gold had the same nature "as this aethereall Spirit; or rather, it is nothing but it, first corporified in a pure place, and then baked to a perfect Fixation. *Raymund Lully* in his excellent Treatise *de intentione operantium*, describeth admirably well the Genealogie of it. If then this perfect body (I mean Gold) could be rendered familiar and digestible to ours, there is no doubt but it would prove a kinde of Tree of Life to us" (71–72). Then, in the veiled language of the adept, Digby observed, "It [gold] is of it self too firmly composed for any Agent upon Earth to dissolve it. But peradventure the Mother [the Universall Spirit] that bore him, may reincrudate [that is, make crude again] him [gold] and reduce him back into his first volatile principles" (72). Following the principle of "like dissolves like," the "Universall Spirit" might dissolve gold, since the two were so closely related. While perhaps not the philosophers' stone itself, this "Universall Spirit" and gold were at least components of an alchemical process.<sup>85</sup>

Digby's reference to a universal spirit may have been a reference to the Stoic *pneuma*, a medium that the matter of the cosmos shaped into its present state, providing the shape of living creatures on earth as well. Stoicism experienced a revival in the seventeenth century, due largely to the literary excavations accomplished by one of the late Renaissance humanists, Justus Lipsius.<sup>86</sup> Digby's description of gold does not appear to be particularly physical and was perhaps also reminiscent of the Stoic *pneuma*. Gold was sublimely infused with the universal spirit, which could heal wounds and extend life.

Digby's last alchemical text was his *Chymical Secrets*, published posthumously in 1682, with a second imprint appearing the following year. Although this treatise was largely an alchemical recipe book, the brief preface was a vigorous apologetic for both alchemy and Catholic and Christian doctrine, beginning with a statement of Digby's philosophy of the transmutation of metals. Digby argued that alchemical processes should be replicable, that the Catholic doctrine of free will was a crucial element in the alchemical process, and that he had found in alchemy the place of God the Redeemer in the Trinity.

The first point, that alchemy should be replicable, had already been established in his discourse on vegetation:

Having Written so many Processes, and made so many Tryals, and heard so many Discourses of Learned Men upon this Subject, *I will give you an Account of an easie Method that I have resolved upon for accomplishing this Work. Namely, That all imperfect Metals and common ☿ [mercury] may be transmuted into ☉ [gold] by one and the same Method; to wit, by Maturation and Coction, and not by Generation; for that which is generated, is no more that which it was before it was generated: And that which is Corrupted, is no more that which it was before it was Corrupted.*<sup>87</sup>

Digby's introductory statement had important implications for both natural philosophy and theology. As the text was an alchemical recipe book, either he and his colleagues had attempted the recipes or he had conferred with others who had. Digby's claim that all imperfect metals, including mercury, could be transmuted into gold by the same method was thus an observation not only about the common properties of metals but about the universality and reliability of his methods. As Dobbs observes, "The experimental nature of the collection cannot be emphasized too strongly. . . . Starting materials are clearly described, the quantities necessary for each step are given, and requisite 'degrees of fire' are delineated. In many cases there is little or no difficulty in translating the processes into twentieth-century terminology."<sup>88</sup> Clearly, Digby's results were intended to be replicable by anyone who performed the experiments.<sup>89</sup>

Digby's second point was that his method was the result of "maturation and coction"—both alchemical terms—rather than "generation." Maturation described the process of converting a base metal into gold in the alchemical process. Francis Bacon made a specific reference to alchemical maturation in his *Sylva Sylvarum*: "for we conceive indeed, that a perfect good concoction, or digestion, or maturation of some metals, will produce gold."<sup>90</sup> The term "coction" can mean to cook something and was a key term in Hippocratic and Galenic physiology; for

the alchemist it meant a natural process in which a metal was brought gradually to perfection. The significance of these two terms, and why Digby needed to distinguish them from “generation,” was related to his matter theory. Like virtually all other mechanical philosophers, Digby assumed that God made all the matter of the universe *ex nihilo*, from nothing. The task of the alchemist was to purify existing matter by removing the imperfections from it. This was why he insisted on the distinction between these processes and “generation.” The creation, or generation, of matter was the province of God alone.

However, Digby’s theological concerns did not end with his reconciliation of mechanism and generation. He used theological rhetoric in a discussion of transmutation: “But the baser Metals after they are transmuted into ☽ [silver] or ☉ [gold] are still Metals nevertheless as they were before, and the transmutation of their kind is done by changing their accidental form, not their substantial, the perfection whereof is Maturity; for by Maturation the Metal is brought to a higher degree of perfection. . . . Yea, ☉ it self may be further perfected, and exalted in colour, as when the Stone is made of it, it will communicate this Maturity to imperfect Metals.”<sup>91</sup> The language of baseness, perfection and imperfection, exaltation, and transformation is certainly typical of the alchemical tradition, but we will see how these terms also speak to Digby’s assumptions about the theological significance of alchemy.

In *Chymical Secrets* Digby was finally able to identify the remaining pieces of the Trinity that had eluded him in the *Two Treatises*. The mechanical philosophy had not explained the presence of the Trinity in the universe unequivocally. We have seen how Digby identified God the Creator, but God the Redeemer and God the Spirit had eluded his grasp. In *Chymical Secrets*, however, he made the following observation:

You shall suddenly see marvellous things, when the Soul of the said ☉ (which is its Oyl) entreth into the Body of the ☉, by means of the Spirit, which is the Solary, ☿ [mercury], and that by means of the said Soul, the Spirit uniteth with its Body, of three being made one. . . . The Body of the ☉ which was dead before, being by this only and admirable means animated, dignified, and filled with a Vegetative Life, and thereby acquire an inward Power of Multiplication, as well as the Sperms and Seeds of all Animals and Vegetables, and be made fit to grow and produce Fruit, (being sowed in a fit Earth) which it could not do before, because of that default.<sup>92</sup>

The Trinity of Creator (“Soul”), Incarnation (“Body”), and Holy Spirit (“Spirit”) was present in the alchemical process. A creation by God’s hands was dead but revived by his “Spirit.” Digby’s alchemy confirmed that the matter theory of the

mechanical philosophy needed to be tempered with other philosophies, such as Christian Aristotelianism, Neoplatonism, and even Stoicism, that were present in the alchemical process. He never discarded the mechanical philosophy, but neither did he embrace it in its purest form, as Descartes and especially Hobbes had. Like that of many other alchemists, Digby's natural philosophy was the seemingly contradictory amalgamation of both Aristotelianism and Neoplatonism that allowed him to incorporate alchemy into his argument. He believed in the triune God, but he understood and was convinced of its reasoning, in part through the mechanical philosophy and, just as notably, through alchemy.

Digby's *Chymical Secrets* should be seen as a specific guide to his philosophical and theological claim in the discourse on vegetation: that the resurrection of the dead was feasible. The remains of animals and vegetables, once impregnated with the philosophers' stone, received a new life that allowed them to grow and reproduce. The alchemical process was not simply concerned with leavening, growing, and developing. The philosophers' stone made that which was once dead alive.

Digby's Catholicism permeated his life and thus also his natural philosophy. He viewed alchemy and natural philosophy not just on their own terms but as a means of resolving theological problems and confirming Catholic doctrine.<sup>93</sup> He probably associated the transformation of the spirit through religious rituals with his natural philosophy. If individuals could be transformed into a state of grace through a series of sacred rituals, then surely material bodies could also be purged of their corrupt elements and their pure elements revealed. If the processes of dissolution and putrefaction had alchemical significance, then they had theological significance as well. He had already explained that his treatise on the nature of bodies could not be understood without grasping the argument of his treatise on the nature of the soul. Irrefutable and immutable principles in natural philosophy could only be, by definition, expressions of God.

For all of these reasons Digby's natural philosophy, theology, and even politics need to be understood with his ultimate goal of unity in mind. The goal of his Catholic natural philosophy was not to destroy Protestantism but to unify Christianity. His use of natural philosophy to prove that the "true church" resided in Catholic doctrine was part of a larger discussion, joined by natural philosophers as various in their views and beliefs as Robert Fludd, Sir Francis Bacon, and Thomas Hobbes: that natural philosophy had profound religious and political effects that could heal social, political, and religious divisions. These men saw natural philosophy as the irenic tool that could heal the divisions of Christianity that had plagued England and Europe since the Reformation.

Like many natural philosophers, Digby borrowed freely from Christian, classical, Judaic, and occult sources, but his natural philosophy began and ended with his Catholicism. The beauty of the Catholic Church, in Digby's view, was the unity

of its doctrine. Catholic authorities were unanimous in their interpretation of scripture, whereas “scarce any two authors, out of the Romane Church, that have written of matters of faith have agreed in their tenets, but rather have dissented in fundamentall doctrine, and have inveighed against one another in their writings with great vehemence and bitterness.”<sup>94</sup> He acknowledged disagreements within the Catholic Church, but not on matters as fundamental as church doctrine. He had witnessed personally the destructive results of religious divisions in England. Individual religious belief had not resulted, in his mind, in a harmonious “true church” but had led instead to civil war. Perhaps the authority of the pope was not ideal, but the alternative was clearly worse.

The conflict borne of religious difference was never far from Digby’s mind. The dedication to his son in the *Two Treatises* is permeated by his awareness of that conflict. “The calamity of this time being such, as hath bereaft me of the ordinary meanes of expressing my affection to you,” he wrote to his son.<sup>95</sup> Yet the English Civil War was more than a calamity. It was the axis upon which his work, and that of his fellow scholars and occultists, revolved. There was an inherently political, even an inherently polemical, quality to this and every other document that Digby produced. His desire to return England to the arms of the Roman Catholic Church suggests his confidence that genuine peace and stability, not just for England but for human civilization, had to rest on a single, unified religious culture.

And yet it is also true that the two major subjects on which Digby brought alchemy to bear on Catholic doctrine, the resurrection of the dead and the Trinity, were not in dispute among the major Protestant confessions—the Lutheran Church and the Reformed Church of Calvin—and the Catholic Church. We cannot know for certain whether Digby recognized that fact, but he probably did. He devoted his life to defending the realm as a young man and defending the monarchy and the Catholic Church as a mature adult. While he surely smiled when critics of the Caroline church called it “papist,” he probably understood more than most that the Laudian reforms sought order and unity, not papal authority. In this light, Digby’s demonstration of the veracity of the resurrection of the dead and the Trinity may be seen as emphasizing two major points of agreement—points surely forgotten or dismissed in the midst of the polemic, invective, and bloodshed of civil war. What other reasonable rhetorical strategy could an embattled minority pursue?

Digby wrote in the dedication of the *Two Treatises* that he was giving his son a spiritual gift because he could give him nothing else (Digby’s wealth was deeply compromised during the war, and it took him years to recover his losses), but the fact is that he could not have given Kenelm a more precious gift. Yet this gift was clearly not for his son alone but for every reader.

The last few years of Digby's life were devoted largely to proving the thesis that natural philosophy and alchemy held universally redemptive powers. He had a laboratory in London and established a salon there that drew the prominent mathematicians, chemists, philosophers, and writers of the day. His passing in 1665 put an end to the salon, but discussions there had already inspired Robert Boyle to produce his mechanical explanation for the alchemical process, a work that Sir Isaac Newton read with great interest and that inspired his life's devotion to the secret art.<sup>96</sup>

Digby's alchemy brings us back to the death of his wife, Venetia. Although he eventually regained his composure and even fell in love again, he never remarried. His consolation ultimately seems to have lain in his intellectual and spiritual pursuits. Digby believed that the alchemical process confirmed God's gift of redemption and resurrection. Alchemy reassured him that his faith did not have to reside merely in hope or miracles. Divine agency could be replicated, and could remind individuals of God's continuing presence on earth.

ELIAS ASHMOLE:

THE COLLECTION AND CULMINATION OF ALCHEMICAL THOUGHT

In 1682 the natural philosopher and antiquary Elias Ashmole (1617–1692) carefully copied a letter in the blank interleaves of his own copy of the monumental collection of alchemical texts he had edited thirty years earlier, *Theatrum Chemicum Britannicum*. The letter that he copied had been neither received nor written by Ashmole. Instead, it was written by Andrew Pascal to Ashmole’s friend and colleague, the biographer and fellow antiquary John Aubrey, who had lent Ashmole the letter for him to copy (see figs. 3–4).

Pascal’s long letter, dated May 26, 1681, told Aubrey of his visit to the village of Combwich in Somerset, home of the legendary sixteenth-century English alchemist Thomas Charnock. Ashmole was very interested in what Pascal had discovered, and he scrawled in the margin of his text that Charnock claimed time and again that he was an “unlettered Scholar,” and true enough, Charnock’s competency in Latin probably was minimal. Pascal wrote of the wonderful “contrivance” he had found in Combwich that prevented an alchemical fire from burning out (a disaster that Charnock had experienced on New Year’s Day 1555), and of the organization of his workplace. When he found Charnock’s house, neighbors told him that people had been unwilling to live in the house because of Charnock’s reputation as a conjurer. Just as Pascal was mounting his horse and preparing to leave the tiny village, an elderly man emerged from the house next door, and Pascal recorded his conversation with the gentleman:

I asked him how long he had lived there, finding that it was the place of his birth, I enquired of him, if he had ever heard anything of that Mr. Charnock. He told me he had heard his Mother (who died about 12 or 14 years since and was 80 years of age at her decease) often speake of him. That he kept a fire in, divers years; that his daughter lived with him, that once he was

gon forth, and by her neglect (whome he trusted it with in his absensce) the fire went out, and so all his work was lost.<sup>1</sup>

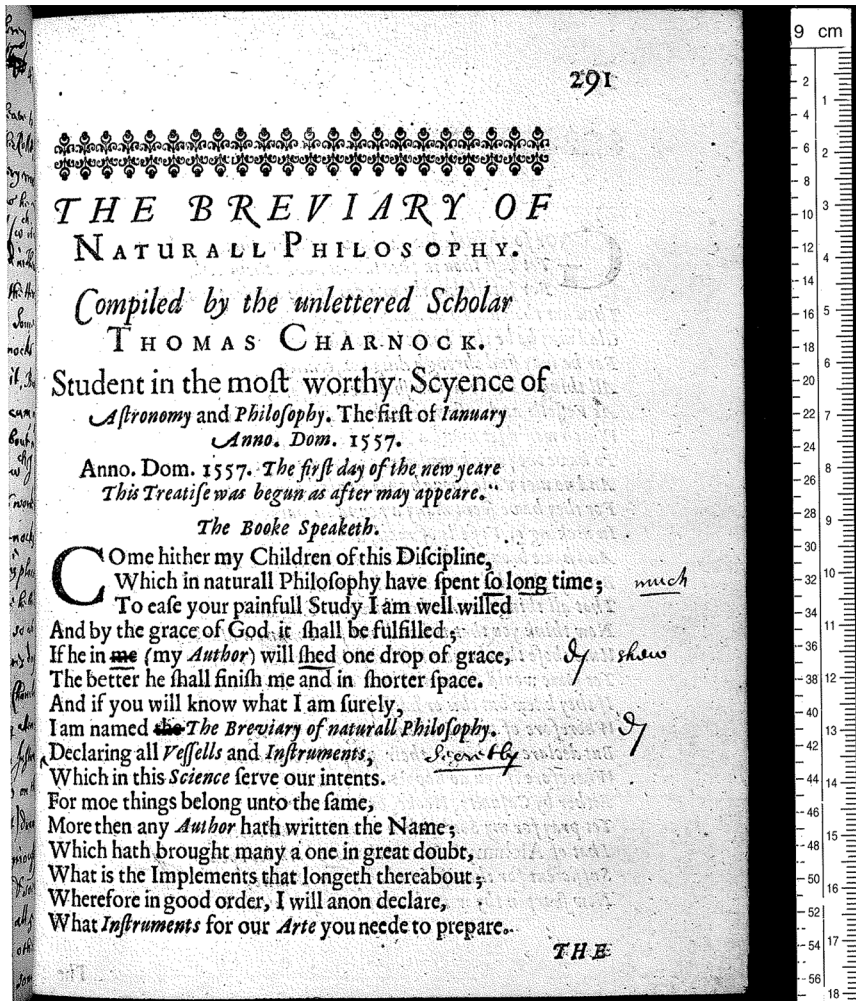
Obtaining Pascal's report on his trip to Comwich was undoubtedly a source of pride for Ashmole, but the significance of this report lies in part in the place where Ashmole chose to copy it: in his personally bound volume of the *Theatrum Chemicum Britannicum*. Upon its publication in 1652, he had directed his personal volume of the *Theatrum* to be fattened with blank interleaves. His personal copy of the published volume was thus not merely a new publication but a place, a repository for further research. He believed that his work was not completed with its publication but rather served as the foundation for his own further alchemical research. He perceived his printed text as a work in progress, a momentary statement of where his alchemical research stood at a particular point in time.

Pascal's letter illustrates the attractions and associations that alchemy held for Ashmole and others in the second half of the seventeenth century. Thirty years earlier, he had included Charnock's alchemical treatise, *The Breviary of Naturall Philosophy*, in his *Theatrum*, and yet word of this mysterious sixteenth-century alchemist's life still remained of interest to him and his fellow antiquaries. The letter between Aubrey and Pascal reveals their curiosity about the life of Thomas Charnock and the history of the alchemical tradition. In Ashmole's copying of the letter, and particularly in where he chose to copy it—in his personally bound copy of the *Theatrum*—we see him as publisher and editor, as a seventeenth-century scholar and alchemical disciple, and perhaps especially as collector and antiquary.

Of all his accomplishments, Ashmole is most remembered for his antiquarianism. He catalogued the Tradescant family's collection of "rarities," and his acquisition of the Tradescant collection (which seems to have been given to him in exchange for his cataloguing work) laid the foundation for what became the Ashmolean Museum.<sup>2</sup> His study of heraldry produced a magnificent antiquarian study of knighthood, *The Institution, Laws & Ceremonies of the most Noble Order of the Garter* (1672), one of his most well-known publications.

Ashmole's efforts to collect and publish alchemical manuscripts were part of a much larger interest in collecting and antiquarianism in the sixteenth and seventeenth centuries. Beginning in Italy but soon spreading throughout Europe and eventually to England, collecting such natural artifacts as fossils, skeletons, and shells, and such unusual instruments and artifacts as astrolabes and ancient coins, was a prominent avocation in Renaissance and baroque Europe and England.<sup>3</sup> Honor and prestige, the discovery of the New World, philosophical, scientific, and medical inquiry, aesthetics—these are only a few of the factors that begin to

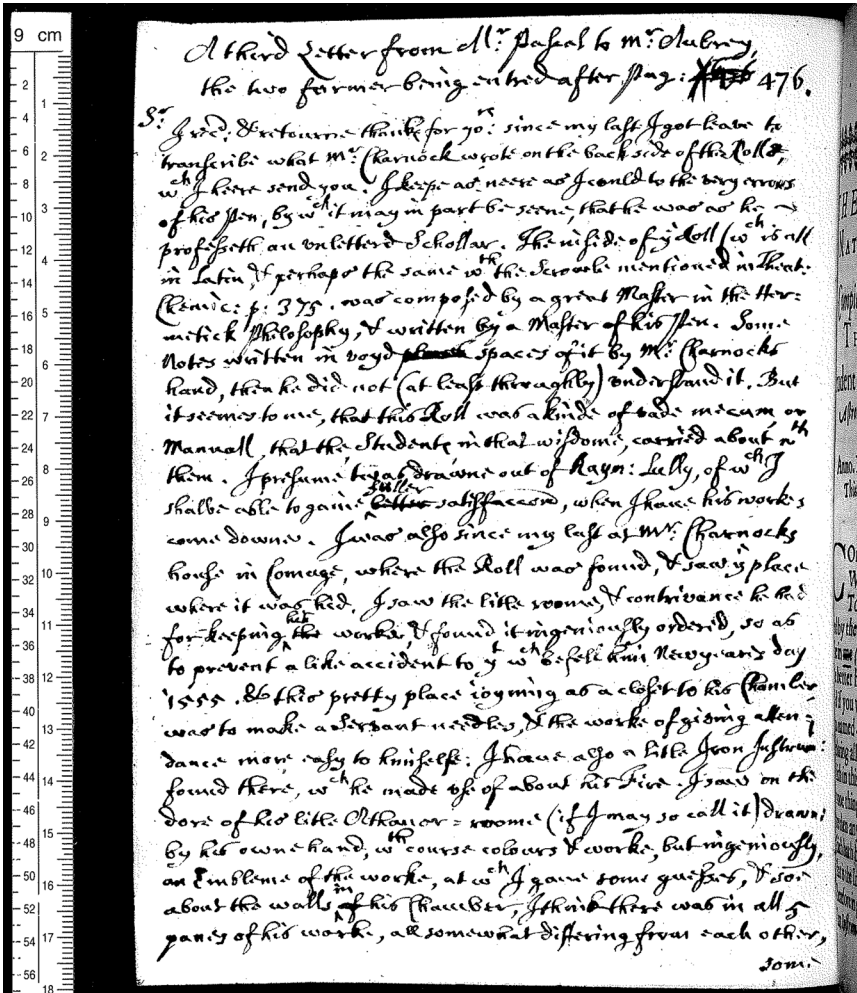




Figs. 3 and 4 A letter Ashmole copied in the blank interleaves of his personal copy of the *Theatrum Chemicum Britannicum* and his notes on the printed page. Ashmole MS 972, fol. 190v. By permission of the Bodleian Libraries, University of Oxford.

explain the appeal of collecting and creating *wunderkammers*, *kunstkammers*, or “curiosity cabinets” in the sixteenth and seventeenth centuries.<sup>4</sup>

Elias Ashmole is appropriately associated with the museum that bears his name. However, he was not only a collector of *naturalia* and *artificialia*. His collection of heraldic, astrological, and alchemical manuscripts is one of the largest manuscript collections in Oxford University’s Bodleian Library. This collection quite rightly belongs in a library rather than a museum, but this does not mean that he collected his manuscripts with fundamentally different considerations than when he acquired curiosities.



One purpose of this chapter is to contribute to the historical discussion of Renaissance and baroque collecting. Ashmole's alchemical, philosophical, and antiquarian activities cannot be separated from his interest in collecting without losing historical understanding of all aspects of his thought. Fortunately, these are not uncharted waters. R. J. W. Evans, Thomas DaCosta Kaufmann, Paula Findlen, and Pamela Smith have plotted courses that direct us to more accurate understandings of the purported magical and even alchemical significance of curiosity cabinets.<sup>5</sup>

Yet, just as crucially, another purpose of this chapter is to illustrate the sacred nature of Ashmole's collecting and publishing. He integrated his antiquarian,

historical, and religious sensibilities to produce volumes of alchemical texts that he hoped would achieve many of the same goals that Tymme, Fludd, Digby, and even Bacon shared. As much as any early seventeenth-century alchemist, perhaps even more so, Ashmole identified himself as priestly and his work as sacred. When Ashmole collected, and in particular published, alchemical texts, we cannot understand his antiquarian sensibilities without understanding his religious motivations. In his alchemical collecting we witness the culmination of alchemical thought in the first half of the seventeenth century and his understanding of its apocalyptic revelation.

Ashmole's collection of alchemical wisdom was not unique; in fact, it was very common at the time. Late Renaissance efforts to collect and identify origins of the natural world and even the universe itself have been identified in recent and sophisticated case studies of Jean Bodin, Tommaso Campanella, and John Dee.<sup>6</sup> Ashmole was engaged in an intellectual campaign that, while certainly emblazoned with his personal coat of arms, was nevertheless part of a formidable philosophical battalion.

Ashmole's collection differed, however, from the commonplace quality of Jean Bodin's *Theatrum* or the actual commonplace books of Sir William Drake.<sup>7</sup> His personal alchemical volumes were places for him to collect alchemical knowledge alone; however, the paradox of his alchemical collection lay in the fact that in collecting alchemical knowledge he believed he was inherently collecting *all* knowledge. For Ashmole, even as elusive, as intractable, as alchemical knowledge was, once it was collected and eventually conquered, it would provide the elegant explanation for virtually all the secrets of God's creation.

### Establishing the Collection

Ashmole's early years appeared to prepare him for a life of public service to the Crown. Born in 1617, the son of a saddler who enjoyed the rank and preferment of a gentleman, Ashmole left his home in Litchfield when he was sixteen to live under the care of James Pagit, Esq., puisne baron of the exchequer, who offered to raise the young man and pay for his education. He trained to be a lawyer in London, worked as a solicitor in the Court of Chancery in 1638, and was temporarily employed by the Lord Keeper, Sir John Finch. In 1641 he swore the oath as an attorney in the Court of Common Pleas and was admitted to Clement's Inn.<sup>8</sup> In May 1644 he managed to obtain an appointment as one of the three commissioners for collecting the excise tax in Staffordshire and in his hometown of Litchfield. It was during this time that he began his studies in Oxford, only this time, instead of law, he studied natural philosophy, mathematics, astronomy, astrology, and alchemy.

Ashmole's position and sensibilities led him to support what turned out to be the losing side in the English Civil Wars, but like his fellow Royalist and occultist Sir Kenelm Digby, he possessed the political acumen to survive the tumultuous aftermath of the Puritan victory. Some officials, Sir John Finch for one (and of course Digby), fled to the Continent, but Ashmole chose to remain in England. During the Civil War he may have seen active military service while at the Oxford garrison, but his official duty was his appointment as Royalist excise collector for his hometown of Litchfield and, later, Worcester. However, much of his time was spent continuing his studies at Oxford, which Michael Hunter describes during those violent years as a "beleaguered University."<sup>9</sup>

In 1646 Ashmole returned to London, where he befriended several astrologers, including England's most notable seer of the day, William Lilly (1602–1681).<sup>10</sup> He was soon forced to leave London, however, when a parliamentary decree forbade any former officers of the Royalist army to reside within twenty miles of London. This decree would have a lasting effect on Ashmole's interests in the traditional disciplines of natural philosophy, astrology, and alchemy. Unable to make his living in the city, he turned to his personal life in search of income. He cast an astrological nativity that he would marry a wealthy woman, and he made certain that his prediction came true. On November 16, 1649, he married Lady Mary Manwaring, a woman nearly twenty years his senior and considerably wealthier than he—her wealth and estate allowed him to pursue his alchemical and astrological studies full time. Also in 1649, shortly after the execution of Charles I, he began to work on his first alchemical publication, his translation of Arthur Dee's *Fasciculus Chemicus* (itself a translation of extant texts), which was published and bound with another alchemical text, by Jean d'Espagnet (1564–1637), *The Arcanum or Grand Secret of Hermetick Philosophy*.

By the late summer of 1650, Ashmole was beginning to acquire more alchemical texts. In August, September, and December 1650 we have records of Ashmole transcribing alchemical manuscripts.<sup>11</sup> The timing is significant; a few months earlier, on June 15, he recorded that he, his wife, and his dear friend Dr. Thomas Wharton visited John Tradescant at his home in South Lambeth.<sup>12</sup> This meeting was the first link in a chain of discussions that would eventually lead to the completion of the greatest curiosity cabinet in seventeenth-century England. The Ashmolean was still many years away—ground would not be broken until May 15, 1679—and the museum was not completed until 1683. By 1652, however, Ashmole and Wharton had completed a draft of the catalogue for the collection, a collection that Ashmole would eventually acquire (though not without difficulty) from the Tradescants.<sup>13</sup>

Once Ashmole had the income to pursue his antiquarian interests, he began to compile his magnificent medical, historical, and occult manuscript collection, as

well as coins and artifacts from the ancient world. His vast manuscript collection ranged from hundreds of astrological nativities that he and his colleagues cast, to treatises on heraldry and heraldic designs. He was fascinated with astrology and was a close friend of the most renowned astrologer of the day, William Lilly, but he never published a word on the subject.<sup>14</sup> As for another of his major interests, heraldry, his folio-sized volume on the Order of the Garter was based on extensive research, but, unlike his alchemical publications, it did not reproduce heraldic sources. He wrote relatively little on alchemy itself, but he translated, edited, and published more than thirty alchemical commentaries, recipes, and poems, some of which survived even in the seventeenth century only as fragments. These publications represent only a tiny fraction of the thousands of pages of alchemical manuscripts that he collected but chose not to publish. We will see that he made very deliberate decisions about the alchemical documentary sources he chose to bring into print.

Alchemical manuscripts had of course been in circulation for centuries, but their publication was essentially a seventeenth-century phenomenon. The second half of the century witnessed the high point of alchemical publication, and by 1678 virtually all the important alchemical treatises were available in print.<sup>15</sup> Ashmole was thus an important but certainly not a unique figure in his day.

Therefore, virtually all of Ashmole's avocations—heraldry, natural philosophy, astrology, and alchemy—should be seen as aspects of a broader, single, and perhaps even Baconian purpose: to collect, organize, and present knowledge in all its various forms to a large but still select audience. Like notable collectors such as Ulisse Aldrovandi, Conrad Gesner, and Athanasius Kircher, Ashmole could share his collection and his knowledge with a learned audience and yet still veil it from those unworthy of its secrets.<sup>16</sup> His collections differ from others only in that they were revealed on the printed page instead of displayed in a series of rooms and cabinets.<sup>17</sup> Just as access to curiosity cabinets was restricted by invitation from the collector, access to the alchemical texts displayed in Ashmole's collected volumes was restricted to those learned in the secret art. His effort to collect, translate, edit, and publish alchemical manuscripts was an activity that fulfilled the requirements of, and performed many of the same functions as, curiosity cabinets.

### Ashmole's Baconian Revelation of Knowledge

Although Elias Ashmole is the focus of this chapter, the story really begins with the work of a public official and natural philosopher whom we have already encountered, Sir Francis Bacon (1561–1626), who lived a full generation before Ashmole.

Bacon's "four principal works and monuments" were addressed in chapter 3, but they have relevance in our current discussion as well. First, all of Bacon's monuments—the library, garden, curiosity cabinet, and scientific and technological facility—were different forms of collections; that is, each monument brought together a single type of object in order to make each particular kind of knowledge more accessible. Thus, in a library, various books could be compared, in a garden, various flora, in a curiosity cabinet, rare objects. Bacon's house was a place where natural philosophers met, discussed, quarreled, and, most importantly, brought all of their skills and knowledge together, unifying their discoveries and understandings of the natural world. Collecting was the common denominator in all of Bacon's works and monuments.

Second, as we saw in chapter 3, there was magical and hermetic significance in Bacon's monuments. Bacon proposed to make Queen Elizabeth the new Trismegistus. Hermes Trismegistus (Hermes "thrice-great master") was of course the legendary ancient magus and reputed alchemist.<sup>18</sup> The spirit of Elizabeth's rule could not be questioned, but Bacon thought that it needed to be buttressed with knowledge that would be collected systematically and that extended beyond the recognized boundaries of natural philosophy and history. Therefore, by definition, this knowledge would be hidden, occult wisdom. The result of pairing Elizabeth's regal spirit with occult knowledge would establish her as the new Hermes Trismegistus, the new "thrice-great master."

Bacon was proposing to the court a new vision for the state, including a new vision for collections and knowledge. In his utopian treatise *New Atlantis*, the House of Solomon was his vision of these monuments. Clearly, he believed that it was time for the state to move forward in a new direction and to collect systematically all knowledge that could be of service to the state, allowing that there might yet remain mysterious or perhaps even undiscovered knowledge, almost certainly including alchemical knowledge. He envisioned a truly encyclopedic approach to learning and knowledge. This encyclopedia, however, would not be outdated as soon as it was shelved but rather, like Ashmole's note taking in his *Theatrum*, would constantly be updated and rewritten.<sup>19</sup>

In Ashmole's published alchemical collections, perhaps other cabinets of wonder were being opened and displayed. Just as Bacon's works and monuments held different kinds of collections, Ashmole's alchemical texts distilled several of Bacon's monuments: the library, the garden, and cabinets of wonder. At first glance this may seem unlikely. The first monument, the library, is clear enough: The edited volumes of alchemical texts might be seen as libraries of a sort. However, metaphors and appreciations of wondrous flora in gardens and texts were an essential aspect of Ashmole's alchemical vision, his revelation of lost or hidden knowledge about creation itself.

While we cannot be certain that Ashmole had Bacon specifically in mind as he prepared his alchemical volumes for publication, evidence suggests that this was precisely the case. Bacon wrote the *Gesta Grayorum*, in which he proposed his four “works and monuments,” in 1594, but it was not published until 1688. Ashmole apparently did not own any of Bacon’s published works, but he was quite taken with the fallen courtier. Copies of some of Bacon’s speeches, including a speech Bacon gave to James I, appear in Ashmole’s manuscript collection, as do Bacon’s petition to the House of Lords for forgiveness, his subsequent confession, and his submission. Ashmole also visited Bacon’s monument in St. Michael’s church at St. Albans and copied the inscription on May 1, 1657, a time when he was most deeply immersed in his alchemical studies.<sup>20</sup> Thus there is reason to suggest that Ashmole approached his alchemical studies with a knowledgeable sense of Baconian goals.

William Sherman has wonderfully shown that John Dee’s library was much more than a collection of books; it was “a more general place of knowledge, in which the books coexisted with laboratories, gardens, cabinets of curiosities.”<sup>21</sup> Ashmole’s published alchemical volumes were also more general places of knowledge, microcosms of the vision of a library that Dee surely held. Ashmole invited his readers to marvel at the mysterious texts he had found and brought to them. Let us join him and his seventeenth-century readers and stroll through his alchemical gardens, view his curiosities, and appreciate not only the strange wonder of his alchemical revelation but his effort to reveal divine knowledge hidden for centuries that he was revealing to his seventeenth-century readers.

### The Garden as a Natural, Occult, and Divine Collection

Ashmole’s interest in botany, gardens, collecting, and alchemy all took root at roughly the same time, and this may explain why he eventually drew relationships between the traditions of botany and alchemy. The chronology of the confluence of his interests sheds light on his analogy between alchemy and Baconian goals. In the spring of 1648 he repaired to Bradfield, where he leased fields (probably at a very attractive rent) from the woman he would marry a year later, Lady Mary Manwaring.<sup>22</sup> On June 6, 1648, he recorded in his diary, “Having entred upon the Study this day about 3 a clock was the first tyme I went a Simpling; Dr: Carter of Reding, & Mr: Watling an Apothecary there, accompanying me.”<sup>23</sup> To go “a Simpling” was to gather “simples,” or medicinal plants. That he was accompanied on this journey by medical men, a physician and an apothecary, suggests at least a semblance of purpose in their endeavor, a focus on finding, gathering, and studying flora that possessed healing qualities.

A month later, on July 8, Ashmole received a gift from Nicholas Bowden, a Reading surgeon and “oculist”: an alchemical manuscript. This was the first manuscript of a collection that would eventually span thousands of pages and fill dozens of folio volumes. The manuscript never made it into print in any of his alchemical publications, but its title, “The Supercelestial, Celestiall, and Terrestrial Divine Lighte of Nature,” suggests that it was an alchemical text that was very much in keeping with his integration of natural philosophy and divine inquiry.<sup>24</sup>

Although he did not mention Bowden’s manuscript, Anthony Wood recorded in 1648 that Ashmole “entred upon the study of plants, and in a few months became an eminent botanist.” Wood’s silence on Ashmole’s occult studies should not, perhaps, be taken too seriously. Wood first mentioned Ashmole’s alchemical interests when he noted that “in 1651 [Ashmole] began to learn seal-graving, casting in sand and goldsmith’s work. At which time he being very knowing in chymistry and accounted a great Rosy Crucian, Will. Backhouse of Swallowfield in Berks, esq; who had a fondness for, communicated to, him several secrets in that faculty, which ever after caused Ashmole to call him father.”<sup>25</sup> Therefore, as we begin to understand the relationship between Ashmole’s interest in botanical gardens and collecting alchemical manuscripts, it may be helpful to consider that both interests were born and developed at about the same time and place in his life.

The collections of flora in Renaissance and baroque gardens and the collections in curiosity cabinets shared more similarities than differences. John Dixon Hunt has noted that in the sixteenth century the distinction between a garden and a cabinet was not at all clear: The word “cabinet” carried with it the idea of a “‘a summerhouse or bower in a garden,’ and it continued to be so used at least until Miller’s *Gardener’s dictionary* of 1737.”<sup>26</sup> Furthermore, curiosity cabinets and gardens were both collections believed to hold magical, particularly paradisiacal, significance.<sup>27</sup> Celebrated collectors were often famed gardeners as well. The Tradescants, for example, were as renowned for their gardens as they were for their collection of curiosities.<sup>28</sup>

Another seventeenth-century virtuoso, John Evelyn (1620–1706), believed that not only curiosity cabinets but also gardens could recover the lost Edenic world.<sup>29</sup> Like Bacon, Digby, and Ashmole, Evelyn was a virtuoso, and, like Bacon and Ashmole, a staunch defender of the Church of England. He was born in Surrey in 1620, the son of Richard and Eleanor Evelyn, into a family whose fortune was initially founded on the introduction of gunpowder into England by his grandfather, George. Since then the family had diversified their wealth in land, providing Evelyn with the leisure and opportunity to indulge his many interests. Evelyn attended Baliol College at Oxford, studying the classics and religion, which he never forgot, even as he immersed himself in later years in the new philosophy of the seventeenth century. Although he spent a few years in England in the 1640s,



he avoided combat and instead became part of that large contingent of English exiles traveling in the Netherlands, France, Venice, and Switzerland, even studying and earning certificates of matriculation at the universities of Padua and Leiden. All the while he bought books, manuscripts, and curiosities.<sup>30</sup>

Evelyn was a great admirer of collectors, and he certainly did not draw distinctions between collections of curiosities and collections of manuscripts. He wrote glowingly of Sir Hans Sloane's "curiosities" from Jamaica, which consisted, he wrote in his diary, of "plants, fruits, corals, minerals, stones, earth, shells, animals, and insects, collected with greate judgment. . . . This collection, with his Journal and other philosophical and natural discourses and observations, indeede very copious and extraordinary, sufficient to furnish a history of that island, to which I encouraged him."<sup>31</sup> In Evelyn's estimation, manuscripts and printed volumes were indistinguishable from the other artifacts in Sloane's collection.

It was also in the 1640s that Evelyn's lifelong interest in gardens was born. Although he had always been interested in architecture, theology, and politics, his primary interests lay in gardens and landscape design. Even here, his many other interests intersected. In 1659 he proposed but did not follow through on an idea for a hortulan monastic establishment, a community surrounded by gardens, where he and a select group would "desire nothing more than to give a good example, preserve science, & cultivate themselves."<sup>32</sup> In 1660 he acquired John Parkinson's *Paradisi in sole paradisis terrestres*, which so inspired him that he attempted to create his own paradise by planting evergreens in his gardens to simulate eternal spring. In his unpublished manuscript *Elysium Britannicum*, a treatise to which he devoted more than twenty years of his life, he wrote of "Parterrs, Knots, Bordures & Compartiments which lye contiguous to the Mansion." These formal arrangements should gradually give way to more natural growths such as "Groves, Labyrinths, thickets." Therese O'Malley suggests that groves appear to have been what most approximated Eden for Evelyn. He believed they had a sacred and spiritual nature, and in the chapter titled "On the sacredness of Groves" he concluded, "Groves above all affect us most."<sup>33</sup>

In addition to his reputation as a gardener and landscape designer, Evelyn also recorded much of his life for posterity in his inestimable diary, including his visit to Sir Thomas Browne in Norfolk on October 17, 1671. Although the two gentlemen had never met before, they had corresponded for "some time," and Evelyn was quite impressed with Browne's Norfolk estate. He described Browne's "whole house and garden" as "a paradise and cabinet of rarities, and that of the best collection, especially medails, books, plants and natural things." Browne also took Evelyn on a tour of Norwich, and Evelyn admired the "ancient city," with its cathedral, churches, and, perhaps most impressive of all, the "cleanese of the

streetes." Evelyn found the grounds surrounding Marsfield Castle a fitting place to have built the ducal palace (the actual palace was "an old wretched building" that should have been demolished and moved, in Evelyn's view). The suburbs around Norwich were large, "with other amenities, not omitting the flower gardens in which all the inhabitants excel." For all of these developments, he explained, Norwich enjoyed a healthy trading economy. Yet all was not well. When Evelyn expressed his astonishment that the flintwork on Norwich's buildings was "so exquisitely headed and squared," Browne told him that they had lost the art of squaring the flints, "in which they so much excelled, and of which the churches, best houses, and walls, are built."<sup>34</sup> Even given skills now apparently lost, it seemed to Evelyn that Norwich had preserved the best of the past yet also looked toward the future; perhaps heaven had been created on earth after all.

Indeed, it was precisely Evelyn's juxtaposition of old and new, lost and found, recovered and preserved, that made his belief that paradise could be represented in a cabinet, or re-created in a garden, credible. A few years after visiting Browne, Evelyn wrote in his diary, "I went to see Paradise, a roome in Hatton Garden, furnished with the representation of all sorts of animals handsomely painted on boards or cloth, and so cut out and made to stand, move, fly, crawl, roare, and make their severall cries. The man who shewed it made us laugh heartily at his formal poetrie."<sup>35</sup> Evelyn probably laughed out of enjoyment rather than irony, and he probably congratulated this unknown gentleman for his witty representations of nature. However, as clever as this room might have seemed, in few places was the idea of paradise more brilliantly embodied than in the area of Evelyn's greatest expertise, the garden.

In his description of Hampton Court, Evelyn noted "a parterre which they call Paradise, in which is a pretty banquetting-house set over a cave or cellar."<sup>36</sup> An ornamental garden with leveled tiers and usually surrounded with a floral edge, a parterre might seem even today a microcosm of Eden. In Renaissance and baroque society, however, gardens were not simply aesthetic expressions of nature but complex representations of humanity's relationship with God and nature.<sup>37</sup>

Efforts to re-create the Garden of Eden, though, did not exist solely in elegantly designed and beautifully manicured gardens but appeared on the printed page as well. Volumes devoted to the botanical and often theological significance of gardens appeared in the early seventeenth century, both in England and on the Continent. G. B. Andreini's *L'Adamo sacra rapresetatione* appeared in 1617. I. David's *Paradisus sponsi et sponsae* was published in 1618. John Fletcher's *The Historie of the Perfect-Cursed-Blessed Man* followed in 1628. John Parkinson's *Theatrum Botanicum* (1640) became an important volume for apothecaries and physicians as well as botanists.<sup>38</sup>

Sir Thomas Browne considered himself an authority on the question of how to re-create paradise. In 1658 he published *The Garden of Cyrus, or The Quincunciall, Lozenge, or Net-work Plantations of the Ancients, Artificially Naturally, Mystically Considered*. Browne's lengthy title may challenge the modern reader, but it is historically significant. His text focused on a quincuncial, or five-pointed, garden design that formed "lozenge" shapes in the ground. Ostensibly a text on the great king of Persia Cyrus the Elder (529 BCE), who allegedly designed and even helped to plant the gardens of Babylon, Browne's volume is an important, if turgid, examination of gardens, paradise, paganism, and magic.<sup>39</sup>

Although Browne began by discussing the different ways in which the ancients designed gardens, he suggested that such designs had not only historical but also occult or magical significance. He examined the numerological implications of the number five and its ancient, cabalistic, and biblical associations.<sup>40</sup> Posing a series of rhetorical questions, Browne asked why the foundation of the Bible rested on five books, the Pentateuch, why Christ fed five thousand with five barley loaves, and why David took five pebbles from the stream when he faced the Philistine giant Goliath. The common denominator of five in these events was too significant to be explained as mere coincidence. However, instead of attempting to answer his questions, Browne simply said, "We leave it unto Arithmetically Divinity, and Theologically explanation."<sup>41</sup> To design a garden with historical, numerological, biblical, even cabalistic considerations in mind was to uproot the idea of a garden above and beyond its purely botanical purpose and create a new vision of the relationship between humanity and nature. Gardens, in Browne's mind, were more appropriately compared to Eden, with all the attendant meaning and significance.

Evelyn and Ashmole were friends who occasionally dined together, and Evelyn referred in his diary to Ashmole's catalogue of the Tradescant collection as well as to the collection itself, which he clearly admired.<sup>42</sup> As Ashmole brought his alchemical manuscript collection together, he also gathered works by Evelyn, Browne, and perhaps another source as well, Hugh Plat's *Floraes Paradise*. Although Plat (1552?–1608) obtained his BA from Cambridge and became a member of Lincoln's Inn in 1572, his interest in law, if there ever was any, quickly faded. The son of a prosperous landowner and brewer, Plat devoted much of his time to studying and writing on agriculture, mechanical works, and crafts. His 1594 treatise *The Jewel-house of Art and Nature* provided advice ranging from the very practical (how to keep "any fowl or other peece of flesh" for up to a month in any type of weather), the acrobatic ("How to walk safely upon a high scaffold with [sic] danger of falling"), and the deceptive ("How to write a letter secretly, that cannot easily be discerned or suspected").<sup>43</sup> Indeed, virtually the entire corpus of Plat's work was devoted to practical knowledge.

In 1608 Plat published his *Floraes Paradise, Beautified and adorned with sundry sortes of delicate fruites and flowers*. Plat's text was, on one level, an exemplary example of early modern craft books. The text provided directions on how to build a botanical garden, directing how to plant and prune, and even provided advice on how to care for the garden during winter ("In Winter time raise little hills about your Artichoks close to the leaves, because they are tender; and if any extreame frosts should happen, they might otherwise be in danger to perish").<sup>44</sup>

*Floraes Paradise* possessed a curious subtitle: *A Philosophicall Garden: with a touch at the vegetable worke in physicek, whose principall fire is the stomacke of the Ostrich*. In later editions, Charles Bellingham, an admirer of Plat's work, wrote a preface in which he referred to what was probably Plat's knowledge of alchemical secrets. He noted that Plat had written other volumes of natural philosophy, and in one of them, Bellingham cryptically remarked, "he subjoynd an excellent Abstract of Cornelius Agrippa *de Occulta Philosophia*, but they fell into ill hands and worse times."<sup>45</sup> In his own note to the reader, Plat wrote admiringly of della Porta's *Magia naturalis* and of how della Porta himself advised Plat "not to disperse or divulgate a secret of this nature, to the common and vulgar eye, or eare of the world."<sup>46</sup>

Still, Plat referred to the fifteenth-century English alchemist Sir George Ripley as "that renowned Alchymist, who suffred death (as the secrete report goeth) for making a Peare-tree to fructifie in Winter." He called the Paracelsian physician and alchemist Joseph Duchesne (1544–1609) "an excellent Theorist in Nature, and a great Writer in these dayes." He proceeded to explain that a philosophical garden required what he called "the Philosophers *aqua vitae*." His treatise on gardening was deeply indebted to the alchemical tradition. It opens with a description of how burying "the best vegetable ꝑ [lead]" with "*Aqua coelestis*" (heavenly water), which apparently could be substituted with "the ☿ [mercury] of hearbes," would produce lush and fertile ground. He wrote longingly and nostalgically of a natural world as lush and pristine as it was in its prelapsarian state. In the midst of his discussion of the philosophical garden, he provided a description of the kind of fire needed to produce "*aqua vitae*." It seemed to be a fire that burned slowly; it was neither a "naked fire" nor a fire with "the heate of fylings of Iron." It was not hot like the sun or a lamp, and indeed it was a fire so subtle and distinct that it distinguished "illiterate Alchymists . . . from a sound Philosopher."<sup>47</sup> This fire bore no resemblance to any fire that would be commonly recognized—and certainly not by the charlatan alchemists from whom Plat explicitly distanced himself. As interested as Plat was in seeds, proper planting, and rainfall, he seemed more concerned with how a legitimate philosopher made a fire in a context that spoke suggestively, albeit inchoately, of alchemy. *Floraes Paradise* became quite popular, and although Plat died in 1608, the year the book was published, by 1685 the book

was in its seventh edition. However, in 1653, as noted above, Charles Bellingham, an admirer of Plat's work, published it with a few minor additions under a new title, *The Garden of Eden*.

Although Ashmole probably did not own Plat's work, he probably knew of it, and he, too, appreciated the relationship between gardens and alchemy. In the opening lines of his first foray into editing and publishing alchemical texts, his translation of Arthur Dee's *Fasciculus Chemicus*, he wrote a lengthy "prolegomena," which began:

I Here present you with a Summary Collection of the choisest Flowers, growing in the Hermetick Gardens, sorted and bound up in one compleat and lovely Posie. A way whereby Painful Inquisitors avoid the usual discouragements met with in a tedious wandering through each long Walk, or winding Maze; which are the ordinary and guilful Circumstances where-with envious Philosophers have enlarged their Labors, purposely to puzzle or weary the most resolved undertakings.

These metaphors were not merely clever but revealed Ashmole's belief in the real potential of alchemy. One could enjoy a botanical garden, and through the paths these texts provided could be reassured of God's beautiful and perfect creation. One could do much the same by reading alchemical texts. Collecting alchemical manuscripts and eventually publishing a selection of them was simply another representation of God's creation. There was, however, an important functional difference between gardens and alchemical texts: Botanical gardens revealed the *result* of God's creation, while alchemical texts seemed to explain the *process* of creation itself. This knowledge was therefore a sacred knowledge and as such had to be revealed with great care and caution.<sup>48</sup> Ashmole and his alchemical brethren had to hope and believe that they worked under the safe and secure shelter and guidance of God's divine providence. In his note "To the Candid Reader" in *Fasciculus Chemicus*, Arthur Dee similarly warned the reader about the awesome implications of his alchemical work, adding, "This is that special and Spiritual Nature, to whom God gave a Power, above the violence of Fire; and therefore let us magnifie it, seeing that nothing is more Pretious."

As noted earlier, bound with Dee's collection was Jean d'Espagnet's *Arcanum or Grand Secret of Hermetick Philosophy*, which correlated the philosophers' stone and a garden so closely that the two were nearly indistinguishable. He described the growth of metals and their collection, design, and arrangement in a botanical garden. As C. S. Lewis did with his magical wardrobe, d'Espagnet beckoned his readers to enter his garden. Instead of lions and witches, however, we encounter

classical images: D'Espagnet's garden is guarded by a "Hesperian Dragon." Dragons were a common alchemical image, sometimes pictured in pairs and sometimes representing mercury or base matter.<sup>49</sup> A Hesperian dragon, however, referred specifically to a Greek tradition: Hesperus's garden grew golden apples that were guarded by his daughters and a watchful dragon—a kind of philosophers' stone of his own. "Hesperid" is also the Greek root of technical terms in botany and chemistry.<sup>50</sup>

D'Espagnet's garden departs from the tradition, however. His garden contains a spring that divides into seven branches from which the dragon drinks three times, "untill being drunk he put off his hideous garment: may the divine powers of light bringing Venus and horned Diana, be propitious unto thee." The water apparently inebriates the dragon, rendering him helpless before the goddesses of love and the hunt—two eminently appropriate goddesses for the devout adept. The numbers are tantalizing: The dragon drinks three times from a spring with seven branches. Both three and seven have Christian significance: Three is the number of the Trinity and the number of days between Jesus' death and resurrection. The universe was created in six days, a number divisible by three, and God rested on the seventh. By drinking three times from each branch of the spring, the dragon takes twenty-one drinks, a number divisible by both three and seven.<sup>51</sup> Was d'Espagnet integrating Christian numbers into the classical tradition he summoned?

D'Espagnet also referred to flowers that resonated with alchemical significance: violets, lilies, and the mythical flower amaranthus. Violets were often associated with medicine, lilies with beauty (and in particular with purity), while an amaranthus was a legendary flower believed to possess unfading beauty and eternal life. The healing qualities so often associated with the philosophers' stone, the eternal values it symbolized and its presumed beauty, were represented in this text by various flowers in a garden watered by a golden river. ("Not far from that fountaine at the entrance, fresh Violets do first salute thee, which being watered by streams from the great golden river.") We are even told how to tend this garden: "Thou shall not sever such flowers from their root, untill thou makest the Stone." However, once we have made the stone, our garden will flourish even more. ("If fates frown not, they will easily follow, and one flower being pluck't, the other golden one will not be wanting: let the Lilly and the Amaranthus, succeed with greater care and labour.")<sup>52</sup> Clearly, the act of collecting—in this case the collecting of flora to make botanical gardens—and alchemy shared common ground in seventeenth-century natural philosophy, and particularly in Ashmole's printed volume.

There was of course another place where gold was identified with a garden and a river, the book of Genesis:

And the Lord God planted a Garden in Eden; and there he put the man whom he had formed. And out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil. And a river went out of Eden to water the garden, and from thence it was parted, and became into four heads. The name of the first is Pison: that is it which compasseth the whole land of Havilah, where there is gold; And the gold of that land is good. . . . (Gen. 2:8–12)

Not that a garden was the only place where alchemical principles were mimicked or revealed in nature. D'Espagnet also drew relationships between philosophers' search for the alchemical secret in the sea and the mountains. Yet he did this not so much to say that the secrets could be plucked from the sea or mined from mountains but rather to make the point that natural philosophers must know and see nature. To achieve this understanding, the careful study and examination of texts was assumed, but one must also travel. He thought it was necessary "to see both [coasts of] the Indies," so that one "may bring the most precious gems and purest gold." Once this particular gold was obtained, "Philosophers" were directed to extract their philosophers' stone from seven stones, "the two chiefe whereof are of a divers nature and efficacy, the one infuseth invisible Sulphur, the other spirituall Mercury. . . . The former is found in the Easterne coast, the latter in the Westerne."<sup>53</sup> The pursuit of the philosophers' stone, therefore, would be a geographical as well as a theological, philosophical, and technical endeavor. D'Espagnet's words were written in 1623, in the wake of the age of exploration, and the expanded knowledge of the earth's geography was surely one of the driving forces behind the desire to collect objects from faraway lands.<sup>54</sup>

In this way alchemists began to resemble collectors of curiosities. Collectors of rare objects were not necessarily inclined to discard their previous understanding of the natural world, and indeed, as Paula Findlen argues, were often more interested in integrating new knowledge with old, not beginning anew.<sup>55</sup> In this sense, seventeenth-century alchemists greatly resembled their contemporary collectors. Instead of finding and returning with fossils or skeletons, they returned with "invisible Sulphur" or "spirituall Mercury."

There were additional reasons to establish a strong relationship between alchemy, collecting, and gardens. D'Espagnet, like many other alchemists and natural philosophers, clearly accepted the Aristotelian principle that nature was always moving toward perfection. If philosophy imitated nature, it would thereby become more perfect. However, this process would always be slow ("she therefore attaineth her end by little and little, not by leaps"), and therefore, according to D'Espagnet, philosophy, "which is the Ape of Nature, ought not to decline from

the way and example of Nature in its working and direction to finde out its happy stone, for whatsoever is without the bounds of Nature, is either an error or nearest one.”<sup>56</sup> Nature would therefore be best understood by imitating, and therein lay the appeal of alchemy. If, as it seems, gardens were a “practice of Philosophy,” then they truly must have been “Apes of Nature.” Alchemy, though, was a process, a search for what d’Espagnet blithely called the “happy stone.” If the creation was a divine, alchemical process, then understanding the alchemical tradition was necessary in the revelation of sacred knowledge.

### The Collection and Revelation of Paradise in Alchemical Literature

The titles of edited alchemical volumes—Ashmole’s as well as those of other natural philosophers—often used collecting metaphors such as the theater, the museum, or the library. The sixteenth-century jurist and natural philosopher Jean Bodin titled his last major publication *Universae naturae theatrum* (1596). Philander Colutius titled his volume *Theatrum naturae* (1611).<sup>57</sup> Theaters, museums, and libraries may have specific purposes, but all were considered suitable metaphors for garnering alchemical texts within leather-bound bindings. Between 1602 and 1626 four volumes of the *Theatrum Chemicum* were published in Strasbourg, and by 1661 this collection of alchemical documents had grown to six volumes. The *Musaeum hermeticum* originally included nine alchemical texts when it first appeared in print in 1625, but by 1678 this museum of hermetic thought contained twenty-one treatises. As late as 1702 the *Bibliotheca chemica curiosa* was issued by a Geneva press.<sup>58</sup> This last volume, however, was the final collection of alchemical literature to be published before the death of Newton in 1727. As large and inclusive as these collections were, they do not include the lexicons devoted to alchemy that appeared in the seventeenth century. Martin Ruland published his *Lexicon of Alchemy* in 1612, and William Johnson followed suit with his *Lexicon chymicum* (1652). Clearly the seventeenth century was a high-water mark for the publication of collected alchemical texts.

Ashmole contributed to the seventeenth-century effort to collect, edit, and publish alchemical literature. We have already seen his publication of Arthur Dee’s *Fasciculus Chemicus* in 1650. By 1652 he had collected, edited, and translated a series of medieval and early modern alchemical texts under the title *Theatrum Chemicum Britannicum*. His last alchemical publication appeared in 1658; this volume was not a collection but a transcription of a single manuscript, *A Way to Bliss*, which came from the hand of an anonymous sixteenth-century alchemist.

As mentioned above, Arthur Dee’s *Fasciculus Chemicus* was a synthesis of extant manuscripts allegedly from the hands of notable ancient and medieval



alchemists such as Peter Bonus and Raymond Lull. The result was a description of the alchemical process, beginning with a definition of “naturall matter” and concluding with the “multiplication of medicine” based upon the philosophers’ stone. Ashmole confronted the mystery of alchemy directly in the prolegomena of *Fasciculus Chemicus*. He acknowledged that “the dignity of this infallible Mystery lies open to many hard Censures, and profane Scandals,” and yet, he continued, “I shall endeavour to remove, and purge this pure and Heroick Science (almost generally contemptible) from the dross and corruption of an Imposture.” He proceeded to argue that many natural phenomena in nature appeared to be inexplicable, so why should alchemy be any different?

However, even Arthur Dee was convinced that alchemy would never recover its reputation. He wrote to Ashmole that he should not bother to translate his work because “the art ys vilified to much allready by scholars that dayly deride yt. In regard they are ignorant of the principles; how then can yt any way be advanced by the vulgar”?<sup>59</sup> Dee’s doubt that his work merited translation into English appeared to miss the point completely, for Ashmole’s hope was that by bringing alchemy to a wider audience, he would be able to counter its doubters more effectively.

Ashmole’s response to Dee illustrates how their perceptions of alchemy differed. Ashmole was unwilling to consign the alchemical tradition to the dust heap of oblivion. The challenging language of alchemical studies, and the fact that seventeenth-century readers were indeed “ignorant of the principles,” allowed him to place the work in public view and still retain its secrecy, except from truly knowledgeable adepts. Translating Dee’s treatise accomplished his goal of sharing with a large number of readers the majestic goal that he and his brethren were attempting to realize, but without telling his readers precisely how this goal would be sought.

The text of *Fasciculus Chemicus* never considers theological issues explicitly, and the only religious sentiment that Dee included was a rather commonplace prayer.<sup>60</sup> However, although the text was intended as an alchemical recipe book, its *goal* was certainly to re-create a new world through human effort and divine guidance. Dee wrote in the preface that “Nature and Art ought so lovingly to embrace each other, as that Art may not require what Nature denies, nor Nature deny what may be perfected by Art. For Nature assenting, she demeans her self obediently to every Artist, whilst by the industry she is helped, not hindred.” Through their mutual efforts, Art and Nature would create something wondrous and unprecedented.

Ashmole had originally planned to publish Dee’s work alone, but then, after he had completed the translation and his thirty-two page prolegomena, he came across d’Espagnet’s *Arcanum*. His decision to buttress these particular alchemical

texts gives us a glimpse into his collecting and publishing designs. After he had submitted the manuscript to his printer, he came across the *Arcanum*, “and perceiving it to suit so punctually with these Chymical Collections, for the solidity, likeness, and bravery of the Matter and Form, and to confirm some of those Directions, Cautions, and Admonitions I had laid down in the Prolegomena,” he quickly translated it as well and persuaded the printer to include it.

Whether Ashmole’s first collected volume was produced accidentally is not as important as his consideration and design of his completed project. Of course he had seen other alchemical manuscripts and printed texts—he was already in the process of amassing his alchemical manuscript collection. Before he read d’Espagnet’s *Arcanum*, however, he had not discovered one that correlated as neatly with Dee’s and his own alchemical philosophy. By saying that he perceived it to “suit so punctually with these Chymical Collections,” Ashmole acknowledged explicitly that he was not interested in publishing any alchemical text but only a certain kind of alchemical text. Ashmole was not merely making alchemical texts available in print; he was beginning to establish an alchemical philosophy and natural theology, and he expressed this purpose and intent in the prolegomena of *Fasciculus Chemicus*.

Early in the prolegomena he noted that natural philosophers obscured the results of their work purposely. They did so by presenting their ideas to an audience, much as a viewer of a collection might be allowed to view a collection of curiosities without understanding their significance. Only God could illuminate the significance of the wonders therein:

For many Philosophers closely shut up, or concealed divers things, which they left the ingenious Inquirer to sift into, or finde out; presuming to whom God intended the discovery of the Wonder, he would afford Eyes that should pierce through the mist of Words, and give them a ray of light which should lead them through this darkness: To finde out that Path which no Fowl knoweth, and which the Vultures eye hath not seen: For, if seriously perused, you shall finde their Books are much like Drawers, that lead to some choise and secret Box in a Cabinet [one opening the way to the rest], which if heedfully revolved, the satisfaction you miss of in one Author, will be met with in another, and all perhaps may at length discover such pregnant and sublime Secrets; as shall manifest thee to be one of those chosen vessels, ordained to be informed of this Knowledg, which sometimes God hath hid from the wise and prudent, but revealed unto Babes.<sup>61</sup>

Ashmole implicitly established a paradox in relation to alchemy and publishing that would guide him in his further publications: Although he published

alchemical texts, he believed they should be kept secret. This was a reasonable supposition because the texts were sufficiently veiled by their obscure and shadowy language that their significance would be revealed only to the initiated. D'Espagnet echoed this view in an introductory note to his *Arcanum*: "Besides, the chief Promoters of this Science have made it most remote from the knowledge of the vulgar sort by their Tropes and dark, and have placed it on high, as a Tower impregnable for Rocks and Situation, whereunto ther can be no accesse, unlesse God direct the way."<sup>62</sup> Therefore, both Ashmole and d'Espagnet agreed that no matter how ardent or diligent, a practitioner not blessed by God would be illegitimate and unworthy and would work in vain.

Further, Ashmole opened his discussion on alchemy with elaborate metaphors relating to collecting: Phrases such as "Philosophers closely shut up," "concealed divers things," "the ingenious Inquirer sift into, or finde out," "the discovery of the Wonder," "Books are much like Drawers, that lead to some choise and secret Box in a Cabinet," would resonate with seventeenth-century collectors or fortunate readers who had viewed collections of curiosities. These metaphors were neither casual expressions nor clever metaphors but deliberate devices that revealed the place and position that he believed alchemy deserved in natural philosophy.

Ashmole's prolegomena suggests that he was continuing a tradition of protecting and preserving this occult form of knowledge: "We are not a little beholding to the industry of our Ancestors, for collecting into Books this Elemented Water falling from Heaven, as into so many several Vessels or Cisterns; and there reserving it for our times and use; which else would have soaked away, and insensibly lost it self in the Earth of Oblivion."<sup>63</sup> Writing down and collecting ancient wisdom in books protected it from loss. For Ashmole, books were the natural repositories for collected wisdom and knowledge. Just as gardens and *kunstkammers* both displayed and protected the mysteries of flora and curiosities from all but the wise and knowledgeable, so printing presses published and preserved ancient and medieval occult wisdom for the benefit of the initiated.

Indeed, Ashmole's interest in recovering and preserving unusual objects and arcane knowledge had become a habit of his since his interest in collecting began in the early 1650s. In September 1652 he traveled to the Peak district in search of "Plants and other Curiosities." He carefully recorded, sometimes in cipher, unusual words or colloquialisms, rhymes, recipes, and the names of individuals and places he either saw or wanted to see.<sup>64</sup> He later helped pay for engravings and provided a flint instrument for illustration and description in the 1656 collection of his future father-in-law, William Dugdale, *The Antiquities of Warwickshire*, considered a landmark in archaeological studies.<sup>65</sup> Clearly, his collection and publication of alchemical knowledge was part of a much larger antiquarian effort to recover and display lost or unusual knowledge of the past.<sup>66</sup>

In addition to organizing his collected volume with deliberate care, he commended Arthur Dee for doing the same in *Fasciculus Chemicus*. He noted that Dee's synopsis was composed of texts that were collected very conscientiously. Ashmole wrote that he was "eternally obliged" to Dee "for so highly befriending us with these learned Collections, of the onely few and pertinent Things, from the rest of their large and unnecessary Discourses."<sup>67</sup> He presented himself as truly indebted and beholden to Dee, an indication that howsoever they may have disagreed on the value of his proposed project, they were brethren in a vast enterprise. Both Dee and Ashmole decided which texts revealed the "few and pertinent Things" and which were simply "unnecessary Discourses." Both acted as authors and collectors. Dee began by integrating a series of alchemical texts and presenting them as a single, coherent recipe, and Ashmole continued the work by introducing it and binding it together with another volume that correlated with their alchemical philosophy.<sup>68</sup> Ashmole appreciated Dee's work but went beyond Dee in espousing an alchemical philosophy and natural theology that was fundamentally rhetorical. His collection was intended to persuade the reader to view alchemy as a way of transforming the universe, not merely transmuting metals.

Given this objective, it is easy to see why d'Espagnet's text appealed to Ashmole. It introduced three major themes that remained important throughout his alchemical studies. First, alchemy provided hope for God's continued blessings and the resolution of England's political discord. Second, the philosophers' stone had medicinal qualities that would not only perfect metals but would also heal and restore individuals. Finally, the first alchemist, Hermes Trismegistus, may have been a heathen, but he was nevertheless glorified by God.<sup>69</sup> Although the *Arcanum* was explicitly alchemical, its opening lines surely resonated politically with Ashmole. In an almost prayerful invocation, d'Espagnet wrote, "Gods fear is the entrance into this Science. Its end is good will towards our Neighbour, the all-satisfying Crop is the rearing and endowing religious entertainment, with certainty; that whatsoever the Almighty freely bestoweth on us, we may submissively offer again to him."

Still, although this treatise was composed sometime in the sixteenth century, it spoke to the uncertain, difficult, and even perilous position of supporters of the fallen Stuart Crown in the 1650s, as we see in d'Espagnet's poignant comment: "As also Countreys grievously oppressed, may be relieved; prisoners miserably captivated, released; and souls almost starved, comforted."<sup>70</sup> The presence of danger loomed distantly but omnipresently in Interregnum England for those who had supported the fallen Stuart monarch. In Ashmole's eyes—and in the eyes of virtually all Royalists—Oliver Cromwell's execution of Charles I had severed God's divinely chosen monarch from England's political body. Although Ashmole benefited from the relaxed publication restrictions that typified Cromwell's reign, he

remained loyal to the Stuart line and waited patiently, like his fellow Cavaliers, in the hope that the monarchy would be restored. The regicide had profound religious as well as political implications, and he surely hoped that alchemical knowledge would ultimately heal the political wounds his nation had suffered. His wish was elegantly expressed by one of the anonymous authors of alchemical manuscripts that he collected: that alchemy would be “the perfect Medicine both of Man and Mettals.”<sup>71</sup>

Alleviating political strife was not the only concern of Ashmole and d’Espagnet. Time and again d’Espagnet reminded his readers of the healing properties of the philosophers’ stone: “The Science of producing Natures grand Secret, is a perfect knowledge of Nature universally and of Art . . . that from thence may result a catholick Medicine, most powerfull to perfect imperfect Metals, and for restoring sick and decaid Bodiees or what sort soever.” The healing properties of the philosophers’ stone stemmed from its divine origins. In the *Arcanum*, d’Espagnet compared the philosophers’ stone to the creation of both the universe and humanity: “The generation of the Stone is made after the patterne of the Creation of the World. . . . The Generation of the Philosophers Stone is not unlike the Creation of Adam, for the Mud was made of a terrestriall and ponderous Body dissolved by Water, which deserved the excellent name of *Terra Adamica*, wherein all the virtues and qualities of the Elements are placed.”<sup>72</sup>

Searching for “the Stone” was searching for an understanding of creation itself, and the philosophers’ stone thus seemed to acquire an almost divine quality: “By these two Instruments of Art and Nature,” wrote d’Espagnet, “the Stone lifteth it selfe up from Earth to Heaven with great ingenuity, and slideth from Heaven to Earth, because the Earth is its Nurse, and being carried in the wombe of the wind, it receiveth the force of the Superiours and Inferiours.”<sup>73</sup> The creation of the philosophers’ stone, based upon a process that imitated God’s creation, was the key to restoring nature to its prelapsarian state of grace. This process was distinct from the creation, however, because this time humanity joined hands with the divine. “Art and Nature,” humanity and God, were co-creators of the “philosophers’ stone.”

Ashmole wanted to preserve and trumpet the accomplishments of alchemists of the past while at the same time he deliberated over which manuscripts should be brought to the public’s knowledge. His interpretation was the foundation for the natural history and natural theology that he was establishing implicitly through the careful publication of his alchemical collection. In the opening lines of the prolegomena to his *Theatrum Chemicum Britannicum*, he told readers why knowledge of the philosophers’ stone remained elusive. Although many had sought the stone, few had found it. What’s more, he wrote, “Past Ages have like Rivers conveyed downe to us, (upon the floate,) the more light, and Sophisticall

pieces of Learning; but what were Profound and Misterious, the weight and solidity thereof, sunke to the Bottome; Whence every one who attempts to dive, cannot easily fetch them up.”<sup>74</sup> The alchemical secret eluded so many generations because only the insubstantial, “Sophisticall” pieces had floated to the surface. With probably as much hubris as accuracy, readers now held in their hands his collection of texts that had sunk from their substantive philosophical weight and had surfaced because he had dragged his fine, selective net. Historically and almost archeologically, Ashmole’s personal efforts, thanks to his divine election, had recovered for his society a new history of nature.

Ashmole recalled an author who noted that the dissolution of the monasteries had led to an indiscriminate destruction of books. He lamented that many manuscripts that had lain safely in monastic libraries for so many generations, “guilty of no other superstition then Red letters in the Front,” were burned. The mere presence of red letters or mathematical drawings, he wrote bitterly, was sufficient evidence of their “Popish or Diabolicall” nature. Thus “*a principall Key of Antiquity was lost to the great prejudice of Posterity*” (emphasis added).<sup>75</sup> Never just an alchemist but always an antiquary as well, Ashmole believed that he had harnessed both earthly and divine forces in his recovery of similar texts that had escaped the flames.

As noted earlier, his collection was intended to be the first of a two-part volume, but he never completed the proposed second volume. Although he edited and published a third collection, *The Way to Bliss*, Ashmole never surpassed the achievement of the *Theatrum* in his published alchemical studies. The *Theatrum* contained more than thirty alchemical treatises, poems, and commentaries, ranging from a few lengthy alchemical treatises to anonymous fragments. Chaucer’s *Chanon’s Yeoman’s Tale* and texts by John Dee and Edward Kelley were displayed in the collection. However, it was in the shorter treatises and fragments that the allure and wonder of the *kunstammer* appear. The table of contents lists such titles as *Hermes’s Bird*, *Dastin’s Dreame*, *Hunting of the Greene Lyon*, *Ænigmaes*, *Bloomefields Blossomes*, *Secreta*, *Secretorum*, and the *Hermit’s Tale*. These alchemical poems and pieces served as much to delight seventeenth-century readers as to reveal arcane alchemical principles. What Paula Findlen says about possessing objects applies as well to Ashmole’s collection: “Through the possession of objects, one physically acquired knowledge, and through their display, one symbolically acquired the honor and reputation that all men of learning cultivated.”<sup>76</sup>

Admittedly, because of the far greater number and variety of texts in the *Theatrum*, Ashmole’s editorial design is less evident than it was in his edition of the *Fasciculus Chemicus*—hardly a characteristic of which Bacon would have approved. Yet by the seventeenth century, juxtaposing objects that seemed to share little or nothing in common was precisely the purpose of a curiosity cabinet. Surprise and

amusement at an at least seemingly jumbled collection of rare or unusual objects was the goal of a collector—not confusion. Viewers and readers were expected to pause and consider why certain curiosities were placed together, and in so doing they were appreciating the knowledge of the natural world that was being acquired.<sup>77</sup>

Even after he had published the *Theatrum*, Ashmole continued to add curiosities to his collection. On a blank interleaf of his copy dated November 10, 1671, he sketched the sepulcher of Sir George Ripley. His drawing, however, was based not on his own observations but, as he noted in the margin, on a drawing from the Cotton Library.<sup>78</sup> Some of the images illustrate the inextricable link between the sun and the moon, or between gold and silver, a basic principle of alchemy. Ripley's coat of arms appears on the front of the sepulcher (see fig. 5).<sup>79</sup> Ashmole apparently copied the date on the sepulcher as it appeared in his source, but he wrote in the margin the correct date, 1490. He even cited the page number of the *Theatrum* ("p. 490") on which this date appears. That the tomb was decorated with images that had both alchemical and heraldic connotations, the year before he published his own monumental study of heraldry, *The Order of the Garter* (1672), must have delighted Ashmole.

Ashmole wrote that Samuel Norton made Thomas Norton his "Master" and George Ripley his son, presumably in the same way that Ashmole himself had been "adopted" by William Backhouse as his alchemical "son."<sup>80</sup> Ashmole described the side of Norton's sepulcher as depicted in "Hieroglyphicks," but he did not draw this tomb, providing instead a written description of its six panels (see fig. 6), which depict key moments in the life of Christ, namely, the ascension, the Last Supper, Jesus chasing the moneychangers out of the Temple, the woman of Samaria, the resurrection of Lazarus, and the journey to Jerusalem.<sup>81</sup>

Ashmole also copied a passage from the diary of Dr. Richard Napier (1607–1676), who recorded an incident in which Edward Kelley had apparently quarreled with a "couple of Jesuits" in Prague. The incident was as confusing to Ashmole as it is to us; a clearly irritated Ashmole noted, "I suppose this Relacion refers to Dr. Ed. Kelley by the 3 Capitall Letters S.E.K. at the end. Had the yeare been also set down, it might perhaps, have given better satisfaccon."<sup>82</sup> Clearly, Ashmole's printed volumes remained a lively place for him to record and keep recent discoveries, serving as an antiquarian notebook as much as a guide to alchemical illumination.

However, at the same time, the *Theatrum* contains the clearest and most explicit statement of Ashmole's alchemical philosophy and natural theology and reflects their fundamental coherence. Expressing his belief that adepts were an elect priesthood of natural philosophers, he wrote, "So, that what our Saviour said to his Disciples, may (I hope without offence) be spoken to the Elected Sons



Fig. 5 Ashmole's description and sketch of George Ripley's sepulcher in a blank interleaf of *Theatrum Chemicum Britannicum*. Ashmole MS 972, fol. 286r. By permission of the Bodleian Libraries, University of Oxford.

of Art; Unto you it is given to know the Mysteries of the Kingdome of God; but to others in Parables, that seeing they might not see, and hearing they might not understand.”<sup>83</sup>

We also learn in the *Theatrum* that there was not a single philosophers' stone but four different stones. Using Saint Dunstan's manuscript "De occulta philosophia," for example, he explained the powers of the "Minerall," "Vegetable" and "Magical" stones.<sup>84</sup> The "Minerall Stone" was the stone that most individuals associated with alchemy. "Gold . . . is a delicious Object," he acknowledged, but the acquisition of gold was never the goal of the ancients. To the contrary, wealth was "the lowest use the Adepti make of the Materia." Instead, he said that those who love wisdom will be rewarded with divine blessings: "And certainly He to whom the whole Course of Nature lyes open, rejoyceth . . . that he sees the Heavens



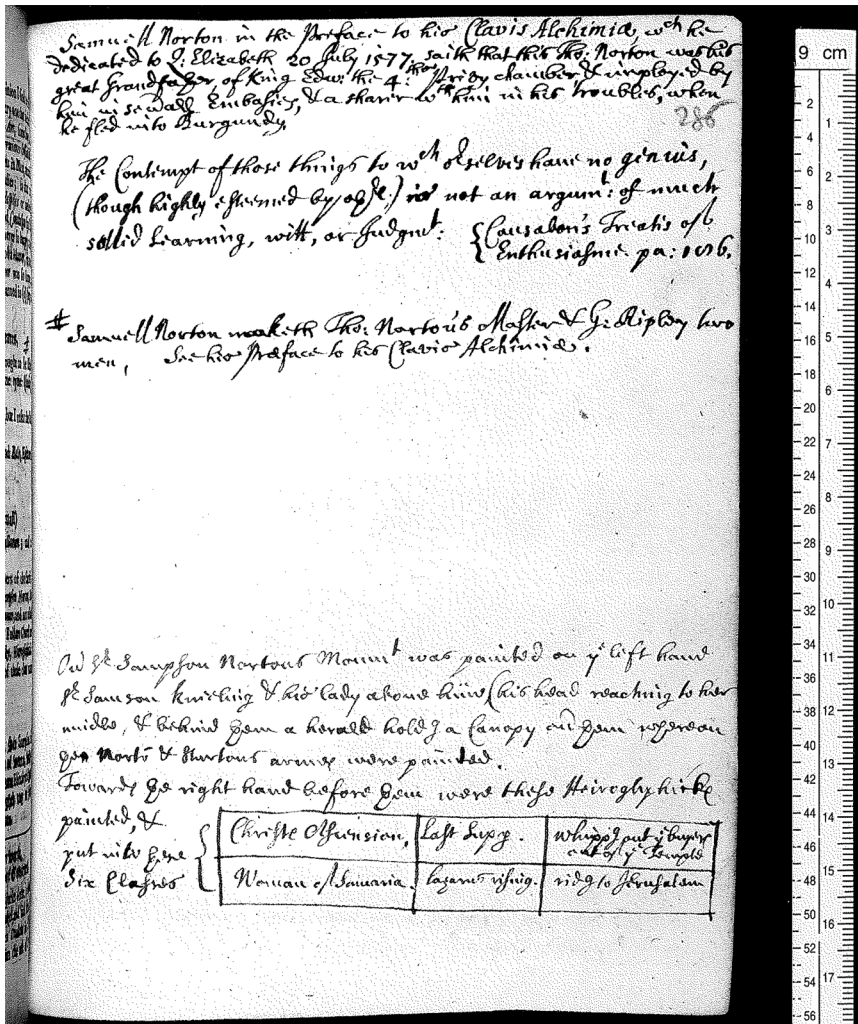


Fig. 6 Ashmole's description of Samuel Norton's sepulcher in a blank interleaf of *Theatrum Chemicum Britannicum*. Ashmole MS 972, fol. 300v. By permission of the Bodleian Libraries, University of Oxford.

open, the Angels of God Ascending and Descending, and that his own Name is fairly written in the Book of life." To achieve this wisdom, one searched for the "Vegetable, Magicall, and Angelicall Stones; the which have in them no part of the Minerall Stone." These three stones contained the secret wisdom of the natural world: "Doubtlesse Adam (with the Fathers before the Flood, and since) Abraham, Moses, and Solomon, wrought many Wonders by them."<sup>85</sup>

The "Vegetable" stone revealed virtually all the secrets of the natural world. Every human, animal, bird, fish, or plant could be understood through this stone.

The “Magical” stone at first seemed to be a kind of crystal ball, making it possible “to discover any Person in what part of the World soever.” However, we learn that this power has limits; this stone cannot find those hidden in “Chambers, Closets, or Cavernes of the Earth.” Ashmole then clarified that the “Magical or Prospective Stone” could discover not lost people but lost knowledge. This stone seemed to provide an individual with an almost cosmic knowledge, in which one could view the entire world, and even beyond this vista one could understand the language of animals, whether the chirping of birds or the lowing of cattle. This “Magical” stone made one “a true Oracle; And yet this as E.A. [presumably Ashmole himself] Assures you, is not any wayes Necromanticall, or Devilish; but easy, wonderous easy, Naturall and Honest.”<sup>86</sup> Such a blithe attitude sharply distinguishes Ashmole from his pious contemporary Robert Boyle, who thought very carefully about the moral distinction between alchemy and spiritual contact, whether angelic or diabolical.<sup>87</sup>

Yet, however impressive the powers of the “Magical” stone, they paled next to those of the “Angelical Stone,” which could not be seen, felt, or weighed “but Tasted only.” With this stone one could converse with angels through dreams or revelations and counter any evil spirit. Because it was composed of the “Quintessence,” presumably the fifth element, the “Angelical Stone” could not be corrupted and therefore warded off the devil. This stone not only allowed one to live without food for a time but also to live a longer life. The gift of prophecy was another power conveyed by this stone. However, only three individuals in history had ever possessed this stone: Hermes, Moses, and Solomon.<sup>88</sup>

In searching for all of these aspects of the philosophers’ stone, Ashmole clearly realized that obtaining the stone would provide a new understanding of nature itself. “In Briefe,” he wrote, “by the true and various use of the Philosophers Prima materia (for there are diversities of Gifts, but the same spirit) the perfection of Liberall Sciences are made known, the whole Wisdome of Nature may be grasped.”<sup>89</sup> His description was of the *prisca sapientia*, the first and purest form of human wisdom, which had existed before the Fall. This was the wisdom that would re-create a new beginning for humanity.

Ashmole’s last alchemical publication was, in one sense at least, his most modest. As we saw earlier, unlike the other volumes, it was not a collection of texts but an anonymous manuscript called *The Way to Bliss*. In the context of his previous published collections, however, this text made a final, culminating statement on what he believed was the efficacy of alchemy. Yet, in another sense, it can be seen as his most ambitious effort, because of all his publications, this treatise had the most explicitly utopian goals. The anonymous sixteenth-century author divided the work into three books. He defined “bliss” in the first book, and he described personal bliss in the second, discussing such matters as living longer, obtaining

wealth, and living a wise and virtuous life, while the third book explained how all of these were rewards one obtained from the philosophers' stone.

In his preface Ashmole explained that since the publication of the *Theatrum* in 1652 he had been beset by a lawsuit that had drained him financially. He had wanted to complete his planned two-volume project, he said, and had been urged to do so, largely because he and others wanted to continue to publicize the English alchemical tradition. The English were as "famous" for this philosophy, he claimed, "as any other Learning, and Masters of so transcendent a Secret."<sup>90</sup> Ashmole presented himself to the reader as antiquary, collector, and guide. He could not identify the author but he believed that the text had been written in the early sixteenth century, or no later than the late fifteenth. The text was appealing to Ashmole for public display, though, because it was not simply an alchemical treatise (indeed, while there is much anticipation for the secret, the author never provides an alchemical recipe) but instead was a philosophical statement of the vast potential of alchemy.

The Work seems to be written about the beginning of the last (or end of the former) Century; The main drift of the Author being from weighty and serious Arguments and Examples, to prove the Possibility of such a thing as the Philosophers Stone: whereby is largely manifested, that Nature has exhibited greater Wonders to the view of the World, and as great things have been (and consequently may be) performed by other weaker & lesser Means, where a due, friendly and Philosophical conjunction of Art and Nature is fully understood.<sup>91</sup>

Abraham Cowley (1618–1667) understood Ashmole's vision of how "Art" could redeem humanity, and in his poem "The Garden," he wrote,

[Art] over-rules, and is her Master here  
 It imitates her maker's Power Divine,  
 And changes her sometimes, and sometimes does  
     refine:  
 It does, like Grace, the Fallen Tree restore  
 To its blest state of Paradise before<sup>92</sup>

When Charles II returned to England in 1660, restoring the Stuart monarchy, Ashmole wrote an ode to the returning king that celebrated him with an appropriate astrological metaphor: *Sol in Ascendente, or The glorious Appearance of Charles the Second, upon the Horizon of London, in her Horoscopical Sign, Gemini.*

That same year he presented his three alchemical volumes to Charles II.<sup>93</sup> Charles was fond of chemical and alchemical studies, even returning to England with an alchemist, Nicaise Le Fèvre, in tow.<sup>94</sup> Ashmole had carried himself deftly enough to survive the 1640s and 1650s as a man who remained loyal to the monarchy, and Charles rewarded him with the office of Windsor Herald, an office that provided him with access to the documentation and sources he needed to produce his magnificent heraldic history, *The Institution, Laws & Ceremonies of the most Noble Order of the Garter* (1672). This volume was then and remains today one of his most well-known publications.<sup>95</sup> Like Digby's, his loyalty to the Stuart Crown was repaid.

On one level, such a volume may seem far removed from his esoteric alchemical studies, but Ashmole and his readers would have seen many similarities. Heraldry, like alchemy and natural magic, was deeply concerned with the hidden significance of symbols, the importance of hierarchy, and proper lineage.<sup>96</sup> Ashmole's collecting of alchemical manuscripts in the 1650s served him well when he was asked to trace and record the protocol of the Order of the Garter. He spent much of the next twelve years visiting church parishes to record inscriptions and coats of arms, meeting with nobles, and those who claimed to be noble, in taverns and the new coffeehouses, and collecting documentation of family lineages, eventually publishing his compendium in 1672. This volume represents untold effort and expense and is a testament to his industry and devotion to precision and accuracy.<sup>97</sup> His interest, though, in the occult and heraldry continued for the rest of his long life. He was still sketching coats of arms in his personal copy of the *Theatrum* long after the book had been published. The antiquarian talents that he demonstrated in his study of alchemy were fulfilled powerfully in his massive study of heraldry.

Beyond these antiquarian considerations, collections of alchemical texts help us to understand how seventeenth-century intellectuals believed knowledge was revealed to them. Fragments of the past, all of which possessed remnants of lost or hidden wisdom, were collected, published, and attended with vast and, for us, often dizzying associations. For Ashmole, these collected volumes served the ambitious goal of creating alchemical libraries, gardens, and curiosity cabinets. Although each volume had unique characteristics, together they presented a cohesive, if not always a coherent, goal. As R. J. W. Evans notes, "The collecting mania of the period was thus not idle curiosity, but an attempt to organize diverse objects in a way which would reflect their original disposition, *their place in the chain of creation*" (emphasis added).<sup>98</sup> In his collection of alchemical texts, Ashmole moved beyond the goal of placing objects of nature within "the chain of creation" and aspired to re-create nature in its original purity and perfection. Collectively these texts revealed his vision of paradise and how it could be re-created.

Most importantly, however, the world he attempted to restore would finally bring nature and humanity into harmony, as God originally intended. Just as the Bible was increasingly being understood as a series of texts by different authors that collectively directed an individual's moral conduct, so Ashmole saw his disparate alchemical manuscripts as a guide to revealing lost knowledge that would restore the harmony between nature and humanity they had enjoyed before the Fall. In the sixteenth and seventeenth centuries, one might study alchemical texts and natural philosophy for the same reason one studied the Bible: to understand God's revealed wisdom. By the mid-seventeenth century the so-called two books—the Book of God and the Book of Nature—may not have been seen as equal, but the distance between them was diminishing. Ashmole believed that collecting and studying texts that revealed the lost ancient wisdom of the natural world was to understand better the nature of the divine.

By the time Ashmole's last alchemical publication appeared in 1658, he was a renowned collector in his own right, having acquired not only the manuscript collection but also an impressive collection of coins and medals and a few prehistoric flint instruments. In the 1686 preamble to the regulations of the Ashmolean Museum, he stated clearly his rationale for collecting by arguing that it improved the quality of life, making it more convenient and healthier, and contributed to the wealth and prosperity of society.<sup>99</sup> Clearly, his editions of alchemical texts served precisely the same goals. These claims were certainly part of the promise of alchemy as well, but only part. We have seen that Ashmole had vaster ambitions in mind when he turned to alchemy.

In July 1677, nearly twenty years after his last alchemical publication, the community of natural philosophers in Oxford, with Ashmole's assistance, were preparing to enact Bacon's heuristic principles of scientific research by building a repository for his collection of curiosities.<sup>100</sup> When the Ashmolean Museum opened in 1683, it was housed in a building designed to hold a chemical laboratory, a lecture hall, two libraries (one devoted to chemistry, the other to natural philosophy), and of course a floor for the collection itself.<sup>101</sup> Ashmole's museum fulfilled all of Bacon's plans except the garden, but given that botanical gardens were by then appearing in many of the nearby Oxford colleges, perhaps he believed they would suffice. Whether or not the Ashmolean Museum possessed a garden in its collection, Ashmole surely succeeded in overseeing and completing the greatest cabinet of wonder in seventeenth-century England.<sup>102</sup>

In the context of Bacon's perception of knowledge, and given the numerous gardeners, herbarists, and antiquaries both in England and on the Continent, Ashmole's collecting and alchemical activities reflected his brethren's shared alchemical goals. For not only did his alchemical collections draw a relationship between collecting and occult thought, but they also revealed his belief that the

natural world could be restored and redeemed, that paradise was not lost forever but could still be recovered. His alchemical volumes, as well as many of the others that appeared in the seventeenth century, revealed the wisdom of the past with the express purpose of transforming the days ahead. Ashmole placed his alchemical texts in public view to reveal the knowledge of the past to those divinely ordained to understand it, but if this knowledge and wisdom were ignored, the consequences were perilous and the loss incalculable.

## EPILOGUE

In Shakespeare's *Henry V*, the duke of Burgundy, acting as intermediary between the English and French delegations following the English victory at Agincourt, makes an impassioned plea for peace:

. . . let it not disgrace me  
If I demand before this royal view,  
What rub or what impediment there is,  
Why that the naked, poor, and mangled Peace,  
Dear nurse of arts, plenties, and joyful births,  
Should not, in this best garden of the world,  
Our fertile France, put up her lovely visage. (5.2.31–37)

In his lengthy speech Burgundy contrasts the “best garden of the world” to the destruction this latest round of the Hundred Years’ War has wrought on the natural world. Livestock lie dead in heaps, vines are left unpruned and overgrown, while weeds, thistles, and burrs choke the beauty and fertility of France. However, the losses do not end there:

Even so our houses and ourselves and children  
Have lost, or do not learn for want of time,  
The sciences that should become our country,  
But grow like savages—as soldiers will  
That nothing do but meditate on blood—  
To swearing and stern looks, defus’d attire,  
And every thing that seems unnatural. (56–62)

What was natural was beauty, fertility, abundance, even learning—“the sciences,” knowledge—the loss of all this was “unnatural.”

Shakespeare was not alone in this sentiment. In April 1645, when the Civil War was dragging on with no resolution in sight, Parliament produced another of its seemingly endless ordinances and levied a tax of £300 on Essex County for its defense, with the addendum that the tax was to take effect immediately and remain in force “untill the first day of December next, if this unnaturall Warre shall so long continue.”<sup>1</sup>

The alchemists we have examined in this study shared Burgundy’s view that war is unnatural. All of the individuals we have studied lived through the religious and political tensions that eventually led to the Civil War, and two of them, Digby and Ashmole, lived through it and its aftermath. Yet all of them assumed that peace was natural and destruction unnatural, and it was in precisely this assumption that the irenicism of our alchemical brethren was rooted. Mark Kishlansky, a historian who has spent a great deal of time thinking about the political events of seventeenth-century England, observes succinctly, “In large part the English Revolution resulted from the inability of the consensual political system to accommodate principled dissension.”<sup>2</sup> Surely it was for this reason that the inclusive, accommodating alchemical tradition had such appeal in the late sixteenth and early seventeenth centuries. The individuals we have encountered chose not to be overwhelmed by the invective and polemic or, worse, to surrender to the basest instincts of violence and comeuppance. They believed that there were alternative solutions to mending the religious faults that fractured their society, and they devoted their lives to bringing about those solutions.

Tymme’s frustration lay in the departure of individuals from what was clearly God’s plan. Fludd’s passion and Digby’s consolation were based in their reassurance that the physical presence of God remained on the earth. Bacon’s ire arose from his belief that knowledge could be recovered if it was retrieved from God appropriately, reverently, and Ashmole’s confidence rested in his belief that the natural world could be redeemed, and that redemption could be found in the providential pursuit of the philosophers’ stone. All of these individuals witnessed at least some of the events and experienced a few of the forces that led to the Civil War. Only two, Digby and Ashmole, lived to see the Stuart Crown restored, and only Ashmole lived long enough to witness the Glorious Revolution. Yet all of these individuals believed that their society, their church, their kingdom had once been better than they were now, but rather than despair, they tried to recover the decency and, yes, the divinity they believed had been lost.

If all of this seems a bit naive, it may have even been seen so by their contemporaries. Although Ashmole lived through almost the entire seventeenth century, his sentiments and point of view may very well have been seen as old-fashioned by the time he died in 1692. Others younger than he studied alchemy and pursued the philosophers’ stone, but individuals such as George Starkey and Robert Boyle



studied it with a method and a rigor that was foreign, perhaps even uninteresting, to the venerable collector.<sup>3</sup> These alchemists had far less idealistic, far more pragmatic goals. Ashmole and his like might have already been seen as quaint by the end of the century.

No, the alchemists we have encountered were educated and matured in a different world than those who would later pursue the philosophers' stone even as members of the Royal Society. Their sensibilities had more in common with past generations of humanists than with contemporaries who were schooled in the new philosophy of Descartes and Hobbes. Even Bacon, the founder of methodological rigor, and Digby, the mechanical philosopher, were not as unusual as later generations, and perhaps even they themselves, believed. Bacon's natural philosophy was inextricably tied to his devotion to God, and Digby devoted considerable time to exploring how the mechanical philosophy helped him to understand that most ephemeral concept of all, the soul.

This study began by asking why individuals in the early seventeenth century believed in alchemy. Clearly, belief was an essential aspect of their lives, even when their beliefs may not have manifested themselves in tangible, measurable results. Conformists, dissenters, Puritans, Presbyterians, all were driven—and driven apart—by their beliefs, their faith, their confidence in what could not be proved but they believed was true. Jonathan Scott has shown how powerful the destructive forces of belief were, but there were other beliefs, beliefs that were unwilling to destroy, and although they did not prevail, they were there nonetheless. Belief in alchemy was one of them.

In *The World Turned Upside Down*, Christopher Hill suggested that practitioners of the occult arts were part of a larger effort in early seventeenth-century England to destabilize traditional power structures. Intuitively, such an argument seems reasonable. The constant, but in the end fruitless, effort to obtain a philosophers' stone that would heal their divided society may have appeared to contemporaries problematic or even, as Hill argues, "radical."<sup>4</sup> The evidence of the preceding chapters, however, suggests another conclusion. Far from opposing the Church of England, the individuals we encountered believed that alchemy could contribute to strengthening the state and could shore up traditional institutions that had been battered for decades. Despite their inchoate language, the claims they made that seem so wild to us, what is striking about them is how traditional they were. Four of the five—Tymme, Fludd, Bacon, and Ashmole—believed that the Church of England was broad enough to encompass believers such as themselves within its ken. Digby saw the Roman Catholic Church as even broader, and he thus embraced Catholicism and its greater chance, in his view, of breaking down the boundaries of earthly kingdoms in favor of a new and renewed Christendom.

Their consistent (perhaps incessant) talk of “unity” was not the polemic of dissenters or Puritans or Presbyterians, who used the word to mean their own idea of unity. When these alchemists spoke of unity they referred to some of the most encompassing doctrines and beliefs of the Christian Church: the Trinity, the resurrection of the dead, redemption. Far from being exclusionary, these alchemists mustered an inclusive vision of Christianity that had rarely been seen before and perhaps since. The breadth of their work, their learning, their inclusiveness is nothing short of astonishing in an era when the sharpest polemics imaginable were part and parcel of England’s print and manuscript culture, an era when the names of Civil War battlefields like Edgehill and Marston Moor rolled off proud survivors’ tongues, decades before the idea of toleration would become commonplace.

They wrote of their hopes and goals because, like Shakespeare’s Burgundy, these alchemists believed that the political and religious hatred and conflict of their day was “unnatural.” Perhaps alchemy could flourish only in an era of unrest, uncertainty, and civil war. What was natural, what was God’s providence, was a world that was fertile, prosperous, politically stable, and unified by religious worship.

What’s more, alchemical processes demonstrated that belief in the Trinity was not only a matter of faith; it was something that could indeed be replicated in the natural world by those divinely ordained to accomplish such work. There was never absolute agreement about how the alchemical transformations they sought might be accomplished, but there was complete agreement that they believed the alchemical tradition could demonstrate proof of core Christian doctrines.

Alchemy promised these goals, so rather than ask why they pursued the philosophers’ stone, given preconceived notions of knowledge and the divine that virtually all educated individuals held in the late sixteenth and early seventeenth centuries, perhaps the question is why should they not have pursued it? That their dreams, their hopes, were never fulfilled is something neither to admire nor to dismiss but rather more simply, and perhaps even more important than either, to remember.

It is for this reason that we do well to remember what, in his classic study, E. P. Thompson said about the English working class in the late eighteenth and early nineteenth centuries: “Their crafts and traditions may have been dying. Their hostility to the new industrialism may have been backward-looking. Their communitarian ideals may have been fantasies. Their insurrectionary conspiracies may have been foolhardy. But they lived through these times of acute social disturbance, and we did not. Their aspirations were valid in terms of their own experience; and, if they were casualties of history, they remain, condemned in their own lives, as casualties.”<sup>5</sup> The alchemists we have encountered in this study lived

through times of acute social, political, and religious disturbance, and we did not. Yet, however much they may resemble Thompson's working class, our alchemists never saw themselves as casualties, either of historical circumstance or of their own volition. Still, their work was indeed "valid in terms of their own experience." Their beliefs, their ideas, the correlations they made and the aspirations they held reflected the historical moment in which they lived. That alone makes their work worthy of our time and attention.

For what we have before us is a cadre of men who saw no reason why the Church of England could not accommodate a breadth of believers. Despite their individual differences, the religious doctrines they demonstrated through their alchemical studies were doctrines that formed the foundation of the theology of the Church of England. Even Digby's demonstration of the resurrection of the dead, no matter how much he would have liked to attribute it solely to the Catholic Church, remained a central tenet of both Catholic and Protestant confessions.

Perhaps the religious dissenters could not find accommodation within the many rooms of the Church of England, but somewhere within that vast edifice, some alchemists did. They may not have found the philosophers' stone, but they found and held on to something even more precious: hope.

## NOTES

### Introduction

1. For more on how Ashmole integrated his alchemical and antiquarian work, see my article “A Virtuoso’s History: Antiquarianism and the Transmission of Knowledge in the Alchemical Studies of Elias Ashmole,” *Journal of the History of Ideas* 69 (Summer 2008): 395–417.
2. Ashmole, “Annotations,” in *Theatrum Chemicum Britannicum* (London, 1652), 440.
3. Ashmole, *Elias Ashmole (1617–1692): His Autobiographical and Historical Notes, His Correspondence, and Other Contemporary Sources Relating to His Life and Work*, ed. and trans. C. H. Josten, 5 vols. (Oxford: Clarendon Press, 1966), 1:77.
4. Ashmole wrote his recollection in doggerel, titled “To my worthily honour’d William Backhouse Esq. Upon his adopting of me to be his Son.” Ashmole MSS 36–37, fols. 241v–242r, Bodleian Library, Oxford University. See also Ashmole, *Elias Ashmole*, 2:567–69.
5. Ashmole, *Elias Ashmole*, 1:77.
6. Ashmole, “Prolegomena,” in *Theatrum Chemicum Britannicum*, A2. Ashmole was certainly alluding to the moment in Luke when Jesus returns to Bethlehem and is rejected by the townspeople, prompting him to say, “Verily, I say unto you, no prophet is accepted in his own country.” Luke 4:24.
7. Ashmole, “Annotations,” 444.
8. Robert Bostocke, *The difference betwene the auncient Phisicke . . . and the latter Phisicke proceeding from Idolaters* (London: Robert Walley, 1585), unpaginated.
9. Peter Harrison, “Original Sin and the Problem of Knowledge in Early Modern Europe,” *Journal of the History of Ideas* 63 (April 2002): 255. See also 241, 249, and 254.
10. Charles Webster has been particularly sensitive to the utopian aspects of seventeenth-century reforms. See his *Great Instauration: Science, Medicine, and Reform, 1626–1660* (London: Duckworth, 1975), and his *From Paracelsus to Newton: Magic and the Making of Modern Science* (Cambridge: Cambridge University Press, 1982). See also the collected essays on the Hartlib group in Mark Greengrass, Michael Leslie, Timothy Raylor, eds., *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication* (Cambridge: Cambridge University Press, 1994); Lauren Kassell, “Reading for the Philosophers’ Stone,” in *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine (Cambridge: Cambridge University Press, 2000), 135; Pamela H. Smith, *The Body of the Artisans: Art and Experience in the Scientific Revolution* (Chicago: University of Chicago Press, 2004), 145.
11. Howard Louthan, *The Quest for Compromise: Peacemakers in Counter-Reformation Vienna* (Cambridge: Cambridge University Press, 1997); and Greengrass et al., *Samuel Hartlib and Universal Reformation*.
12. For more on this subject, see Howard Hotson, *Johann Heinrich Alsted, 1588–1638: Between Renaissance, Reformation, and Universal Reform* (Oxford: Clarendon Press, 2000).
13. William Poole has identified exactly the opposite process at work in seventeenth-century England, in the work of Francis Lodwick, for example, who reached some very unorthodox conclusions about creation using very orthodox methods. See Poole, “Francis Lodwick’s Creation: Theology and Natural Philosophy in the Early Royal Society,” *Journal of the History of Ideas* 66 (April 2005): 255–56.

14. See Christopher Hill, *The World Turned Upside Down: Radical Ideas During the English Revolution* (New York: Viking Press, 1973), 232–35. This is not to say that alchemists could not or did not assent to the goals of dissenting or radical communities. Keith Thomas has demonstrated that some alchemists were indeed affiliated with such groups. But it is also true that alchemists cannot be tied to any single religious or political worldview. See Thomas, *Religion and the Decline of Magic: Studies in Popular Beliefs in Sixteenth- and Seventeenth-Century England* (London: Weidenfeld and Nicolson, 1971), 270–71.

15. Lucien Febvre, *The Problem of Unbelief in the Sixteenth Century: The Religion of Rabelais*, trans. Beatrice Gottlieb (Cambridge: Harvard University Press, 1982), 131–51, 455–64.

16. See Jonathan Scott, *England's Troubles: Seventeenth-Century English Political Instability in European Context* (Cambridge: Cambridge University Press, 2000), especially chapter 2, “Taking Contemporary Belief Seriously,” 43–65. Much of this book is devoted to demonstrating the power of belief in the context of political tensions in seventeenth-century England.

17. Robert Darnton, *The Kiss of Lamourette: Reflections in Cultural History* (New York: W. W. Norton, 1990), 196.

18. See Davis's *Society and Culture in Early Modern France* (Stanford: Stanford University Press, 1975) and *The Return of Martin Guerre* (Cambridge: Harvard University Press, 1983); and Darnton's classic *The Great Cat Massacre and Other Episodes in French Cultural History* (New York: Basic Books, 1984).

19. See William R. Newman and Lawrence M. Principe, *Alchemy Tried in the Fire: Starkey, Boyle, and the Fate of Helmontian Chymistry* (Chicago: University of Chicago Press, 2002); and Tara Nummedal, *Alchemy and Authority in the Holy Roman Empire* (Chicago: University of Chicago Press, 2007).

20. See Mark Kishlansky, *A Monarchy Transformed: Britain, 1603–1714* (New York: Penguin Books, 1996), 31, 33, 75–76. See also J. T. Cliffe, *The Puritan Gentry: The Great Puritan Families of Early Stuart England* (Boston: Routledge and Kegan Paul, 1984), 104–24.

21. The term “Anglican” was not used in the seventeenth or even the eighteenth century and did not become a part of common nomenclature until the second half of the nineteenth, but it is used widely to describe congregants of the Church of England in the seventeenth century. See Julian Davies, *The Caroline Captivity of the Church: Charles I and the Remoulding of Anglicanism, 1625–1641* (Oxford: Oxford University Press, 1992), 5.

22. The scholarship on the origins and causes of the English Civil War is vast. Good starting points include Conrad Russell, ed., *The Origins of the English Civil War* (New York: Barnes and Noble, 1973); Conrad Russell, ed., *The Causes of the English Civil War* (Oxford: Oxford University Press, 1990); Ann Hughes, *The Causes of the English Civil War*, 2d ed. (New York: St. Martin's Press, 1998); and Norah Carlin, *The Causes of the English Civil War* (Malden, Mass.: Blackwell, 1999). No study of the question can be complete without consulting Christopher Hill's magisterial *Intellectual Origins of the English Revolution—Revisited* (Oxford: Oxford University Press, 1997).

23. For a compelling discussion of how and why Arminians repaired Anglican sanctuaries and followed the Anglican liturgy, see Kevin Sharpe, *The Personal Rule of Charles I* (New Haven: Yale University Press, 1992), esp. 328–48.

24. See Tyacke, *Anti-Calvinists: The Rise of English Arminianism, c. 1590–1640* (Oxford: Oxford University Press, 1987). The controversy surrounding this issue is discussed in chapter 4.

25. Charles Carlton, *Going to the Wars: The Experience of the British Civil Wars, 1638–1651* (New York: Routledge, 1992), 214.

26. *Ibid.*

27. See Conrad Russell, “Divine Rights in the Early Seventeenth Century,” in *Public Duty and Private Conscience in Seventeenth-Century England*, ed. John Morrill, Paul Slack, and Daniel Woolf (Oxford: Clarendon Press, 1993), 102–4.

28. Kishlansky, *Monarchy Transformed*, 34–35.

29. Russell, “Divine Rights in the Early Seventeenth Century,” 106.

30. This is an especially large literature, but recent studies that specifically address the power

of belief and skepticism and the social breadth of the witch hunts include Stuart Clark, *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe* (Oxford: Clarendon Press, 1997), 195–213, esp. 204–5; Malcolm Gaskill, *Witchfinders: A Seventeenth-Century English Tragedy* (Cambridge: Harvard University Press, 2005), 215–39, esp. 224; and Lyndal Roper, *Witch Craze: Terror and Fantasy in Baroque Germany* (New Haven: Yale University Press, 2004), 6, 9.

31. Brian P. Levack, *The Witch-Hunt in Early Modern Europe*, 3d ed. (New York: Pearson/Longman, 2006), 21–23.

32. In addition to Gaskill, see Robert Poole, ed., *The Lancashire Witches: Histories and Stories* (Manchester: Manchester University Press, 2002).

33. Scott, *England's Troubles*, 51. Scott's quotation is from Quentin Skinner, "A Reply to My Critics," in *Meaning and Context: Quentin Skinner and His Critics*, ed. James Tully (Princeton: Princeton University Press, 1988).

34. The resulting dislocations led social and political historians to construct what is now a classic argument that post-Reformation Europe—the period from about 1560 to 1660—was a period of "general crisis." T. K. Rabb believes that the French historian Paul Hazard, in his *La crise de la conscience européenne* (Paris, 1935), was the first modern historian to see this period as one of fundamental change. Since then the term "general crisis" has become a leitmotiv for the period, spawning an avalanche of articles and monographs on the theme, many of which remain essential reading for students of seventeenth-century European intellectual history. See especially Trevor Aston, ed., *Crisis in Europe, 1560–1660* (London: Routledge and Kegan Paul, 1965); T. K. Rabb, *The Struggle for Stability in Early Modern Europe* (Oxford: Oxford University Press, 1976); Geoffrey Parker and Lesley M. Smith, eds., *The General Crisis of the Seventeenth Century* (London: Routledge and Kegan Paul, 1978); Maurice Lee Jr., "Scotland and the 'General Crisis' of the Seventeenth Century," *Scottish Historical Review* 63 (1984): 136–54; and Maurice Lee Jr., "Scotland, the Union, and the Idea of a 'General Crisis,'" in *Scots and Britons: Scottish Political Thought and the Union of 1603*, ed. Roger A. Mason (Cambridge: Cambridge University Press, 1994), 41–57.

35. See especially Newman and Principe, *Alchemy Tried in the Fire*.

36. See, all by Allen G. Debus, *The English Paracelsians* (New York: Franklin Watts, 1966); *The Chemical Philosophy: Paracelsian Science and Medicine in the Sixteenth and Seventeenth Centuries*, 2 vols. (New York: Science History Publications, 1977); and *The French Paracelsians* (Cambridge: Cambridge University Press, 1991).

37. R. J. W. Evans, *Rudolf II and His World: A Study in Intellectual History* (Oxford: Clarendon Press, 1973), 196–274; Bruce T. Moran, *The Alchemical World of the German Court: Occult Philosophy and Chemical Medicine in the Circle of Moritz of Hessen (1572–1632)* (Stuttgart: Franz Steiner Verlag, 1991); Bruce T. Moran, *Andreas Libavius and the Transformation of Alchemy: Separating Chemical Cultures with Polemical Fire* (Sagamore Beach, Mass.: Science History Publications/USA, 2007); Pamela Smith, *The Business of Alchemy: Science and Culture in the Holy Roman Empire* (Princeton: Princeton University Press, 1994).

38. See, all by B. J. T. Dobbs, *The Foundations of Newton's Alchemy, or "The Hunting of the Greene Lyon"* (Cambridge: Cambridge University Press, 1975); *The Janus Faces of Genius: The Role of Alchemy in Newton's Thought* (Cambridge: Cambridge University Press, 1991); and *Alchemical Death and Resurrection: The Significance of Alchemy in the Age of Newton* (Washington, D.C.: Smithsonian Libraries, 1990).

39. See William R. Newman, *Gehennical Fire: The Lives of George Starkey, an American Alchemist in the Scientific Revolution* (Cambridge: Harvard University Press, 1994); William R. Newman, *Promethean Ambitions: Alchemy and the Quest to Perfect Nature* (Chicago: University of Chicago Press, 2004); and Lawrence M. Principe, *The Aspiring Adept: Robert Boyle and His Alchemical Quest* (Princeton: Princeton University Press, 1998).

40. See Lauren Kassell, *Medicine and Magic in Elizabethan London: Simon Forman, Astrologer, Alchemist, and Physician* (Oxford: Clarendon Press, 2005).

41. See Lyndy Abraham, *Marvell and Alchemy* (Brookfield, Vt.: Scolar Press, 1990); and Stanton J. Linden, *Darke Hieroglyphicks: Alchemy in English Literature from Chaucer to the Restoration* (Lexington: University Press of Kentucky, 1996).

42. See Robert M. Schuler, ed., *Alchemical Poetry, 1575–1700, from Previously Unpublished Manuscripts* (New York: Garland, 1995).

43. See Neil Kamil, *Fortress of the Soul: Violence, Metaphysics, and Material Life in the Huguenots' New World, 1517–1751* (Baltimore: Johns Hopkins University Press, 2005).

44. See Nummedal, *Alchemy and Authority*, 204n19.

45. Although not as specific as this study purports to be, Deborah Harkness explores the role of belief in John Dee's occultism in *John Dee's Conversations with Angels: Cabala, Alchemy, and the End of Nature* (Cambridge: Cambridge University Press, 1999).

46. See Newman and Principe, "Some Problems with the Historiography of Alchemy," in *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, ed. Anthony Grafton and William R. Newman (Cambridge: MIT Press, 2001), esp. 388–400.

47. I am not the first to recognize the limitations of Newman and Principe's critique. Hereward Tilton provides an extended critique of Newman and Principe's essay in *The Quest for the Phoenix: Spiritual Alchemy and Rosicrucianism in the Work of Count Michael Maier (1569–1622)* (Berlin: Walter de Gruyter, 2003), 1–34, 255–56, and passim. Brian Vickers also takes issue with Newman and Principe's approach. See Vickers, "The 'New Historiography' and the Limits of Alchemy," *Annals of Science* 65 (January 2008): 128–30, 135–36.

48. Newman and Principe, "Some Problems with the Historiography," 398.

49. Tom Webster, *Godly Clergy in Early Stuart England: The Caroline Puritan Movement, c. 1620–1643* (Cambridge: Cambridge University Press, 1997), 60–74, 122–48; Sharpe, *Personal Rule of Charles I*, 317–28. More generally, see Dewey D. Wallace Jr., *Puritans and Predestination: Grace in English Protestant Theology, 1525–1695* (Chapel Hill: University of North Carolina Press, 1982), 191–96.

50. Laurinda S. Dixon, *Alchemical Imagery in Bosch's Garden of Delights* (Ann Arbor: UMI Research Press, 1981), 7.

51. Robert M. Schuler, "Some Spiritual Alchemies of Seventeenth-Century England," *Journal of the History of Ideas* 41 (April–June 1980): 317–18.

52. Newman and Principe, "Some Problems with the Historiography," 399.

53. Sir Walter Raleigh, *The History of the World* (London: Printed for Walter Burre, 1614), 171.

54. For an analysis of the politics of an elusive, idealized past, see J. G. A. Pocock's classic *Ancient Constitution and the Feudal Law* (Cambridge: Cambridge University Press, 1957), reissued with "A Retrospect" in 1987. For a more recent study, see Janelle Greenberg, *The Radical Face of the Ancient Constitution: St. Edward's Laws in Early Modern Political Thought* (Cambridge: Cambridge University Press, 2001).

55. On this point, see especially Julian Martin, *Francis Bacon, the State, and the Reform of Natural Philosophy* (Cambridge: Cambridge University Press, 1992); Julian Martin, "Natural Philosophy and Its Public Concerns," in *Science, Culture, and Popular Belief in Renaissance Europe*, ed. Stephen Pumfrey, Paolo L. Rossi, and Maurice Slawinski (Manchester: Manchester University Press, 1991), 111; Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton University Press, 1985); and Margaret C. Jacob, *The Newtonians and the English Revolution, 1689–1720* (Ithaca: Cornell University Press, 1976).

## Chapter 1

1. Brownists were Nonconformist followers of Robert Browne (1550?–1633?), an early separatist from the Church of England considered one of the first exponents of church government. Deborah Harkness has explained that "Familism was a revealed theology that hoped to unite people of all faiths within a single, reformed religion. It also attempted to recall the prelapsarian relationship between humanity and divinity." Harkness, *John Dee's Conversations with Angels*, 154.

2. Thomas Tymme, *A Preparation against the prognosticated dangers of this yeare, 1588* (London: John Wolfe, 1588), A5, A4r.

3. Although the manuscript is undated, 1602 is a reasonable guess. See the discussion below on the dating of this manuscript.

4. This text is actually a translation of key sections—but not a complete translation—of Duchesne's *De priscorum philosophorum* (1603) and *Ad veritatem hermeticae medicinae* (1605). I am grateful to an anonymous reader for pointing this out.

5. As on so many issues, Allen G. Debus appreciated Tymme's natural philosophy and theology early on. See his *English Paracelsians*, esp. 87–89, 91–92, 96–97, and 178. For more on how alchemists integrated their Christian beliefs with the occult, two excellent case studies are John Warwick Montgomery, *Cross and Crucible: Johann Valentin Andreae (1586–1654), Phoenix of the Theologians*, 2 vols. (The Hague: Martinus Nijhoff, 1973); and Dobbs, *Janus Faces of Genius*.

6. This study revises my earlier view of this question, when I argued that Tymme's interest in alchemy was related to his prophecies. I have come to see that I overstated this relationship, and this study is intended to clarify the relationship between Tymme's religious concerns and his alchemical studies. See my "Thomas Tymme and Natural Philosophy: Prophecy, Alchemical Theology, and the Book of Nature," *Sixteenth-Century Journal* 30 (Winter 1999): 987–1008.

7. To appreciate the unique position that Tymme seems to hold in this respect, see Keith Thomas's discussion of providence in his *Religion and the Decline of Magic*, 78–112.

8. Harvey quoted in Patrick Collinson, *Archbishop Grindal, 1519–1583: The Struggle for a Reformed Church* (Berkeley and Los Angeles: University of California Press, 1979), 35.

9. *Ibid.*, 35–46.

10. James Martin Estes, *Christian Magistrate and the State Church: The Reforming Career of Johannes Brenz* (Toronto: University of Toronto Press, 1982), ix–x; Robert Rosin, *Reformers, the Preacher, and Skepticism: Luther, Brenz, Melancthon, and Ecclesiastes* (Mainz: Verlag Philipp von Zabern, 1997), 151–214.

11. Augustine Marlorat, *A Catholike And Ecclesiasticall exposition of the holy Gospell after S. Mathewe* (London: Thomas Marshe, 1570); *A Catholike and Ecclesiasticall exposition of the holy Gospell after S. John* (London: Thomas Marshe, 1575); *A Catholike and Ecclesiasticall Exposition of the Holy Gospell after S. Marke and Luke* (London: Thomas Marshe, 1583).

12. Robert M. Kingdon, *Geneva and the Coming of the Wars of Religion in France, 1555–1563* (Geneva: Librairie E. Droz, 1956), 10, 51, 127; R. J. Knecht, *The French Civil Wars* (New York: Longman, 2000), 83; and J. H. M. Salmon, *Society in Crisis: France in the Sixteenth Century* (New York: St. Martin's Press, 1975), 133.

13. Tymme erroneously attributed de Serres's text to Peter Ramus ("Petrus Ramus, the Author of these Commentaries," Aii). Walter J. Ong noted and corrected this mistake in *Ramus: Method and the Decay of Dialogue* (Cambridge: Harvard University Press, 1958), 388.

14. George Hennessy, *Novum repertorium ecclesiasticum parochiale londinense* (London: Swan Sonnenschein and Co., 1898), 302.

15. Abraham Smith, "The Second Letter to the Thessalonians," in *The New Interpreter's Bible: A Commentary in Twelve Volumes*, vol. 11, ed. Leander E. Keck et al. (Nashville: Abingdon Press, 2002), 755.

16. Thomas Tymme, *The figure of Antichriste, with the tokens of the end of the world* (London: Frances Coldocke, 1586), Bv.

17. *Ibid.*, B2v.

18. Tymme, *Preparation against the prognosticated danger*, B4v–6v.

19. Leland H. Carlson, *Martin Marprelate, Gentleman: Master Job Throkmorton Laid Open in His Colors* (San Marino, Calif.: Huntington Library, 1981), 8–9, 75–91.

20. *Ibid.*, 69.

21. As far as Thomas Nash is concerned, we can be quite sure that Tymme would not have been able to conspire with his printer to produce a treatise with a title and imprint such as Nash's *Almond for a Parrat*, in which we learn that it was "Imprinted at a Place, not farre from a Place, by the Assignes of Signior Some-body, and are to be sold at his shoppe in Trouble-knaves Street, at the signe of the Standish."

22. Carlson, *Martin Marprelate*, 69, 364.



23. T. T. was probably having fun revealing his identity when he launched into a recitation of Paul's pastoral letters to Timothy. While the margins cite "1, Tim. 6," "Math, 13," and "Exod. 35.30," the thrust of the passage is an invocation to "Tymothe." "And the Apostle after the same manner instructeth Tymothe, O Tymothe, keepe that which is committed unto thee: avoide prophane & vaine babblings, & oppositions of science, falsly so called, which while some professe, have ered concerning the faith. O Tymothe (sayeth hee) keepe that which is committed unto thee, &c. . . . Timothe doth beare the image and representation of the cleargie at this daie. In consideration of theeves and enemies, Tymothe hath matter of charge committed to his safe keeping . . ." (17).

24. T. T., *A Myrror for Martinists, and all other Schismaticques, which in these dangerous daies doe breake the godlie unities, and disturbe the Christian peace of the Church*. Published by T. T. (London: John Wolfe, 1590), A2v. Hereafter cited parenthetically in the text.

25. Thomas Tymme, *A plaine discoverie of ten English lepers* (London: Peter Short, 1592), C2r. Hereafter cited parenthetically in the text.

26. C. H. Josten believes that the manuscript was written in or shortly after 1602 because Tymme made specific references to the *Theatrum Chemicum* (1602). See his "A Translation of John Dee's 'Monas Hieroglyphica' (Antwerp, 1564), with an Introduction and Annotations," *Ambix* (June and October 1964): 84–221, esp. 97. A date of about 1602 appears to be correct for other reasons as well. Although Tymme demonstrates a significant degree of knowledge of natural philosophy in *A Light in Darkness*, it does not equal the depth of knowledge in his longest work, *A Dialogue philosophicall* (1612). Even though the 1602 manuscript is much longer than the brief 1605 preface that he wrote to his translation of Joseph Duchesne's *Practise of Chymicall, and Hermeticall Physicke*, Tymme raises issues in the 1605 preface that would be difficult to reconcile with a date earlier than 1602. Thus it is reasonable to suppose that *A Light in Darkness* was produced sometime around 1602, making it Tymme's earliest known alchemical text.

27. Tymme, *A Light in Darkness*, Ashmole MS 1459, fol. 472.

28. Harkness, *John Dee's Conversations with Angels*, 64.

29. Kathleen Crowther-Heyck, "Wonderful Secrets of Nature: Natural Knowledge and Religious Piety in Reformation Germany," *Isis* 94 (2003): 255–56. On this issue, see also Michael T. Walton, "Genesis and Chemistry in the Sixteenth Century," in *Reading the Book of Nature: The Other Side of the Scientific Revolution*, ed. Allen G. Debus and Michael T. Walton (Kirkville, Mo.: Sixteenth-Century Journal Publishers, 1998), 1–14; and Peter Barker, "The Role of Religion in the Lutheran Response to Copernicus," in *Rethinking the Scientific Revolution*, ed. Margaret J. Osler (Cambridge: Cambridge University Press, 2000), 59–88. This topic has been considered in depth, as is evident in the introduction to David C. Lindberg and Ronald L. Numbers, eds., *God and Nature: Historical Essays on the Encounter Between Christianity and Science* (Berkeley and Los Angeles: University of California Press, 1986); and John Headley Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991).

30. Urszula Szulakowska, *The Alchemy of Light: Geometry and Optics in Late Renaissance Alchemical Illustration* (Leiden: E. J. Brill, 2000), 61.

31. Tymme, *Light in Darkness*, Ashmole MS 1459, fol. 472. See also Harrison, "Original Sin and the Problem of Knowledge," 241, 254–55.

32. Tymme, *Light in Darkness*, Ashmole MS 1459, fol. 472.

33. *Ibid.*

34. Moshe Idel, *Kabbalah: New Perspectives* (New Haven: Yale University Press, 1988), 231.

35. Raphael Patai, *The Jewish Alchemists: A History and Source Book* (Princeton: Princeton University Press, 1994), 20, 242, 252.

36. Tymme, *Light in Darkness*, Ashmole MS 1459, fol. 473. Daniel was the only one in Belshazzar's court who could interpret the message that predicted the death of the king and his dynasty (Dan. 5:5–31).

37. *Ibid.* The discovery and misdating of the hermetic texts is told in the classic study by Frances A. Yates, *Giordano Bruno and the Hermetic Tradition* (London: Routledge and Kegan Paul, 1964).

38. Tymme, *Light in Darkness*, Ashmole MS 1459, fol. 474.
39. *Ibid.*, fols. 474–75.
40. Tymme may have been thinking of this passage from the *Hermetica*: “God is in all things, as their root and the source of their being. There is nothing that has not a source; but the source itself springs from nothing but itself, if it is the source of all else. God then is like the unit of number. For the unit, being the source of all numbers, and the root of them all, contains every number within itself, and is contained by none of them; it generates every number, and is generated by no other number. Now everything that is generated is incomplete, and divisible, and subject to increase and decrease; but that which is complete is subject to none of these things.” Walter Scott, ed. and trans., *Hermetica*, vol. 1 (Oxford: Clarendon Press, 1924), 155–57.
41. John Dee, *The Elements of Geometrie of the most auncient Philosopher Euclide of Megara. With a very fruitfull Preface made by M. J. Dee* (London, 1570). Both quotations appear on the same unnumbered page (the fourth page in the text).
42. Ashmole MS 1459, p. 480.
43. William B. Ashworth Jr., “Natural History and the Emblematic World View,” in *Reappraisals of the Scientific Revolution*, ed. David C. Lindberg and Robert S. Westman (Cambridge: Cambridge University Press, 1990), esp. 307–8.
44. Erik Iversen, *The Myth of Egypt and Its Hieroglyphs in European Tradition* (Copenhagen: GEC GAD Publishers, 1961), 64. Jan Assmann provides fascinating insights into the role of Egyptian culture in late seventeenth-century England and the Enlightenment in his *Moses the Egyptian: The Memory of Egypt in Western Civilization* (Cambridge: Harvard University Press, 1997), esp. 17–22, 55–90.
45. Rudolph Wittkower, *Selected Lectures of Rudolph Wittkower: The Impact of Non-European Civilizations on the Art of the West* (Cambridge: Cambridge University Press, 1989), 97.
46. Francis Quarles, *Emblemes* (London, 1635), A3r.
47. Ashmole MS 1459, p. 475. The quotations in the next four paragraphs are all taken from this page.
48. Stationers’ Company, *A Transcript of the Registers of the Company of Stationers of London, 1554–1640*, ed. Edward Arber, 5 vols. (London: privately printed, 1875–94), 3:272. Hereafter cited as *Stationers’ Register*.
49. In the margin, next to the lines “This Treason was as a Sea, wherein all other Treasons have lost themselves. No tongue is able to expresse, nor any hearte is sufficient to conceive the deapth of this intended Villainie,” is printed “The Gun-powder treason.” Tymme, *A Silver Watch-Bell* (London: By T. C. for William Cotton, 1608), 226.
50. Tymme’s epistle dedicatory, in Joseph Duchesne, *The Practise of Chymicall, and Hermetical Physicke* (London: Printed by Thomas Creede, 1605), unpaginated. Tymme is referring here to Col. 2:8: “Beware lest any man spoil you through philosophy and vain deceit, after the tradition of men, after the rudiments of the world, and not after Christ.”
51. W. B. Patterson, *King James VI and I and the Reunion of Christendom* (Cambridge: Cambridge University Press, 1997), 32–33.
52. *Stationers’ Register*, vol. 3, fol. 190b.
53. The figure of ninety-four includes multiple editions of single titles.
54. *Stationers’ Register*, vol. 2, fol. 398b.
55. *Ibid.*, vol. 3, fol. 251; Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: University of Chicago Press, 1998), 68–69.
56. Johns, *Nature of the Book*, 66.
57. *Ibid.*, 72.
58. Thomas Tymme, *A Dialogue philosophicall. Wherein natures secret closet is opened and the cause of all motion shewed* (London: Printed by T. S. for Clement Knight, 1612), A3r–v.
59. *Ibid.*, A3v. Emphasis added.
60. Calvin quoted in Margreta de Grazia, “The Secularization of Language in the Seventeenth Century,” *Journal of the History of Ideas* 41 (April–June 1980): 322.
61. Calvin, *Commentarie upon the first booke of Moses*, 62.

62. Even the name Theophrast is clearly a reference to Paracelsus's actual name. However, like everything else in Paracelsus's life, even his true name is confusing and controversial. Walter Pagel concedes this when he identifies him as "Philippus Aureolus Theophrastus Paracelsus," but one will also often see Philippus Aureolus Theophrastus von Hohenheim. Charles Webster's excellent study discusses this issue; Webster uses the simplest form, Theophrastus von Hohenheim (arguing that the lengthier version appears to be favored only by antiquarians and that "Paracelsus" was a Latinate of Hohenheim). See Walter Pagel, *Paracelsus: An Introduction to Philosophical Medicine in the Era of the Renaissance*, 2d ed. (New York: Karger, 1984), 5; and Charles Webster, *Paracelsus: Medicine, Magic, and Mission at the End of Time* (New Haven: Yale University Press, 2008), 15, 39–42.

63. Tymme, *Dialogue philosophicall*, B2v.

64. Jole Shackelford makes this point very clear: "We must constantly be reminded that Paracelsian medical philosophy was vested in Paracelsian religious thought, and that both supported a world-view embraced by physicians, poets, and lay religious leaders." Shackelford, *A Philosophical Path for Paracelsian Medicine: The Ideas, Intellectual Context, and Influence of Petrus Severinus, 1540–1602* (Copenhagen: Museum Tusulanum Press, 2004), 464.

65. Tymme, *Dialogue philosophicall*, 49. Hereafter cited parenthetically in the text.

66. Johns, *Nature of the Book*, 66.

67. Thomas Tymme, *The Chariot of Devotion* (London: Printed by G. Eld, for Thomas Baylie, 1618), A2v–A3r.

68. *Ibid.*, A3r.

69. *Ibid.*, A3v. The Euchites were a fourth-century sect that believed that perpetual prayer was the only path to salvation.

70. *Ibid.*, 70.

71. Johns, *Nature of the Book*, 138.

72. Tymme, *Chariot of Devotion*, 34–35. Hereafter cited parenthetically in the text.

73. Daynes quoted in Judith Maltby, *Prayer Book and People in Elizabethan and Early Stuart England* (Cambridge: Cambridge University Press, 1998), 44–45.

74. *Ibid.*, 40–41.

75. Tymme made this point in *Chariot of Devotion*, 39–40.

## Chapter 2

1. See Robert S. Westman, "Nature, Art, and Psyche: Jung, Pauli, and the Kepler-Fludd Polemic," and Judith V. Field, "Kepler's Rejection of Numerology," both in *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers (Cambridge: Cambridge University Press, 1984), 177–229 and 273–96, respectively. See esp. 284–90.

2. Oxford's Bodleian Library holds two extant versions of this brief tract. In Ashmole MS 766, Ashmole himself wrote on the title page, "Written by Doctor Robert Fludd, & with his owne hand." Ashmole MS 766, II, fol. 1. Ashmole MS 1507, art. 9, 183 sqq. is a scribal transcription. C. H. Josten believes that this version was completed at the end of the seventeenth century. I rely on MS 766, but for interested readers who cannot study the manuscript itself, see Josten's transcription of it in *Ambix* 3 (1949): 91–150. William Huffman has completed a selected transcription of the text in his *Robert Fludd, Essential Readings* (London: Aquarian Press, 1992), 146–70.

3. *Alchemy Tried in the Fire*, William Newman and Lawrence Principe's study of the practice of alchemy and its implications in the intellectual and scientific culture of seventeenth-century England, is essential reading for those interested in the history of science and particularly the history of chemistry.

4. For more on Fludd as a Neoplatonist, see William H. Huffman, *Robert Fludd and the End of the Renaissance* (New York: Routledge, 1988); for his membership in the College of Physicians, see Harold J. Cook, *The Decline of the Old Medical Regime in Stuart London* (Ithaca: Cornell University Press, 1986), 266. Lauren Kassell argues that "Fludd's careers as an established London

physician and internationally renowned author of theosophical books need to be understood as parts of the same project. His practices were consonant with his philosophy.” Kassell is surely correct that Fludd’s practices and philosophy cohered and that the “magnetical medicine” he used required that he manage both physical and cosmic forces with equal skill and commitment. See her “Magic, Alchemy, and the Medical Economy in Early Modern England: The Case of Robert Fludd’s Magnetical Medicine,” in *Medicine and the Market in England and Its Colonies, c. 1450–c. 1850*, ed. Mark S. Jenner and Patrick Wallis (New York: Palgrave Macmillan, 2007), 90, 94, 99, 102.

5. Robert Fludd, “Declaratio Brevis,” reproduced and translated in its entirety in Huffman, *Robert Fludd and the End of the Renaissance*, 210.

6. *Ibid.*, 214.

7. Allen G. Debus, “Renaissance Chemistry and the Work of Robert Fludd,” in *Alchemy and Chemistry in the Seventeenth Century: Papers Read by Allen G. Debus and Robert P. Multhauf* (Los Angeles: William Andrews Clark Memorial Library, 1966), 15–16.

8. Allen G. Debus, *Man and Nature in the Renaissance* (Cambridge: Cambridge University Press, 1978), 11–12.

9. Huffman, *Robert Fludd and the End of the Renaissance*; Joscelyn Godwin, *Robert Fludd: Hermetic Philosopher and Surveyor of Two Worlds* (Boulder, Colo.: Shambhala Press, 1979), 19.

10. See Peter Clark, “The Alehouse and the Alternative Society,” in *Puritans and Revolutionaries: Essays in Seventeenth-Century History Presented to Christopher Hill*, ed. Donald Pennington and Keith Thomas (Oxford: Clarendon Press, 1978), 47–48.

11. Many of Fludd’s publications were printed by Dutch presses. He almost certainly turned to that region because of the greater freedom from censorship that the Netherlands enjoyed. Keith L. Sprunger points out that “European countries of the seventeenth century had press laws to control the flow of printed books and systems of censorship to put teeth into the laws. The Netherlands also had such printing laws but in contrast to England and the surrounding counties, the Dutch had no thorough policy of censorship to regulate the overall process of printing and bookselling. Dutch officials selectively enforced the printing laws on the books.” Sprunger continues, “H. A. Enno van Gelder, in the spirit of liberal historiography, has summarized the Dutch situation: ‘The printing press in the era of the Republic was restricted and supervised in many ways by laws; in practice the printing press was almost completely free.’” See Keith L. Sprunger, *Trumpets from the Tower: English Puritan Printing in the Netherlands, 1600–1640* (Leiden: E. J. Brill, 1994), 37–38.

12. Patterson, *King James VI and I*, 10–11.

13. *Ibid.*, 291.

14. *Ibid.*, 345. See also Timothy H. Wadkins, “King James I Meets John Percy, S.J. (25 May 1622): An Unpublished Manuscript from the Religious Controversies Surrounding the Countess of Buckingham’s Conversion,” *Recusant History* 19 (1988): 146–54.

15. To bring James VI and I and his long reign into the discussion at this point may only dissatisfy specialists on the subject of James. With that cautionary note in mind, in addition to Patterson’s study, two excellent monographs on the reign of James I are Thomas Cogswell, *The Blessed Revolution: English Politics and the Coming of War, 1621–1624* (Cambridge: Cambridge University Press, 1989); and Maurice Lee Jr., *Great Britain’s Solomon: James VI and I in His Three Kingdoms* (Urbana: University of Illinois Press, 1990).

16. See David Harley, “Spiritual Physic, Providence, and English Medicine, 1560–1640,” in *Medicine and the Reformation*, ed. Andrew Cunningham and Ole Peter Grell (New York: Routledge, 1993), 101–17; Andrew Cunningham, “Sir Thomas Browne and Religio Medici: Reason, Nature and Religion,” in *Religio Medici: Medicine and Religion in Seventeenth-Century England*, ed. Ole Peter Grell and Andrew Cunningham (Brookfield, Vt.: Ashgate, 1996), 12–61; and Ole Peter Grell, “Plague, Prayer, and Physic: Helmontian Medicine in Restoration England,” in Grell and Cunningham, *Religio Medici*, 204–27. See also J. T. Young, *Faith, Medical Alchemy, and Natural Philosophy: Johann Moriaen, Reformed Intelligencer, and the Hartlib Circle* (Brookfield, Vt.: Ashgate, 1998); and Walton, “Genesis and Chemistry.”

17. Fludd's interest in Rosicrucianism is not considered in this study. Interested readers may consult Debus, *Man and Nature in the Renaissance*, 121–23; Debus, "The Scientific Revolution: A Chemist's Reappraisal," in *Science, Pseudo-Science, and Utopianism in Early Modern Thought*, ed. Stephen A. McKnight (Columbia: University of Missouri Press, 1992), 45–50; Hotson, *Johann Heinrich Alsted*, 104; Moran, *Alchemical World of the German Court*, 92–101; and, problematic but nevertheless fascinating, Frances A. Yates, *The Rosicrucian Enlightenment* (London: Routledge and Kegan Paul, 1972), 70–90.

18. Kassell, "Reading for the Philosophers' Stone," 133–35, quotation on 134–35. Kassell's study of Simon Forman depends exclusively on the manuscript tradition because, of the thousands of folios that make up his extant writings, he published only one treatise (on longitude). See Kassell, *Medicine and Magic in Elizabethan London*, 10–13.

19. Ashmole MS 766, fol. 2r, and MS 1507, art. 9, 183 sqq.

20. Yet another factor was oral tradition. William Poole has captured references to discussions of a manuscript by Francis Lodwick (1619–1694) that was discussed in coffeehouses. Surely many similar conversations took place in London taverns but are irrecoverable. See Poole, "Francis Lodwick's Creation," 249–50.

21. See Alexandra Walsham and Julia Crick, "Introduction: Script, Print, and History," in *The Uses of Script and Print, 1300–1700*, ed. Julia Crick and Alexandra Walsham (Cambridge: Cambridge University Press, 2004), 9. Carlson notes that in the hundred years or so that followed the invention of printing in 1455, "all printing did was import an additional complexity into an already complicated system." See David R. Carlson, *English Humanist Books: Writers and Patrons, Manuscript and Print, 1475–1525* (Toronto: University of Toronto Press, 1993), 4. Cf. Elizabeth Eisenstein, *The Printing Press as an Agent of Change*, 2 vols. (Cambridge: Cambridge University Press, 1979).

22. Arthur F. Marotti, *Manuscript, Print, and the English Renaissance Lyric* (Ithaca: Cornell University Press, 1995), 1, xii–xiii.

23. Harold Love, *Scribal Publication in Seventeenth-Century England* (Oxford: Clarendon Press, 1993), 3–34.

24. Anthony T. Grafton, "The Importance of Being Printed," *Journal of Interdisciplinary History* 11 (Autumn 1980): 273–75.

25. *Letters Between The Ld George Digby and Sr. Kenelm Digby Kt. Concerning Religion* (Sherburn, 1639), n.p.

26. For more on this speculation and on Scot generally, see the *Dictionary of National Biography*.

27. Patrick Scot, *A Table-Booke For Princes* (London, 1621), 152.

28. Peter Lake, "The Moderate and Irenic Case for Religious War: Joseph Hall's *Via Media* in Context," in *Political Culture and Cultural Politics in Early Modern England*, ed. Susan D. Amussen and Mark A. Kishlansky (Manchester: Manchester University Press, 1995), 55–56, 78.

29. Patrick Scot, *The Tillage of Light* (London, 1623), 11–12.

30. John Reynolds, *Perfet [sic] Directions for all English Gold now current in this Kingdome* (London, 1631), A3r; Reynolds, *Here Followeth A Brief and Easie way By Tables, To cast up Silver To the Standard of XI Ounces ii. Peny-weight. And Gold, To the Standard of XXII. Carracts* (London, 1679).

31. Scot, *Tillage of Light*, Bv–B2r. Hereafter cited parenthetically in the text.

32. After a lengthy discussion of darkness and light, Fludd wrote, "Concludimus igitur, lucem esse vel increatam, scilicet Deum omnia naturantem; (nam in ipso Deo Patre est vera lux, deinde in Filio eius illustrans splendor & uberans, & in Spiritu sancto ardens fulgor superans omnem intelligentiam) vel ab ea increata creatam, quae est vel cuisliber trium coelorum simplicissima quasianima, & vera forma essentialis, spiritum limpidissimum, tanquam eius retinaculum & vehiculum informans." Robert Fludd, *Utriusque Cosmi Maioris scilicet et Minoris Metaphysica, Physica, Atque Technica Historia in duo Volumina secundum Cosmi differentiam divisa* (Oppenheim, 1617), 28.

33. There is a large and particularly vibrant literature on this subject. An excellent

introductory study for general readers is Anthony Grafton, *New Worlds, Ancient Texts* (Cambridge: Harvard University Press, 1992).

34. Richard H. Popkin, “Skepticism,” in *The Encyclopedia of Philosophy*, vol. 7, ed. Paul Edwards (New York: Macmillan, 1972), 449–50. Popkin argues that dogmatism is the precise philosophical opposite of skepticism.

35. See Richard H. Popkin, *The History of Scepticism from Erasmus to Spinoza* (Berkeley and Los Angeles: University of California Press, 1979), xii–xv; and G. E. R. Lloyd, “Greek Cosmologies,” in *Ancient Cosmologies*, ed. Carmen Blacker and Michael Loewe (London: George Allen and Unwin, 1975), 208.

36. Richard H. Popkin, “Skepticism in Modern Thought,” in *Dictionary of the History of Ideas*, vol. 4, ed. Philip I. Weiner (New York: Charles Scribner’s Sons, 1973), 241–42.

37. Popkin, *History of Scepticism*, 66.

38. *Ibid.*, chapter 7, “Constructive or Mitigated Scepticism,” 129–50, esp. 129, 132, 150.

39. Peter Dear, *Mersenne and the Learning of the Schools* (Ithaca: Cornell University Press, 1984), 47.

40. Indeed, Richard Popkin argues that Descartes’s thought from 1628 onward should be seen as a systematic attempt to combat skepticism. Popkin, *History of Scepticism*, 172–92.

41. Arthur Quinn, “On Reading Newton Apocalyptically,” in *Millenarianism and Messianism in English Literature and Thought, 1650–1800: Clark Library Lectures, 1981–82*, ed. Richard H. Popkin (Leiden: E. J. Brill, 1988), 179.

42. Scot, *Tillage of Light*, 20–21.

43. Patrick Scot, *Omnibus & Singulis* (London, 1619), B5r–v.

44. Scot, *Tillage of Light*, 41. Scot made the same reference to God’s loving a credulous heart more than a curious head in *Omnibus & Singulis*, B5r.

45. Scot, *Tillage of Light*, 36.

46. *Ibid.*, 25, 33, 34.

47. Ashmole MS 766, fols. 5v–6r.

48. *Ibid.*, fol. 8v.

49. John Warwick Montgomery, *Cross and Crucible*, 1:17–18.

50. Khunrath quoted in *ibid.*, 17n74.

51. Luther quoted in Thomas Willard, “Alchemy and the Bible,” in *Centre and Labyrinth: Essays in Honour of Northrop Frye*, ed. Eleanor Cook et al. (Toronto: University of Toronto Press, 1983), 119.

52. Ashmole MS 766, fol. 10r–v. Hereafter cited parenthetically in the text.

53. Debus, *Man and Nature in the Renaissance*, 34.

54. It does not appear that Fludd was quoting scripture here but simply evoking a common theme in both the Old and New Testaments. He may have been thinking of Acts 13:37–39: “But he, whom God raised again, saw no corruption. Be it known unto you therefore, men and brethren, that through this man is preached unto you the forgiveness of sins: And by him all that believe are justified from all things, from which ye could not be justified by the law of Moses.”

55. Moran, *Alchemical World of the German Court*, 91, 92.

56. Cf. Godwin, *Robert Fludd*, 18.

57. See L. G. Kelly’s introduction to the modern reprinting of these texts (which first appeared in 1678) in Basil Valentine, *His Triumphant Chariot of Antimony, with Annotations of Theodore Kirkringius, M.D. with the True Book of the Learned Synesius a Greek Abbot taken out of the Emperour’s Library, concerning the Philosopher’s Stone*, ed. L. G. Kelly (New York: Garland, 1990), ix–x. Fludd referred the reader to Synesius’s seventeenth hymn, but Synesius wrote only ten hymns. C. H. Josten believes that Fludd may have been citing hymn no. 3. If so, Fludd was referring to the spirit, not the letter, of that hymn. See Synesius of Cyrene, *The Essays and Hymns of Synesius of Cyrene*, vol. 2, trans. Augustine Fitzgerald (London: Oxford University Press, 1930), 377. Fludd’s use of Synesius is interesting for other reasons as well. In addition to being a Christian Platonist, Synesius was also reputed to be an alchemist, but Jack Lindsey, calling attention to two different writing styles, has suggested that two fourth-century alchemists may have written

under the same name. *His Triumphant Chariot of Antimony* is probably by neither of them. There is no trace of this text in the extant work of Synesius. See Lindsey, *The Origins of Alchemy in Graeco-Roman Egypt* (London: Mueller, 1970), 360; and J. Ferguson, *Bibliotheca Chemica*, 1:420. We may never know whether Synesius actually was an alchemist, but the name was often associated with occultism and natural philosophy in the seventeenth century. In 1663 the Genoese Jesuit Gian Battista Noceto included Synesius with Avicenna, Sisto da Hemminga, Ambrose, Philo, Gregory of Nyssa, and Cardinal Gaetano in his tirade against astrology. Synesius's work on dreams—included in works known to be by him—was discussed in learned circles in both Italy and Germany. See Lynn Thorndike, *A History of Magic and Experimental Science*, 8 vols. (New York: Columbia University Press, 1923–58), 8:321.

58. See Szulakowska, *Alchemy of Light*, chapter 12, “Robert Fludd: The Divine Alchemy of the Eye of God,” 167–82.

59. Fludd cited Psalm 139:7 in the margin of the text. “Whither shall I goe from thy spirit? or whither shall I flie from thy presence?” He also cited the first chapter of the book of Wisdom and was probably thinking of verse 7 in particular: “For the spirit of the Lord filleth the World: and that which containeth all things hath knowledge of the voice.”

60. For the seventeenth-century alchemist Eirenaeus Philalethes, illumination was a process of activation. See Dobbs, *Janus Faces of Genius*, 39. Dobbs refers to Philolethes as “anonymous,” as indeed he was, but William Newman has since argued convincingly that Eirenaeus Philalethes was George Starkey (1628–1665). See Newman, *Gehennical Fire*, 2, 12, 115–69.

61. Dobbs, *Janus Faces of Genius*, 26.

62. *Ibid.*, 38–39; Dobbs, *Foundations of Newton's Alchemy*, 186–87; Principe, *Aspiring Adept*, 174–75.

63. When Moses saw the burning bush, he “hid his face; for he was afraid to look upon God” (Exod. 3:6). When Moses received the Ten Commandments, God appeared as a voice and later as “a thick cloud” (Exod. 19:3, 9).

64. Moshe Idel, “The Magical and Neoplatonic Interpretations of the Kabbalah in the Renaissance,” in *Jewish Thought in the Sixteenth Century*, ed. Bernard Dov Cooperman (Cambridge: Harvard University Press, 1983), 186.

65. Allison P. Coudert, *The Impact of the Kabbalah in the Seventeenth Century: The Life and Thought of Francis Mercury van Helmont (1614–1698)* (Leiden: E. J. Brill, 1999), 111.

66. Halfan quoted in Idel, “Magical and Neoplatonic Interpretations,” 186–87. Coudert places these kinds of enthusiastic references within a more accurate, albeit dismaying, historical context: “embattled Christian Hebraists who were left jumped on the bandwagon of antisemitism to prove that they were good Christians because they hated Jews like everyone else.” *Impact of the Kabbalah*, 104–5. By the seventeenth century, these concerns may have been allayed slightly, but there was always an uneasiness about studying a Jewish tradition within the Christian community.

67. Joseph Blau, *The Christian Interpretation of the Cabala in the Renaissance* (New York: Columbia University Press, 1944), 6–7.

68. *Ibid.*, 13.

69. Karen Silvia de Leon-Jones, *Giordano Bruno and the Kabbalah* (New Haven: Yale University Press, 1997), 7.

70. Nicholas Popper, “‘Abraham, Planter of Mathematics’: Histories of Mathematics and Astrology in Early Modern Europe,” *Journal of the History of Ideas* 67 (January 2006): 93.

71. De Leon-Jones, *Giordano Bruno and the Kabbalah*, 7.

72. Charles G. Nauert Jr., *Agrippa and the Crisis of Renaissance Thought* (Urbana: University of Illinois Press, 1965), 118, 129–36.

73. De Leon-Jones, *Giordano Bruno and the Kabbalah*, 7.

74. Nauert, *Agrippa*, 129–30.

75. Coudert, *Impact of the Kabbalah*, 79.

76. Harkness, *John Dee's Conversations with Angels*, 159.

77. Philip Almond, *Adam and Eve in Seventeenth-Century Thought* (Cambridge: Cambridge University Press, 1999), 129.

78. Harkness, *John Dee's Conversations with Angels*, 160.
79. Blau, *Christian Interpretation of the Cabala*, 12.
80. Bostocke, *The difference betwene the auncient Physicke*, B1r.
81. See Michael T. Walton, "John Dee's Monas Hieroglyphica: Geometrical Cabala," *Ambix* 23 (July 1976): 116–23; and Harkness, *John Dee's Conversations with Angels*, 157–94.
82. Harkness, *John Dee's Conversations with Angels*, 182, 158.
83. Blau, *Christian Interpretation of the Cabala*, 5–6, 15. Blau suggests that the doctrine of the *sephiroth* might actually have assisted Christian interpreters of the Cabala in explaining the Trinitarian doctrine: God could be understood as both One and Three in the sense that there were three emanations of one infinite God rather than three persons in one God (15).
84. Moran, *Alchemical World of the German Court*, 92.
85. Blau, *Christian Interpretation of the Cabala*, 3–4. See also Coudert's excellent summary and analysis of the poem "Kabbala Denudata," by Knorr and F. M. van Helmont, in *Impact of the Kabbalah*, 137–39.
86. Coudert, *Impact of the Kabbalah*, 139.
87. John MacQueen, *Numerology: Theory and Outline History of a Literary Mode* (Edinburgh: Edinburgh University Press, 1985), 2. Frances Yates has written on the influence of Vitruvius on Fludd. See her *Theatre of the World* (Chicago: University of Chicago Press, 1969), 42–59.
88. Georges Ifrah, *From One to Zero: A Universal History of Numbers*, trans. Lowell Blair (New York: Viking Penguin, 1985), 293–94.
89. Karl Menninger, *Number Words and Number Symbols: A Cultural History of Numbers*, trans. Paul Broneer (Cambridge: Harvard University Press, 1969), 266.
90. "Obviously miswritten for cube." "Truth's Golden Harrow: An Unpublished Alchemical Treatise by Robert Fludd," ed. C. H. Josten, *Ambix* 3 (April 1949): 115n32.
91. "Obvious mistake; the number should be 1000." *Ibid.*, 115n33.
92. Fludd, "Truth's Golden Harrow," Ashmole MS 766, fol. 17r. Hereafter cited parenthetically in the text.
93. Thomas Tymme made a similar point in *A Light in Darkness* (1602) and in *Ten English lepers* (1586), when he identified duality, the cause of division and schism, as the worst sin against God.
94. Fludd made this point throughout the manuscript. See, for example, fols. 18 and 27.
95. See Peter J. Ammann, "The Musical Theory and Philosophy of Robert Fludd," *Journal of the Warburg and Courtauld Institutes* 30 (1967): 198–227; Godwin, *Robert Fludd*, 18; and D. P. Walker, "Kepler's Celestial Music," *Journal of the Warburg and Courtauld Institutes* 30 (1967): 228–50.
96. It is fitting for another reason that Fludd turned to music: The number of musicians on the payroll in James's court was double the number during Elizabeth's reign, and the cost of providing music for the court rose from £30 to £40 between the two reigns. Lee, *Great Britain's Solomon*, 148.
97. Shackelford, *Philosophical Path for Paracelsian Medicine*, 404, 445.
98. CSPD 1623–25, 283.
99. James Ussher, *A Briefe Declaration of the Universalitie of the Church of Christ, and the Untie of the Catholike Faith* (London, 1624), 3–5. Hereafter cited parenthetically in the text.
100. The contribution, however, was the extent of Ussher's support for Dury's grand plan. R. Buick Knox, *James Ussher: Archbishop of Armagh* (Cardiff: University of Wales Press, 1967), 170–71.
101. Cogswell, *Blessed Revolution*, 309–22, esp. 310–12.
102. L. J. Reeve, *Charles I and the Road to Personal Rule* (Cambridge: Cambridge University Press, 1989), 9–11.
103. Patterson, *King James VI and I*, 356.
104. Francis Bacon, *The Essayes* (London, 1625), 16.
105. On Dury, see Anthony Milton, "'The Unchanged Peacemaker'? John Dury and the



Politics of Irenicism in England, 1628–1643,” in Greengrass et al., *Samuel Hartlib and Universal Reformation*, 95–117. On James VI and I, see Patterson, *King James VI and I*, 336–38.

106. Sharpe, *Personal Rule of Charles I*, 392.

107. Laud (from his *Conference with Fisher*, xvi), quoted in *ibid.*, 288.

108. Donald Nugent, *Ecumenism in the Age of the Reformation: The Colloquy of Poissy* (Cambridge: Harvard University Press, 1974), 4. See also Louthan, *Quest for Compromise*; and Mark Greengrass et al., *Samuel Hartlib and Universal Reformation*.

109. Fludd’s will has been reproduced by William Huffman in *Robert Fludd and the End of the Renaissance*, 222–29.

### Chapter 3

1. For an examination of Bacon’s legal training and career, see Daniel R. Coquillette, *Francis Bacon* (Stanford: Stanford University Press, 1992).

2. Francis Bacon, “The Masculine Birth of Time, or Three Books on the Interpretation of Nature,” in Benjamin Farrington, *The Philosophy of Francis Bacon: An Essay on Its Development from 1603 to 1609, with New Translations of Fundamental Texts* (Chicago: University of Chicago Press, 1964), 65, 66. Bacon is referring to Severinus’s *Idea medicinae philosophicae* (Basel, 1571), in which Severinus attempts to organize Paracelsian thought and helps to establish Paracelsus as a Christian natural philosopher, arguing that he was a disciple of Mosaical philosophy. Walton, “Genesis and Chemistry,” 6.

3. Francis Bacon, *Novum Organum*, book 1, aphorisms 54 and 64, in *The Works of Francis Bacon*, ed. James Spedding, Robert Leslie Ellis, and Douglas Denon Heath, 15 vols. (Boston: Brown and Taggard, 1860–64), 8:84 and 8:92–93, respectively (hereafter cited as *Works*). I have used the fifteen-volume edition of Bacon’s works edited by Spedding, Ellis, and Heath. This may cause confusion because the same set of works was published in a seven-volume edition. Where possible, I have identified the text citation as precisely as possible so that the reader with access only to the seven-volume edition can locate the reference with relative ease. For example, whenever I refer to the *Novum Organum*, I identify whether the reference is from book 1 or book 2 and provide the aphorism number, as in the present case.

4. *Ibid.*, book 1, aphorism 85, in *Works*, 8:119–20.

5. Bacon, *Gesta Grayorum*, ed. Desmond Bland (Liverpool: Liverpool University Press, 1968), 46–48.

6. Thomas Kaufmann notes that the reference to Hermes Trismegistus has largely been ignored. Kaufmann argues that the key to this passage is Bacon’s reference to a curiosity cabinet, or *kunstkammer*, and that Bacon’s proposal may be seen as a state-sponsored, hermetic, magical view of collecting. Such a study of natural philosophy based on his “works and monuments” would create a new Hermes Trismegistus. See Kaufmann, *The Mastery of Nature: Aspects of Art, Science, and Humanism in the Renaissance* (Princeton: Princeton University Press, 1993), 174–94, esp. 184–85.

7. Bacon, *Novum Organum*, book 1, aphorism 85, in *Works*, 8:119–20. The sixteenth-century Italian physician Leonardo Fioravanti said much the same thing: “The art of alchemy was a most ingenious investigation of natural philosophy, and of no small importance. For many pretty inventions have been extracted from it, which have been of great ornament to the world, and of great advantage to artisans. Indeed, this art has led the way to the art of glassmaking, . . . and to many other arts necessary for civilized life.” Quoted in William Eamon, *Science and the Secrets of Nature* (Princeton: Princeton University Press, 1994), 394n91.

8. Bacon, *Novum Organum*, book 1, aphorism 5, in *Works*, 8:68.

9. Jole Shackelford blames early propagandists of the Royal Society for the misunderstanding of Bacon’s view of occult philosophy. See his *Philosophical Path for Paracelsianism*, 229. For more on Bacon and the influence of occult philosophy in his work, see *ibid.*, 257–64; Joshua C. Gregory, “Chemistry and Alchemy in the Natural Philosophy of Francis Bacon, 1561–1626,” *Ambix* 2 (September 1938): 105–7; Muriel West, “Notes on the Importance of Alchemy

to Modern Science in the Writings of Francis Bacon and Robert Boyle,” *Ambix* 9 (June 1961): 103–5; Paolo Rossi, *Francis Bacon: From Magic to Science*, trans. Sacha Rabinovitch (Chicago: University of Chicago Press, 1968), esp. 11–22; Charles W. Lemmi, “Mythology and Alchemy in *The Wisdom of the Ancients*,” in *Essential Articles for the Study of Francis Bacon*, ed. Brian Vickers (Hamden, Conn.: Archon Books, 1968), 51–92; Stanton J. Linden, “Francis Bacon and Alchemy: The Reformation of Vulcan,” *Journal of the History of Ideas* 35 (October–December 1974): 547–60; John C. Briggs, *Francis Bacon and the Rhetoric of Nature* (Cambridge: Harvard University Press, 1989), 148–50; Graham Rees, “Francis Bacon’s Semi-Paracelsian Cosmology,” *Ambix* 22 (July 1975): 81–101; Rees, “Francis Bacon’s Semi-Paracelsian Cosmology and the Great Instauration,” *Ambix* 22 (November 1975): 161–73; Peter Urbach, *Francis Bacon’s Philosophy of Science: An Account and a Reappraisal* (La Salle, Ill.: Open Court, 1987), esp. 125 but also 71–72, 97; and William R. Newman, “Alchemical and Baconian Views on the Art/Nature Division,” in Debus and Walton, *Reading the Book of Nature*, 81–90. See also James J. Bono, *The Word of God and the Languages of Man* (Madison: University of Wisconsin Press, 1995), 207–46. In contrast to these studies, see, for example, B. H. G. Wormald, *Francis Bacon: History, Politics, and Science, 1561–1626* (Cambridge: Cambridge University Press, 1993), 313–16.

10. Perez Zagorin, *Francis Bacon* (Princeton: Princeton University Press, 1998), 3.

11. *Ibid.*, 3–16.

12. See Benjamin Farrington, *Francis Bacon: Philosopher of Industrial Science* (New York: Henry Schuman, 1949), 5, 46–47, 75, and esp. 146–77 and 158–59; cf. Benjamin Milner, “Francis Bacon: The Theological Foundations of *Valerius Terminus*,” *Journal of the History of Ideas* 58 (April 1997): 245–64.

13. Bacon, *New Atlantis*, in *Works*, 5:370.

14. Quoted in Zagorin, *Francis Bacon*, 133.

15. The legend of Hermes Trismegistus was finally detonated by Isaac Casaubon in 1614. There is an interesting connection between Casaubon and Bacon: James I, in whose court Bacon flourished, was the patron of Casaubon. Casaubon’s comments on the spurious legend of Trismegistus appeared in his *De rebus sacris et ecclesiasticis exercitationes XVI* (London, 1614), 73–87. The classic study of how belief in the legend of Hermes Trismegistus was born, developed, and eventually dispelled is told in Yates, *Giordano Bruno and the Hermetic Tradition*, 1–62. See also Anthony Grafton, “Protestant Versus Prophet: Isaac Casaubon on Hermes Trismegistus,” in his *Defenders of the Text: The Traditions of Scholarship in an Age of Science, 1450–1800* (Cambridge: Harvard University Press, 1991), 145–61.

16. Charles Whitney, *Francis Bacon and Modernity* (New Haven: Yale University Press, 1986), 23–32.

17. Bacon, *The Great Instauration*, in *Works*, 8:24.

18. Bacon made numerous references to the youthful nature of the ancients. See, for example, his preface to *The Great Instauration*, *ibid.*, 8:26.

19. For an interesting vignette on how Bacon used his legal skills in an attempt to fund his idea for a new educational system, see David Cressy, “Francis Bacon and the Advancement of Schooling,” in *Society and Culture in Early Modern England*, vol. 6 (Aldershot, UK: Ashgate, 2003), 65–74.

20. Bacon, *Novum Organum*, book 2, aphorism 5, in *Works*, 8:171.

21. “A Confession of Faith,” in *Works*, 14:51. Bacon repeated this observation in the dedication to James I in *The Great Instauration* (*ibid.*, 8:35–36). See also Harrison, “Original Sin and the Problem of Knowledge,” 240.

22. Bacon, *The Advancement of Learning*, book 1, in *Works*, 6:92, 138.

23. Bacon, *Valerius Terminus*, *ibid.*, 6:27, 28.

24. Bacon, *Novum Organum*, book 2, aphorism 52, *ibid.*, 8:350.

25. Bacon, *Valerius Terminus*, *ibid.*, 6:29, 30.

26. *Ibid.*, 33, 34. The full line reads, “Now on touching things offered unto idols, we know that we all have knowledge. Knowledge puffeth up but charity edifieth.” 1 Cor. 8:1.

27. *Ibid.*, 34. Bacon has changed the order: “Though I speak with the tongues of men and of

angels, and have not charity, I am become as sounding brass, or a tinkling cymbal. And though I have the gift of prophecy, and understand all mysteries, and all knowledge; and though I have faith, so that I could remove mountains, and have not charity, I am nothing. And though I bestow all my goods to feed the poor, and though I give my body to be burned, and have not charity, it profiteth me nothing.” 1 Cor. 13:1–3.

28. Although Stephen Gaukroger is unwilling to go quite as far, he concedes that Christianity plays a significant role in Bacon’s thought. See his *Francis Bacon and the Transformation of Early Modern Philosophy* (Cambridge: Cambridge University Press, 2001), 78–83. See also Steven Matthews, *Theology and Science in Francis Bacon* (Aldershot, UK: Ashgate, 2008), 63–71.

29. Bacon, *Novum Organum*, book 2, aphorism 52, in *Works*, 8:350.

30. Matthews, *Theology and Science in Francis Bacon*, 74.

31. On the issue of alchemists’ own doubt, see especially Nummedal, *Alchemy and Authority in the Holy Roman Empire*.

32. Debus, *English Paracelsians*, 15.

33. “For as Trithemius hath well observed, Scientia Mali non est Malum, sed Usus; The knowledge of Evil is not Evil, but the practice of it.” Thomas Vaughan, *Magia Adamica* (London, 1650), 20.

34. Quoted in J. R. Partington, “Trithemius and Alchemy,” *Ambix* 2 (September 1938): 58. See also Partington, “Albertus Magnus on Alchemy,” *Ambix* 1 (May 1937): 3–20.

35. Partington, “Trithemius and Alchemy,” 55, 53.

36. Farrington, *Francis Bacon*, 11–12; Rossi, *Francis Bacon*, 8.

37. Farrington, *Francis Bacon*, 12.

38. See Pamela O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Baltimore: Johns Hopkins University Press, 2001), 180.

39. Vannoccio Biringuccio, *De la Pirotechnia*, trans. Cyril Stanley Smith and Martha Teach Gnudi (New York: Basic Books, 1959), 35, 36.

40. *Ibid.*, 37.

41. Ingrid D. Rowland, “Abacus and Humanism,” *Renaissance Quarterly* 48 (Winter 1995): 718–19.

42. Biringuccio, *De la Pirotechnia*, 336.

43. John Martin, *Venice’s Hidden Enemies: Italian Heretics in a Renaissance City* (Berkeley and Los Angeles: University of California Press, 1993), chapter 5, “Hiding,” 123–46.

44. Biringuccio, *De la Pirotechnia*, 336, 337.

45. *Ibid.*, 338.

46. We know that Bacon knew of this work because he spoke approvingly of it in *The Advancement of Learning*. J. G. Crowther, *Francis Bacon: The First Statesman of Science* (London: Cresset Press, 1960), 70–71.

47. Georgius Agricola, *De re metallica* (Basel, 1556), book 10, 370, 360; see also book 10 in entirety, 354–92. Bern Dibner identifies the *aqua valentes* in his examination and summary of *De re metallica*. Dibner, *Agricola on Metals* (Norwalk, Conn.: Burndy Library, 1958), 110.

48. Tara Nummedal’s *Alchemy and Authority in the Holy Roman Empire* is the most sophisticated study to date on the elision of alchemy and metallurgy.

49. Long, *Openness, Secrecy, Authorship*, 180. William R. Newman and Lawrence M. Principe have made a powerful case in *Alchemy Tried in the Fire* that some alchemists did work with great precision. Starkey and Boyle, however, lived at least a generation or more after Bacon, Biringuccio, and Agricola, and this may account for the differences in how their work was perceived.

50. Bacon, *Of the Wisdom of the Ancients* (1609), in *Works*, 13:152.

51. Bacon, *Novum Organum*, book 1, aphorism 65, in *Works*, 8:94.

52. *Ibid.*

53. Bacon, “Epistle Dedicatory,” *Great Instauration*, in *Works*, 8:36. Bacon’s “divine philosopher” is Solomon. “It is the glory of God to conceal a thing; but the honour of kings is to search out a matter.” Prov. 25:2.

54. *Ibid.*, book 1, aphorism 89, in *Works*, 8:125–26.
55. “Of Superstition,” *ibid.*, 12:135–36.
56. Bacon, *Novum Organum*, book 2, aphorism 31, in *Works*, 8:243.
57. Bacon, *Advancement of Learning*, book 1, *ibid.*, 6:126.
58. *Ibid.*, 6:212.
59. Bacon, *Valerius Terminus*, in *ibid.*, 6:33.
60. Rees, “Francis Bacon’s Semi-Paracelsian Cosmology,” 91.
61. B. J. T. Dobbs referred to this tradition as the “older” tradition of alchemy in *Foundations of Newton’s Alchemy*, 26–35. She later revised her position on that distinction, arguing that Newton’s alchemical work had deep theological significance. See Dobbs, *Janus Faces of Genius*, 17–18n42 and *passim*.
62. Bacon, “Of Simulation and Dissimulation,” in *Works*, 12:98–99. One should resort to simulation or dissimulation on the basis of realistic expectations: “The best composition and temperature is to have openness in fame and opinion; secrecy in habit; dissimulation in seasonable use; and a power to feign, if there be no remedy” (99).
63. See Perez Zagorin, *Ways of Lying: Dissimulation, Persecution, and Conformity in Early Modern Europe* (Cambridge: Harvard University Press, 1990), chapter 11, “Occultism and Dissimulation.” Quotation on 271–72.
64. Bacon, “On Cunning,” in *Works*, 12:153–54.
65. There is some evidence to support the theory that Bacon was homosexual. For one thing, he married very late in life, at age forty-five, and there is much evidence that the marriage was never consummated and was completely loveless. He eventually disinherited his wife, Alice Barnham, several months before he died, and she remarried ten days after his death. We may never be certain if his sexual identity was the cause of his desire to disguise his real purpose or intent in his work, but the issue may be one of several explanations. Zagorin, *Ways of Lying*, 12–15.
66. *Ibid.*, 187. For more specific considerations of Bacon’s public persona, see Martin, *Francis Bacon*.
67. Martin, “Natural Philosophy and Its Public Concerns,” 105.
68. Charles W. Lemmi, *The Classic Deities in Bacon: A Study in Mythological Symbolism* (Baltimore: Johns Hopkins University Press, 1933), 61–74; Don Cameron Allen, *Mysteriously Meant: The Rediscovery of Pagan Symbolism and Allegorical Interpretation in the Renaissance* (Baltimore: Johns Hopkins University Press, 1970), 244–46; and John Mulryan, “Through a Glass Darkly”: *Milton’s Reinvention of the Mythological Tradition* (Pittsburgh: Duquesne University Press, 1996), 220–23.
69. Zagorin, *Francis Bacon*, 70.
70. Bacon, *Wisdom of the Ancients*, in *Works*, 13:76.
71. There is lovely irony in his choice of Pan: He called his method of discovery the “Hunt of Pan.” Eamon, *Science and the Secrets of Nature*, 286.
72. Lemmi, *Classic Deities in Bacon*, 61.
73. This quotation and the several that follow regarding Pan are drawn from “Pan, or Nature,” in Bacon, *Wisdom of the Ancients*, in *Works*, 13:94–101.
74. Lemmi, *Classic Deities in Bacon*, 62.
75. *Ibid.*, 64–65.
76. *Ibid.*, 67.
77. Lemmi argued that the idea that sin and corruption contributed to the completion of creation is not part of the Christian tradition but is Platonic, and he finds it “probable” that Bacon was thinking of the *Timaeus* when he wrote this passage. The idea of the fallen natural world was commonplace by the early seventeenth century, but the *Timaeus* was equally well known, and Bacon may well have had it in mind in the closing line of the passage. See Lemmi, *Classic Deities in Bacon*, 74.
78. Bacon, *Novum Organum*, book 1, aphorism 96, in *Works*, 8:132.
79. Lemmi, *Classic Deities in Bacon*, 69.

80. Bacon, *Novum Organum*, book 1, aphorism 127, in *Works*, 8:158–59.
81. Bacon, *Advancement of Learning*, book 2, *ibid.*, 8:397, 399.
82. Bacon, “A Preparation Toward the Union of Laws,” *ibid.*, 15:317–19.
83. Bacon, *Advancement of Learning*, *ibid.*, 9:354.
84. Bacon’s mother was a Puritan, and although he did not share her religious views, this may help to explain why he took a generous view of dissent.
85. Bacon, *Advancement of Learning*, in *Works*, 9:354.
86. Rossi, *Francis Bacon*, 12–13.
87. Quoted in *ibid.*, 13.
88. *Ibid.*, 14.
89. Bacon, *Novum Organum*, book 2, aphorism 1, in *Works*, 8:167.
90. This sketch of Bacon’s life is drawn largely from Zagorin’s *Francis Bacon*, 17–24.
91. For more on court patronage, see Linda Levy Peck, *Northampton, Patronage, and Policy at the Court of James I* (Boston: Allen and Unwin, 1982); and Peck, *Court Patronage and Corruption in Early Stuart England* (New York: Routledge, 1993).
92. Zagorin, *Francis Bacon*, 22.
93. In 1598 James wrote *The True Lawe Of free Monarchies*, an early manifesto on the divine right of kings.
94. Bacon, *Wisdom of the Ancients*, in *Works*, 13:157–58.
95. Bacon, *Novum Organum*, book 2, aphorism 2, in *Works*, 8:168. See also Henry G. van Leeuwen, *The Problem of Certainty in English Thought: 1630–1690* (The Hague: Martinus Nijhoff, 1970), 3.
96. Comenius quoted in J. T. Young, *Faith, Medical Alchemy, and Natural Philosophy*, 105–6. For more on how the Hartlib Circle both followed and departed from Bacon’s plan, see 107–10, 112, 118, and 151.
97. Bacon, *New Atlantis*, in *Works*, 5:382, 383.
98. Stephen Gaukroger’s observation that Bacon believed that politics and natural philosophy were “mediated by theology” is especially prescient here. Gaukroger, *Francis Bacon and the Transformation of Early Modern Philosophy*, 76–77.

## Chapter 4

1. Clare Gittings, “Venetia’s Death and Kenelm’s Mourning,” in *Death, Passion, and Politics: Van Dyck’s Portraits of Venetia Stanley and George Digby*, ed. Ann Sumner (London: Dulwich Picture Gallery, 1995), 59.
2. Gittings notes that Digby’s symptoms of bereavement are “basic human characteristics.” *Ibid.*, 61.
3. Kevin Sharpe argues that the efforts of Charles I and Laud to enforce a more uniform Anglican liturgy were an outgrowth of their attempt to impose order and consolidate monarchical power, not to bring the Church of England closer to the Roman Catholic Church. See Sharpe, *Personal Rule of Charles I*, 275–402.
4. For Digby’s own thoughts on these matters, see his *Discourse Concerning Infallibility in Religion* (Amsterdam, 1652); *A Conference with a Lady about Choice of Religion* (London, 1636); and *Letters between Lord George Digby and Sir Kenelm Digby concerning Religion* (Sherburn, 1639).
5. See Dobbs, *Janus Faces of Genius*, 81–84.
6. The “weapon-salve,” or “powder of sympathy,” was a substance Digby created to treat the cause of an injury rather than the injury itself. For example, a knife that caused a stab wound—not the wound itself—would be treated with the powder of sympathy. B. J. T. Dobbs, “Studies in the Natural Philosophy of Sir Kenelm Digby,” *Ambix* 18 (March 1971): 13.
7. B. J. T. Dobbs, “Studies in the Natural Philosophy of Sir Kenelm Digby: Part II, Digby and Alchemy,” *Ambix* 20 (November 1973): 148.
8. Between 1971 and 1974, B. J. T. Dobbs published a series of articles in *Ambix* that examined

Digby's natural philosophy and alchemy that remain the most sophisticated treatment of Digby's natural philosophy published to date. In addition to the articles cited in the previous two notes, see her final essay in the series, "Digby's Experimental Alchemy—The Book of Secrets," *Ambix* 21 (March 1974): 1–28.

9. John Henry, "Atomism and Eschatology: Catholicism and Natural Philosophy in the Interregnum," *British Journal for the History of Science* 15 (November 1982): 212.

10. This event is vividly portrayed in Kishlansky, *Monarchy Transformed*, 113–15.

11. Dobbs, "Studies in the Natural Philosophy of Sir Kenelm Digby," 145–46.

12. Thomas Fuller, *The History of the Worthies of England: By Thomas Fuller, D.D.*, new ed., 3 vols. (London, 1840), 3:137.

13. John Aubrey, "Brief Lives," *Chiefly of Contemporaries, Set Down by John Aubrey, Between the Years 1669 and 1696*, ed. Andrew Clark, 2 vols. (Oxford: Clarendon Press, 1898), 1:225.

14. "In those dayes Richard, earle of Dorset (eldest son and heire to the Lord Treasurer, . . . lived in the greatest splendor of any nobleman of England. Among other pleasures that he enjoyed, Venus was not the least. This pretty creature's [Venetia's] fame quickly came to his Lordship's eares, who made no delay to catch at such an opportunity." *Ibid.*, 1:229–30.

15. *Ibid.*, 1:226. Apparently Digby was fully aware of Venetia's reputation, because Aubrey has him reassure his mother, who opposed the marriage, "that a handsome lusty man that was discreet might make a vertuose wife out of a brothell-house."

16. Digby, *Observations on the 22. Stanza in the 9th Canto of the 2d. Book of Spencers Faery Queen* (London, 1644).

17. See Popper, "Abraham, Planter of Mathematics," esp. 98.

18. John Wallis, *Commercium Epistolicum, De Quaestionibus quibusdam Mathematicis nuper habitum. Inter Nobilissimos Viros D. Gulielmum Vicecomitem Brouncker, Anglum; D. Kenelimum Digby, item Equitem Anglum; D. Fermatium, in suprema Tholosatum Curia Iudicem Primarium; D. Frenicium, Nobilem Parisinum. Una cum D. Job. Wallis Geomet. Prorress. Oxonii. D. Franc. a Schooten, Math. Prof. Lugduni Batavorum; Aliisque. Edidit Johannes Wallis, S. Th. D. in celeberrima Oxoniensi Academia Geometriae Professor Savilianus* (Oxford: Printed by A. Lichfield for Tho. Robinson, 1658).

19. Mordechai Feingold, *The Mathematicians' Apprenticeship: Science, Universities, and Society in England, 1560–1640* (Cambridge: Cambridge University Press, 1984), 82.

20. R. T. Petersson, *Sir Kenelm Digby, the Ornament of England, 1603–1665* (London: Jonathan Cape, 1956), 93–94.

21. Sharpe, *Personal Rule of Charles I*, 301–3.

22. Hugh Trevor-Roper, *Archbishop Laud: 1573–1645* (London: Macmillan, 1940), 273; and "Thomas Allen (1542–1632)," in *Dictionary of National Biography*.

23. Neither Digby nor Laud read Arabic, but Laud was very interested in those who could, and he made provision on English ships bound for Eastern ports that they return with one Persian or Arabic manuscript. Trevor-Roper, *Archbishop Laud*, 274.

24. Erica Veevers, *Images of Love and Religion: Queen Henrietta Maria and Court Entertainments* (Cambridge: Cambridge University Press, 1989), 76.

25. Sharpe, *Personal Rule of Charles I*, 305.

26. Austin Woolrych, *Britain in Revolution: 1625–1660* (Oxford: Oxford University Press, 2002), 172.

27. Sharpe, *Personal Rule of Charles I*, 306.

28. Caroline M. Hibbard, *Charles I and the Popish Plot* (Chapel Hill: University of North Carolina Press, 1983), 5.

29. Robin Clifton, "Fear of Popery," in Russell, *Origins of the English Civil War*, 150.

30. Veevers, *Images of Love and Religion*, 180–81.

31. *Ibid.*, 166–67.

32. Aubrey quoted in Feingold, *Mathematicians' Apprenticeship*, 181–82.

33. A proclamation by Henry IV in 1598, the Edict of Nantes provided limited toleration, liberties, and security to Huguenots. Considered too generous by Catholics and too restrictive by

Huguenots, the edict suffered some erosion in the early decades of the seventeenth century but continued to allow religious liberty until Louis XIV finally revoked that last vestige of freedom in 1685.

34. MS 215 b, unpaginated, Codrington Library, All Souls College, Oxford University.
35. Petersson, *Sir Kenelm Digby*, 162.
36. Dobbs, "Studies in the Natural Philosophy of Sir Kenelm Digby," 150.
37. Digby to George Digby, December 26, 1638, Additional MS 41846, fols. 17v–20r (quotation on fol. 18v), British Library, London.
38. Digby to Sir Tobie Matthew, September 15, 1641, *ibid.*, fol. 55r.
39. Additional MS 38175, fol. 41r, British Library, London. Digby was something of a money lender. His correspondence is swollen with letters demanding repayment from debtors. The above example is an excellent one of how natural philosophy permeated all aspects of life, but a poor one of his patience and generosity.
40. Pamela Smith has examined how alchemy functioned as a language of mediation in the Habsburg Court. See her "Alchemy as a Language of Mediation at the Habsburg Court," *Isis* 85 (March 1994): 1–25; and *Business of Alchemy*.
41. Sir Kenelm Digby, *Observations upon Religio Medici* (London, 1643), 50–51.
42. *Ibid.*, 52.
43. Petersson, *Sir Kenelm Digby*, 140–42.
44. Digby, *Conference with a Lady*, 55.
45. See Wallace, *Puritans and Predestination*, viii–ix.
46. Quoted in Veevers, *Images of Love and Religion*, 183. For more on Charles I, politics, and Catholicism, see, for example, John Bossy, *The English Catholic Community, 1570–1850* (Oxford: Oxford University Press, 1976); Daniel Massa, "Giordano Bruno's Ideas in Seventeenth-Century England," *Journal of the History of Ideas* 38 (1977): 227–42; and Graham Parry, *The Golden Age Restor'd: The Culture of the Stuart Court, 1603–42* (Manchester: Manchester University Press, 1981).
47. Veevers, *Images of Love and Religion*, 183.
48. Digby, *Observations upon Religio Medici*, 19.
49. "Faith depending upon the indefectibility of humane nature, which is infinitely more noble than they, and whose forme is elevated beyond the reach of matter. . . . It followeth of consequence that faith must be lesse subject to contingency, and lesse lyable to error than naturall sciences are. And they being in universall infallible and certaine; faith must likewise be so too; and more if more may be." *Conference with a Lady*, 70–71.
50. *Ibid.*, 77–91.
51. MS 215 b, unpaginated, Codrington Library, All Souls College, Oxford University. This letter is an undated copy of the original and is not written in Digby's hand.
52. Robert Hugh Kargon, *Atomism in England from Hariot to Newton* (Oxford: Clarendon Press, 1966), 63–76.
53. Gary Deason, "Reformation Theology and the Mechanistic Conception of Nature," in Lindberg and Numbers, *God and Nature*, 168.
54. Marie Boas Hall, "Digby, Kenelm," in *Dictionary of Scientific Biography*, ed. Charles Coulston Gillespie, 18 vols. (New York: Charles Scribner's Sons, 1970–80), 4:95–96.
55. Digby, *Two Treatises: The Nature of Bodies; The Nature of Mans Soule* (Paris: Printed by Gilles Blaizot, 1644).
56. "To My Sonne Kenelm," *ibid.*, sig. E.
57. See Holden and Tyrrel's preface to the *Two Treatises*.
58. Emily Michael and Fred S. Michael, "Two Early Modern Concepts of Mind: Reflecting Substance vs. Thinking Substance," *Journal of the History of Philosophy* 27 (January 1989): 31. Michael and Michael note that for the next 150 years, "personal immortality was viewed as a critical and pressing philosophical problem" (32). See also Margaret J. Osler, *Divine Will and the Mechanical Philosophy: Gassendi and Descartes on Contingency and Necessity in the Created World* (Cambridge: Cambridge University Press, 1994), 62.
59. Osler, *Divine Will and the Mechanical Philosophy*, 80–101.

60. Aristotle, *De Anima (On the Soul)*, trans. Hugh Lawson-Tancred (New York: Penguin Classics, 1986), 126.

61. Digby, *Two Treatises*, 411–12.

62. Wallace, *Puritans and Predestination*, 81–82.

63. The Tyacke thesis that the rise of Arminianism in the 1620s was one of the primary causes of the war prompted vigorous debate in the 1980s. Davies, Sharpe, and White offer a more plausible explanation, in my view, namely, that the religious division was less between Calvinists and Arminians than between the broad, moderate Anglican position and the Puritans' radical predestinarianism. For this debate, see Nicholas Tyacke, "Puritanism, Arminianism, and Counter-Revolution," in Russell, *Origins of the English Civil War*, 119–43; Peter White, "The Rise of Arminianism Reconsidered," *Past and Present* 101 (November 1983): 34–54; William M. Lamont, "The Rise of Arminianism Reconsidered," *Past and Present* 107 (May 1985): 227–31; Nicholas Tyacke and Peter White, "Debate: The Rise of Arminianism Reconsidered," *Past and Present* 115 (May 1987): 201–29; Peter Lake, "Calvinism and the English Church, 1570–1635," *Past and Present* 114 (February 1987): 32–76; Kenneth Fincham and Peter Lake, "The Ecclesiastical Policy of King James I," *Journal of British Studies* 24 (1985): 169–207; Jonathan M. Atkins, "Calvinist Bishops, Church of Unity and Arminianism," *Albion* 28 (1986): 411–28; and Tyacke, *Anti-Calvinists*. Peter Lake has noted how even moderation could be used as a polemic. See Lake, "Moderate and Irenic Case for Religious War."

64. Digby, *Two Treatises*, 424–26.

65. *Ibid.*, 426. Some saw Descartes's mechanism as a denial of God's power on earth, but Margaret Osler has argued that Descartes's apparent denial of miracles ought not to be seen necessarily as a diminishing of God's power but rather as Descartes's affirmation of God's omnipresent stability. Osler, "Eternal Truths and the Laws of Nature: The Theological Foundations of Descartes' Philosophy of Nature," *Journal of the History of Ideas* 46 (July–September 1985): 360–62. On the question of whether Boyle was an atomist, see J. J. MacIntosh, "Boyle on Epicurean Atheism and Atomism," in *Atoms, Pneuma, and Tranquility: Epicurean and Stoic Themes in European Thought*, ed. Margaret J. Osler (Cambridge: Cambridge University Press, 1991), 197–219.

66. The implications of Pelagianism in the discussion of free will were not new. For example, William of Ockham anticipated and defended himself against precisely this charge in the early fourteenth century. See Steven Ozment, *The Age of Reform, 1250–1550: An Intellectual and Religious History of Late Medieval and Reformation Europe* (New Haven: Yale University Press, 1980), 40–42.

67. Richard S. Westfall, "The Rise of Science and the Decline of Orthodox Christianity: A Study of Kepler, Descartes, and Newton," in Lindberg and Numbers, *God and Nature*, 226–27.

68. Digby was in good company here. Gassendi, and to a lesser extent Hobbes, tried to understand the role of God in the mechanical philosophy. For more on this issue, see Osler, *Divine Will and the Mechanical Philosophy*, 36–77; and Lisa T. Sarasohn, "Motion and Morality: Pierre Gassendi, Thomas Hobbes, and the Mechanical World-View," *Journal of the History of Ideas* 46 (July–September 1985): 363–79. Sarasohn notes that theological theories played a relatively small role in Gassendi's thought compared to his detailed studies in physical theories (367). For more on Gassendi's philosophy in particular, see Lynn Sumida Joy, *Gassendi the Atomist: Advocate of History in an Age of Science* (Cambridge: Cambridge University Press, 1987).

69. Digby, *Two Treatises*, 433–34.

70. *Ibid.*, 435.

71. *Ibid.*, 442.

72. Sharpe, *Personal Rule of Charles I*, 100, 104, 530.

73. Ian Roy, "George Digby, Royalist Intrigue, and the Collapse of the Cause," in *Soldiers, Writers, and Statesmen of the English Revolution*, ed. Ian Gentles, John Morrill, and Blair Worden (Cambridge: Cambridge University Press, 1998), 79–80.

74. Petersson, *Sir Kenelm Digby*, 234–36.

75. *Ibid.*, 254–55.



76. Digby, *A Late Discourse Made in a Solemne Assembly of Nobles and Learned Men at Montpelier in France* (London, 1658).

77. The full quotation reads as follows: “For, to give you a due account of the Vegetation of Plants; I should first examine the natures of *Rarefaction*, of *Condensation*, of *Filtration*, of *Fermentation*, of *Attraction*, of *Imbibition*, of *Concoction*, of *Augmentation*, of *Nourishment*, of *Assimilation*, and of sundry other actions or vertues (as we might term them) of the like strain: Which I should no sooner have made an end of, and have shewed you wherein consist the life and death of a Vegetable.” Digby, *A Discourse Concerning the Vegetation of Plants*. (London, 1661), 2–3. Hereafter cited parenthetically in the text.

78. Hutchison has recognized the sympathetic attitude of Walter Charleton and Thomas Hobbes toward occult qualities. See Keith Hutchison, “What Happened to Occult Qualities in the Scientific Revolution?” *Isis* 73 (June 1982): 233–53, esp. 234–35. See also Hutchinson’s “Supernaturalism and the Mechanical Philosophy,” *History of Science* 21 (September 1983): 297–333.

79. Ron Millen, “The Manifestation of Occult Qualities in the Scientific Revolution,” in *Religion, Science, and Worldview*, ed. Margaret J. Osler and Paul Lawrence Farber (Cambridge: Cambridge University Press, 1985), 185–216.

80. John Henry, “Occult Qualities and the Experimental Philosophy: Active Principles in Pre-Newtonian Matter Theory,” *History of Science* 24 (September 1986): 357–58.

81. See Caroline Walker Bynum, *The Resurrection of the Body in Western Christianity, 200–1336* (New York: Columbia University Press, 1995).

82. The passage to which Digby alluded is Job 14:2, which, in the Vulgate that he used, read in full as follows: “Qui quasi flos egreditur et conteritur, et fugit velut umbra, et nunquam in eodem statu permanet.” His Protestant contemporaries would have read the same passage as “He cometh forth like a flower, and is cut down: he fleeth also as a shadow, and continueth not.”

83. Digby was right to say that this issue “perplexed even the best Christians,” and it always has. The resurrection of the dead appears in one of the earliest canonical epistles of the New Testament, 1 Cor. 15:12–56, which is believed to have been written ca. 53–54 CE; the issue is said to have been of “the utmost significance” to the author of letter. See J. Paul Sampley, “The First Letter to the Corinthians: Introduction, Commentary, and Reflections,” in *The New Interpreter’s Bible in Twelve Volumes*, vol. 10, ed. Leander E. Keck et al. (Nashville: Abingdon Press, 2002), 777, 973.

84. Until Charles Webster’s excellent recent contribution, there was no better place to begin a study of Paracelsianism than with Walter Pagel’s groundbreaking study of Paracelsian thought, *Paracelsus*, esp. 50–51. See also Webster, *Paracelsus*, 134–39, 163, 228–29, 235–37, 250. For the relationship between alchemy and religion, see Herbert Breeger, “Elias Artista—A Precursor of the Messiah in Natural Science,” in *Nineteen Eighty-Four: Science Between Utopia and Dystopia*, ed. Everett Mendelsohn and Helga Nowotny (Dordrecht: Reidel, 1984), 49–72; Willard, “Alchemy and the Bible.”

85. Dobbs, “Studies in the Natural Philosophy of Sir Kenelm Digby,” 157.

86. Dobbs argued that the Stoic *pneuma* had important alchemical significance. She suggested that in Newton’s alchemical treatise “Of Natures obvious laws & processes in vegetation,” Newton described remarkable similarities between his “aether” (a spirit that existed as a kind of fifth Aristotelian element) and the Stoic *pneuma*. Both were material, both inspired the form of earthly bodies, and both gave bodies the characteristics of life. See Dobbs, *Janus Faces of Genius*, 27–29. The role of ancient philosophies in the history of science has been examined in Osler, *Atoms, Pneuma and Tranquility*. See especially Peter Barker’s essay in that volume, “Stoic Contributions to Early Modern Science.”

87. Digby, *A Choice Collection of Rare Chymical Secrets and Rare Experiments in Philosophy* (London, 1682), 1–2.

88. Dobbs, “Digby’s Experimental Alchemy,” 3.

89. Replicability is a central focus of Newman and Principe’s *Alchemy Tried in the Fire*.

90. Bacon, *Sylva Sylvarum*, in *Works*, 4:316. See also Briggs, *Francis Bacon and the Rhetoric of*

*Nature*, 148–50; Gregory, “Chemistry and Alchemy,” 106; Linden, “Francis Bacon and Alchemy,” 551; Rossi, *Francis Bacon*, 12–22; and West, “Notes on the Importance of Alchemy,” 103–4.

91. Digby, *Chymical Secrets*, 2.

92. *Ibid.*, 100.

93. Henry, “Atomism and Eschatology,” 232.

94. Digby, *Conference with a Lady*, 74.

95. Digby, *Two Treatises*, A2r. Unfortunately for Digby, the calamity of the war continued after the publication of the *Two Treatises*. In July 1648 his son, Kenelm, was killed in a brief but fierce battle at the town of St. Neots. Petersson, *Sir Kenelm Digby*, 233.

96. Dobbs, *Foundations of Newton's Alchemy*, 78–80.

## Chapter 5

1. Ashmole MS 972, fols. 190v–196r. This letter was reproduced in F. Sherwood Taylor, “Thomas Charnock,” *Ambix* 3–4 (December 1946): 152–54.

2. R. T. Gunther, *The Old Ashmolean: The Oldest Museum for the History of the Natural Sciences* (Oxford: Oxford University Press, 1933); Michael Hunter, *Elias Ashmole, 1617–1692: The Founder of the Ashmolean Museum and His World* (Oxford: Ashmolean Museum, 1983); and Martin Welch, “The Foundation of the Ashmolean Museum,” in *Tradescaent's Rarities: Essays on the Foundation of the Ashmolean Museum, 1683*, ed. Arthur MacGregor (Oxford: Oxford University Press, 1983), 40–58. For more on museums and curiosity cabinets, see Oliver Impey and Arthur MacGregor, eds., *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe* (Oxford: Clarendon Press, 1985); and Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (Berkeley and Los Angeles: University of California Press, 1994).

3. Findlen, *Possessing Nature*, 1–11.

4. Although there are specific differences between a cabinet of wonders and a cabinet of curiosities, these distinctions were blurred at the time. See Impey and MacGregor's introduction to *Origins of Museums*, 3. For our purposes, unless otherwise noted, the term “curiosity cabinet” refers to all presentations of collections. For more on the distinctive aspects and purposes of collecting, see the essays in MacGregor, and Findlen, *Possessing Nature*. See also Kaufmann, *Mastery of Nature*, 174–94, esp. 175–76.

5. Kaufmann, *Mastery of Nature*, 185–90; Paula Findlen, “Cabinets, Collecting, and Natural Philosophy,” in *Rudolf II and Prague*, ed. Eliška Fučíková et al. (London: Thames and Hudson, 1997), 212, 215–17; Smith, *Business of Alchemy*, 169–72.

6. See Ann Blair, *The Theater of Nature: Jean Bodin and Renaissance Science* (Princeton: Princeton University Press, 1997); John M. Headley, *Tommaso Campanella and the Transformation of the World* (Princeton: Princeton University Press, 1997); William H. Sherman, *John Dee: The Politics of Reading and Writing in the English Renaissance* (Amherst: University of Massachusetts Press, 1994); and Harkness, *John Dee's Conversations with Angels*. See also Kevin Sharpe's appreciation of the relationship between collected knowledge and political influence, in his elegant study *Sir Robert Cotton, 1586–1631: History and Politics in Early Modern England* (Oxford: Oxford University Press, 1979).

7. Blair, *Theater of Nature*, 65–77; see also Kevin Sharpe, *Reading Revolutions: The Politics of Reading in Early Modern England* (New Haven: Yale University Press, 2000).

8. Allen G. Debus, introduction to facsimile edition of Elias Ashmole, *Theatrum Chemicum Britannicum* (New York: Johnson Reprint, 1967), xxvi–xxvii.

9. Hunter, *Elias Ashmole*, 3.

10. *Ibid.*, 6. For a full study of William Lilly, see Ann Geneva, *Astrology and the Seventeenth-Century Mind: William Lilly and the Language of the Stars* (Manchester: Manchester University Press, 1995).

11. Ashmole, *Elias Ashmole*, 2:542, 546, 559.

12. *Ibid.*, 2:530; see also April London, “*Musaeum Tradescantianum* and the Benefactors to the Tradescant’s Museum,” in MacGregor, *Tradescant’s Rarities*, 24.

13. London, “*Musaeum Tradescantianum*,” 24; Ashmole, *Elias Ashmole*, 1:94.

14. Ashmole may have been interested in astrology, but his friend and fellow virtuoso John Evelyn did not think he knew much about it. In the summer of 1678 he wrote in his diary, “Went to see Mr. Elias Ashmole’s library and curiosities at Lambeth. He has divers MSS. but most of them astrological, to which study he is addicted, tho’ I believe not learned, but very industrious, as his History of the Order of the Garter proves.” John Evelyn, *Diary of John Evelyn*, ed. William Bray, 4 vols. (London: Bicker and Son, 1906), 2:336.

15. Dobbs, *Foundations of Newton’s Alchemy*, 49–53.

16. See Findlen, *Possessing Nature*, 97–150.

17. Ashmole’s collection appears to be more explicit and less subtle than the collected knowledge that appeared in Jean Bodin’s *Theatrum*, uncovered by Ann Blair. See Blair, *Theater of Nature*, 65–77.

18. Hermes Trismegistus was believed to be a contemporary of Moses, a prophet of Christianity, and the first alchemist (or one of the first) since the discovery of his texts in 1460. Isaac Casaubon corrected that mistake in 1614 through his examination of the hermetic texts, arguing that Trismegistus could have lived no earlier than the third century CE. (See chapter 3, note 15.)

19. Findlen, *Possessing Nature*, 147.

20. See Ashmole MS 800, fols. 130–34; Ashmole MS 830, fols. 129–31; Ashmole MS 784, fol. 18.

21. Sherman, *John Dee*, 29–52, quotation on 36.

22. Ashmole, *Elias Ashmole*, 1:54.

23. *Ibid.*, 2:478; Ashmole MS 1136, fol. 21v.

24. The full title was “The Supercelestial, Celestiall, and Terrestrial Divine Lighte of Nature describing the Creation of the World, by an Igmaticall figure of the Trinitey in Unitye out of Moses agreeing with Divine and Morall writers. The Philosophers Stone, and Philosophical worke, out of Moses agreeing with the Ancient Philosophers.” Ashmole MS 1459, fols. 3v–26v.

25. Anthony Wood, *Athenae Oxoniensis* (London, 1820) vol. 4, col. 355.

26. John Dixon Hunt, “Curiosities to Adorn Cabinets and Gardens,” in Impey and MacGregor, *Origins of Museums*, 193.

27. Kaufmann, *Mastery of Nature*, 174–94, esp. 184–87.

28. See the preface in Elias Ashmole, *The Antiquities of Berkshire* (London, 1719), 1:xxii.

29. Andrew Cunningham, “The Culture of Gardens,” in *Cultures of Natural History*, ed. N. Jardine, J. A. Secord, and E. C. Spary (Cambridge: Cambridge University Press, 1996), 38–39; and John Dixon Hunt, *Garden and Grove: The Italian Renaissance Garden in the English Imagination, 1600–1750* (London: J. M. Dent and Sons, 1986), 80–81. For more on the idea of the virtuoso, see Walter E. Houghton, “The English Virtuoso in the Seventeenth Century, Part I,” *Journal of the History of Ideas* 3 (January 1942): 51–73; Part II, 3 (April 1942): 190–219. For more recent studies of specific virtuosi, see Stephen Bann, *Under the Sign: John Bargrave as Collector, Traveler, and Witness* (Ann Arbor: University of Michigan Press, 1994); Joseph M. Levine, *Dr. Woodward’s Shield: History, Science, and Satire in Augustan England* (Berkeley and Los Angeles: University of California Press, 1977); Barbara Shapiro and Ross G. Frank Jr., *English Scientific Virtuosi in the Sixteenth and Seventeenth Centuries* (Los Angeles: Clark Library, 1979); and Peter Miller, *Peiresc’s Europe: Learning and Virtue in the Seventeenth Century* (New Haven: Yale University Press, 2000).

30. John E. Ingram, “John Evelyn and His ‘Elysium Britannicum,’” in *Elysium Britannicum, or The Royal Gardens*, ed. John E. Ingram (Philadelphia: University of Pennsylvania Press, 2001), 1–9.

31. Evelyn, *Diary of Evelyn*, March 25, 1691, 3:93. This is not to say that Evelyn viewed collectors uncritically. When speaking of the grandson of the great antiquarian Sir Robert Cotton, Evelyn wrote, “When they [his visitors] were gone, came to see me Sir Jo. Cotton, heir to the

famous antiquary, Sir Robert Cotton: a pretended greate Grecian, but had by no meanes the parts or genius of his grandfather.” *Ibid.*, July 2, 1666, 2:197.

32. Quoted in Ingram, “John Evelyn and His ‘Elysium Britannicum,’” 3.

33. Therese O’Malley, “Introduction to John Evelyn and the ‘Elysium Britannicum,’” in *John Evelyn’s “Elysium Britannicum” and European Gardening*, ed. Therese O’Malley and Joachim Wolschke-Bulmahn (Washington, D.C.: Dumbarton Oaks Research Library and Collection, 1998), 12.

34. Evelyn, *Diary of Evelyn*, October 17, 1671, 2:270.

35. *Ibid.*, September 23, 1673, 2:298.

36. *Ibid.*, June 9, 1662, 2:147.

37. See Hunt, *Garden and Grove*; and John Prest, *The Garden of Eden* (New Haven: Yale University Press, 1981). For a general history, see Christopher Thacker, *The History of Gardens* (Berkeley and Los Angeles: University of California Press, 1979).

38. For a fuller discussion of this topic, see Prest, *Garden of Eden*.

39. David Coffin discusses the Renaissance tradition of kings and emperors personally caring for their gardens in *Gardens and Gardening in Papal Rome* (Princeton: Princeton University Press, 1991), 215.

40. Thomas Browne, *Hydriotaphia, Urne-Buriall, or A Discourse of the Sepulchrall Urnes lately found in Norfolk. Together with The Garden Of Cyrus, or The Quincunciall, Lozenge, or Network Plantations of the Ancients, Artificially Naturally, Mystically Considered* (London, 1658), 161–202. Browne cleverly bound *The Garden of Cyrus* with a text on burial urns, providing in a single volume a text on burial and a text on birth and growth.

41. *Ibid.*, 195–96.

42. Evelyn, *Diary of Evelyn*, 2:79, 94, 470.

43. Hugh Plat, *The Jewel-house of Art and Nature* (London, 1594), 7–8, 22, 11–13. For secret writing, Plat advised writing with ink on one side of the page and with milk on the other. When the ink side was held to a flame, he said, the milk side would turn “bleuish.”

44. Hugh Plat, *Floraes Paradise, Beautified and adorned with sundry sortes of delicate fruites and flowers: A Philosophicall Garden: with a touch at the vegetable worke in physicek, whose principall fire is the stomacke of the Ostrich* (London, 1608), 25.

45. Hugh Plat, *The Garden of Eden* (London, 1653), 9. This treatise was reprinted many times, and the pagination varies significantly. By the fourth edition (1653), “The Philosophicall Garden” passage appears at the end of the text. Some editions are not paginated. I relied on the edition available at the Folger Shakespeare Library.

46. “To the Reader,” *ibid.*, 15.

47. *Ibid.*, 5–6, 14, 2–3, 6–8, 10–12. Plat referred to Duchesne by his Latinate name, Doctor Quercitanus.

48. For more on the secrecy and revelation of knowledge, see Eamon, *Science and the Secrets of Nature*; and Long, *Openness, Secrecy, Authorship*.

49. See John Read, *Prelude to Chemistry* (London: G. Bell and Sons, 1936), 113, 239. This volume is dated but still useful.

50. See *The Oxford Classical Dictionary*, 3d ed., ed. Simon Hornblower and Antony Spawford (Oxford: Oxford University Press, 1996).

51. Jean d’Espagnet, *The Arcanum or Grand Secret of Hermetick Philosophy*, bound with Arthur Dee’s *Fasciculus Chemicus*, 195–97.

52. *Ibid.*, 196–97.

53. *Ibid.*, 197–98.

54. Findlen, *Possessing Nature*, 4.

55. Paula Findlen, “Possessing the Past,” *American Historical Review* 103 (February 1998): 86–113.

56. D’Espagnet, *Arcanum*, 200–201.

57. See Blair, *Theater of Nature*, 153–79.

58. Dobbs, *Foundations of Newton's Alchemy*, 49–53, esp. 51.
59. Quoted in Ashmole, *Elias Ashmole*, 2:505.
60. Toward the end of the text Dee added a prayer asking God “to open, detect, and unlock it [alchemical mysteries], to all that worthily importune and implore his Aid, to his eternall praise and honour” (143).
61. Ashmole, “Prolegomena,” in Dee, *Fasciculus Chemicus*, fol. 3r–v.
62. D’Espagnet, *Arcanum*, 157–8.
63. Ashmole, “Prolegomena,” A4v.
64. Ashmole, *Elias Ashmole*, 1:95–96, 2:623–26.
65. *Ibid.*, 1:107. Dugdale became Ashmole’s father-in-law when Ashmole married Elizabeth, Dugdale’s third (and second surviving) daughter. Graham Parry, *The Trophies of Time: English Antiquarians of the Seventeenth Century* (Oxford: Oxford University Press, 1995), 248; Ashmole, *Elias Ashmole*, 1:164.
66. See my discussion of Ashmole’s antiquarian approach to alchemy in “Virtuoso’s History.”
67. Ashmole, “Prolegomena,” A4v–[A5r] (signature A5 is neither marked nor paginated).
68. See also Josten’s discussion of Ashmole and Arthur Dee in Ashmole, *Elias Ashmole*, 1:63–69.
69. The *Arcanum* even referred to astrological concerns and reproduced the “Signifier of the Philosophers,” the nativity for the proper time for the alchemical process to succeed—a sure way to win Ashmole’s sympathies. D’Espagnet, *Arcanum*, 266 (the page is mispaginated as 252). The description is on 267–68 (correct pagination).
70. *Ibid.*, 163.
71. Elias Ashmole, comp., *The Way to Bliss, In Three Books* (London, 1658), 167.
72. D’Espagnet, *Arcanum*, 164, 212–14.
73. *Ibid.*, 218.
74. Ashmole, “Prolegomena,” *Theatrum Chemicum Britannicum*, A2r.
75. *Ibid.*, A2v.
76. Findlen, *Possessing Nature*, 3.
77. *Ibid.*, 15–47; Arthur J. Wheelock, *A Collector’s Cabinet* (Washington, D.C.: National Gallery of Art, 1998), 19–23.
78. Ashmole MS 971 and 972, fol. 300v. Robert Cotton’s library held a rich collection of heraldic papers. See Sharpe, *Sir Robert Cotton*, 54–55.
79. Ashmole MS 971 and 972, fol. 300v. For his other sketches of heraldic and alchemical images, see fols. 305r, 317v. I am grateful to Ms. Eva Oledzka, reference librarian at the Bodleian Library, for assisting me with this reference.
80. Ashmole MS 971 and 972, fol. 286r; *Theatrum Chemicum Britannicum*, 440–41; Ashmole, *Elias Ashmole*, 1:77.
81. Ashmole MS 971 and 972, fol. 286r.
82. *Ibid.*, fol. 318v.
83. Ashmole, *Theatrum Chemicum Britannicum*, A2r.
84. Kassell, “Reading for the Philosophers’ Stone,” 135. Also see Kassell’s discussion of Ashmole’s techniques in *Medicine and Magic in Elizabethan London*, 112n175, 230.
85. Ashmole, *Theatrum Chemicum Britannicum*, A4v–Br.
86. *Ibid.*, Bv.
87. Michael Hunter, “Alchemy, Magic, and Moralism in the Thought of Robert Boyle,” *British Journal for the History of Science* 23 (December 1990): 399, 409.
88. Ashmole, *Theatrum Chemicum Britannicum*, Bv, B2r.
89. *Ibid.*, B2r.
90. Ashmole, “To the Reader,” *Way to Bliss*, unpaginated (first folio, verso).
91. *Ibid.* (second page, recto).
92. Abraham Cowley, “The Garden,” in Cowley, *The Essays and Other Prose Writings*, ed. Alfred B. Gough (Oxford: Clarendon Press, 1915), 176–77.
93. “I presented the King with the 3 Bookes I had printed. vizt: Fasciculus Chemicus,

Theatrum Chemicum Britannicum & The Way to Bliss.” Ashmole MS 1136, fol. 35v; Ashmole, *Elias Ashmole*, 2:787.

94. J. Andrew Mendelsohn, “Alchemy and Politics in England, 1649–1660,” *Past and Present* 135 (May 1992): 30.

95. Hunter, *Elias Ashmole*, 16–18.

96. *Ibid.*, 11–12.

97. See Ashmole, *Elias Ashmole*, vol. 3, passim.

98. Evans, *Rudolf II and his World*, 247.

99. “Because the knowledge of Nature is very necessarrie to humane life, health, & the conveniences thereof, & because that knowledge cannot be soe well & usefully attaind, except the history of Nature be knowne & considered; and to this [end], is requisite the inspection of Particulars, especially those as are extraordinary in their Fabrick, or useful in Medicine, or applied to Manufacture or Trade.” Quoted in Arthur MacGregor, “The Cabinet of Curiosities in Seventeenth-Century Britain,” in Impey and MacGregor, *Origins of Museums*, 152.

100. R. F. Ovenell, *The Ashmolean Museum, 1683–1894* (Oxford: Clarendon Press, 1986), 15. Ovenell cites a letter from Humphrey Prideaux to John Ellis that not only confirms the city of Oxford’s active participation but also reveals that Robert Plot’s research on the natural history of Oxford was more of the catalyst for this effort than Ashmole’s offer to give the university his collection of “rarities” once a building to house them had been erected.

101. Gerard Turner, “The Cabinet of Experimental Philosophy,” in Impey and MacGregor, *Origins of Museums*, 220–21.

102. Kaufmann suggests that given the utilitarian purpose that Bacon proposed, referring to a collection as a cabinet of curiosity may not be as appropriate as calling it a cabinet of wonder. Kaufmann, *Mastery of Nature*, 185–86.

## Epilogue

1. *An Ordinance of the Lords and Commons Assembled in Parliament, for charging and taxing a Monthly rate of 300 pounds upon the County of Essex, for the safety and Defence of the said County, and to continue untill the first day of December next, if this unnaturall Warre shall so long continue* (London: Printed for Edward Husband, April 2, 1645). Referring to the Civil War as “this unnaturall warre” was common in the parliamentary printings of the 1640s. For example, *An Ordinance And Declaration of the Lords and Commons Assembled in Parliament: For the Raising, Maintaining, Paying, and Regulating of 3000 Foot, 1200 Horse, and 500 Dragoons, to be commanded by Sir William Waller*, states, “And be it further Ordained, that every Captaine both of Horse and Foot, and every other Superiour and inferiour Officer, or other in the said Army of the said Sir William Waller, belonging to the said Associated Counties, whose Pay commeth to ten Shillings a day, or above, shall take but half the Pay due unto him, and shall respit the other halfe upon the Publique Faith, untill this unnaturall Warre be ended. And every Officer or other that is to have five Shillings a day, or above, and under ten shillings, shall accept of two thirds of the Pay due to him, and shall respit one third part upon the Publique Faith, untill this unnaturall Warre be ended.”

2. Kishlansky, *Monarchy Transformed*, 63.

3. Newman and Principe’s *Alchemy Tried in the Fire* is particularly relevant to the present study; just as Newman and Principe argue that seventeenth-century alchemy was far more orderly than has been appreciated, we have seen that the alchemists in the present volume believed that worship and spirituality should also be approached with order, precision, and method.

4. Hill, *World Turned Upside Down*, 232–35. Michael Hunter noticed the same discrepancy as I have in Christopher Hill’s interpretation. See his *Elias Ashmole and His World*, 5–6.

5. E. P. Thompson, *The Making of the English Working Class* (New York: Pantheon Books, 1964), 12–13.



## BIBLIOGRAPHY

### Primary Sources

#### *Manuscript Collections and Libraries*

British Library, London

Additional MSS

Sloane MSS

Oxford University

Bodleian Library

Ashmole MSS

Digby MSS

Tanner MSS

Codrington Library, All Souls College

#### *Printed Sources*

Adrichem, Christiaan van. *A Briefe Description of Hierusalem. Translated from the Latin into English by Thomas Tymme Minister*. London: Peter Short for Thomas Wight, 1595.

Agricola, Georgius. *De re metallica*. Basel, 1556.

Aristotle. *De Anima (On the Soul)*. Translated by Hugh Lawson-Tancred. New York: Penguin Classics, 1986.

Ashmole, Elias. *The Antiquities of Berkshire. By Elias Ashmole, Esq; With A large Appendix of many valuable Original Papers, Pedigrees, of the most considerable Families in the said County, and a particular Account of the Castle, Colledge, and Town of Windsor. In Three Volumes*. London, 1719.

———. *Elias Ashmole (1617–1692): His Autobiographical and Historical Notes, His Correspondence, and Other Contemporary Sources Relating to His Life and Work*. Edited and translated by C. H. Josten. 5 vols. Oxford: Oxford University Press, 1966.

———. *The Institution, Laws & Ceremonies of the most Noble Order of the Garter*. London, 1672.

———, ed. and comp. *Theatrum Chemicum Britannicum*. London, 1652.

———, comp. *The Way to Bliss, In Three Books*. London, 1658.

Aubrey, John. “Brief Lives,” *Chiefly of Contemporaries, Set Down by John Aubrey, Between the Years 1669 and 1696*. Edited by Andrew Clark. 2 vols. Oxford: Clarendon Press, 1898.

Bacon, Francis. *The Essayes*. London, 1625.

———. *Gesta Grayorum*. Edited by Desmond Bland. English Reprint Series. Liverpool: Liverpool University Press, 1968.

———. “The Masculine Birth of Time, or Three Books on the Interpretation of Nature.” In Benjamin Farrington, *The Philosophy of Francis Bacon: An Essay on Its Development from 1603 to 1609, with New Translations of Fundamental Texts*. Chicago: University of Chicago Press, 1964.

———. *The Works of Francis Bacon*. Edited by James Spedding, Robert Leslie Ellis, and Douglas Denon Heath. 15 vols. Boston: Brown and Taggard, 1860–64.



- Biringuccio, Vannoccio. *De la Pirotechnia*. Translated by Cyril Stanley Smith and Martha Teach Gnudi. New York: Basic Books, 1959.
- Boord, Andrew. *The Breviarie of health*. London: Imprinted by Thomas Este, 1598.
- Bostocke, Robert. *The difference betwene the auncient Phisicke, first taught by the godly forefathers, consisting in unitie peace and concord: and the latter Phisicke proceeding from Idolaters, Ethnickes, and Heathen: as Gallen, and such other consisting in dualitie, discorde, and contrarietie*. London: Robert Walley, 1585.
- Brentz [Brenz], Johann. *Newes from Ninive to England*. London, 1570.
- Browne, Sir Thomas. *Hydriotaphia, Urne-Buriall, or A Discourse of the Sepulchrrall Urnes lately found in Norfolk. Together with The Garden Of Cyrus, or The Quincunciall, Lozenge, or Net-work Plantations of the Ancients, Artificially Naturally, Mystically Considered*. London, 1658.
- . *Religio Medici*. London: Printed for Andrew Crooke, 1642.
- Calvin, John. *A Commentarie of John Calvine, upon the first booke of Moses called Genesis: Translated out of Latine into English, by Thomas Tymme, Minister*. London: John Harison and George Bishop, 1578.
- . *A Commentarie upon S. Paules Epistles to the Corinthians. Written by M. John Calvin: and translated out of Latine into Englishe, by Thomas Tymme Minister*. London, 1577.
- Cowley, Abraham. *The Essays and Other Prose Writings*. Edited by Alfred B. Gough. Oxford: Clarendon Press, 1915.
- Dee, Arthur, comp. *Fasciculus Chemicus: Or Chymical Collections . . . Whereunto is added, The Arcanum or Grand Secret of Hermetick Philosophy. Both Made English By James Hasolle, Esquire*. London: Printed by T. Flesher for Richard Mynne, 1650. The *Fasciculus Chemicus* was a collection of Latin texts compiled by Arthur Dee in ca. 1631 that included Jean d'Espagnet's *Arcanum or Grand Secret of Hermetick Philosophy*; this 1650 translation into English, by Elias Ashmole (James Hasolle is an acrostic for Elias Ashmole), includes a prolegomena by Ashmole.
- Dee, John. *The Elements of Geometrie of the most auncient Philosopher Euclide. With a very fruitfull Preface made by M. J. Dee*. London, 1570.
- . "A Translation of John Dee's 'Monas Hieroglyphica' (Antwerp, 1564), with an Introduction and Annotations." Translated by C. H. Josten. *Ambix* 12 (June and October 1964): 84–221.
- della Porta, Giambattista. *Natural Magick*. London, 1658.
- de Serres, Jean. *The Three Partes of Commentaries, Containing the whole and perfect discourse of the Civill wares of Fraunce, Translated out of Latine into English by Thomas Timme Minister*. 4 vols. London: Frances Coldocke, 1574.
- Digby, George, Earl of Bristol. *Letters between Lord George Digby and Sir Kenelm Digby concerning Religion*. Sherburn, 1639.
- Digby, Sir Kenelm. *A Choice Collection of Rare Chymical Secrets and Rare Experiments in Philosophy*. London, 1682.
- . *A Conference with a Lady about Choice of Religion*. London, 1636.
- . *A Discourse Concerning Infallibility in Religion*. Amsterdam, 1652.
- . *A Discourse Concerning the Vegetation of Plants*. London, 1661.
- . *A Late Discourse Made in a Solemne Assembly of Nobles and Learned Men at Montpelier in France*. London, 1658.
- . *Letters between Lord George Digby and Sir Kenelm Digby concerning Religion*. Sherburn, 1639.
- . *Observations on the 22. Stanza in the 9th Canto of the 2d. Book of Spencers Faery Queen*. London, 1644.
- . *Observations upon Religio Medici*. London, 1643.
- . *Private Memoirs of Sir Kenelm Digby, Gentleman of the Bedchamber to King Charles the First. Written by Himself. Now first Published from the Original Manuscript, with an Introductory Memoir*. London, 1827.

- . *The Royall Apologie*. Paris, 1648.
- . *Two Treatises: The Nature of Bodies; The Nature of Mans Soule*. Edited by M. Holden and E. Tyrrel. Paris: Printed by Gilles Blaizot, 1644.
- Duchesne, Joseph. *The Practise of Chymicall, and Hermeticall Physicke, for the preservation of health, Translated into English, by Thomas Timme, Minister*. London: Printed by Thomas Creede, 1605.
- Evelyn, John. *Diary of John Evelyn*. Edited by William Bray. 4 vols. London: Bicker and Son, 1906.
- Fludd, Robert. *Mosaicall Philosophy*. London: Printed for Humphrey Moseley, 1659.
- . *Robert Fludd, Essential Readings*. Edited by William Huffman. London: Aquarian Press, 1992.
- . *Tractatus Apologeticus integritatem Societatis de Rosea Cruce defendens*. Leiden, 1617.
- . "Truth's Golden Harrow: An Unpublished Alchemical Treatise by Robert Fludd." Edited by C. H. Josten. *Ambix* 3 (April 1949): 91–150.
- . *Utriusque Cosmi Maioris scilicet et Minoris Metaphysica, Physica, Atque Technica Historia in duo Volumina secundum Cosmi differentiam divisa*. Oppenheim, 1617.
- Fuller, Thomas. *The History of the Worthies of England: By Thomas Fuller, D.D.* New ed. 3 vols. London, 1840.
- Hennessy, George. *Novum repertorium ecclesiasticum parochiale londinense*. London: Swan Sonnenschein and Co., 1898.
- Hester, John. *A hundred and foureteen Experiments and Cures*. London, 1596.
- James VI. *The True Lawe of free Monarchies*. Edinburgh, 1598.
- Johnson, William. *Lexicon Chymicum cum Obscuriorum Verborum et Rerum Hermeticum*. London, 1652.
- Marlorat, Augustine. *A Catholike and Ecclesiasticall exposition of the holy Gospell after S. John*. London: Thomas Marshe, 1575.
- . *A Catholike and Ecclesiasticall Exposition of the Holy Gospell after S. Marke and Luke*. London: Thomas Marshe, 1583.
- . *A Catholike And Ecclesiasticall exposition of the holy Gospell after S. Mathewe*. London: Thomas Marshe, 1570.
- Owen, John. *Of the Divine Originall, Authority, self-evidencing Light, and Power of the Scriptures*. Oxford, 1659.
- Paracelsus. *Selected Works*. Edited by Joland Jacobi. Translated by Norbert Guterman. Princeton: Princeton University Press, 1969.
- Plat, Hugh. *Floraes Paradise, Beautified and adorned with sundry sortes of delicate fruites and flowers: A Philosophicall Garden: with a touch at the vegetable worke in physicek, whose principall fire is the stomacke of the Ostrich*. London: Printed by H. L. for William Leake, 1608.
- . *The Garden of Eden*. London, 1653.
- . *The Jewel-house of Art and Nature*. London, 1594.
- Pollard, A. W., and G. R. Redgrave, comps. *A Short-Title Catalogue of Books Printed in England, Scotland, and Ireland and of English Books Printed Abroad, 1475–1640*. 3 vols. 2d ed., rev. and enl., begun by W. A. Jackson and F. S. Ferguson, completed by Katharine F. Pantzer and Philip R. Rider. London: Bibliographical Society, 1986–1991.
- Pugh, Robert. *Blacklo's Cabal*. London, 1653.
- Quarles, Francis. *Emblemes*. London, 1635.
- Raleigh, Sir Walter. *The History of the World*. London: Printed for Walter Burre, 1614.
- Reuchlin, Johann. *On the Art of the Kabbalah*. Translated by Martin Goodman and Sarah Goodman. New York: Abaris Books, 1983.
- Reynolds, John. *Perfet [sic] Directions for all English Gold now current in this Kingdome*. London, 1631.
- Ruland, Martin. *A Lexicon of Alchemy*. Translated by A. E. Waite. London: John M. Watkins, 1964.

- Schuler, Robert M., ed. *Alchemical Poetry, 1575–1700, from Previously Unpublished Manuscripts*. New York: Garland, 1995.
- Scot, Patrick. *Calderwoods Recantation*. London, 1622.
- . *Omnibus & Singulis*. London, 1619.
- . *A Table-Booke For Princes*. London, 1621.
- . *The Tillage of Light*. London, 1623.
- . *Vox-Vera, or Observations from Amsterdam*. London, 1625.
- Scott, Walter, ed. and trans. *Hermetica*. Vol. 1. Oxford: Clarendon Press, 1924.
- Stationers' Company. *A Transcript of the Registers of the Company of Stationers of London, 1554–1640 A.D.* Edited by Edward Arber. 5 vols. London: privately printed, 1875–94.
- Synesius of Cyrene. *The Essays and Hymns of Synesius of Cyrene*. Vol. 2. Translated by Augustine Fitzgerald. London: Oxford University Press, 1930.
- T. T. [Thomas Tymme]. *A Myrror for Martinists, and all other Schismatiques, which in these dangerous daies doe breake the godlie unitie, and disturbe the Christian peace of the Church*. Published by T. T. London: John Wolfe, 1590.
- Tymme, Thomas. *The Chariot of Devotion*. London: Printed by G. Eld for Thomas Baylie, 1618.
- . *A Dialogue philosophicall. Wherein natures secret closet is opened and the cause of all motion shewed*. London: Printed by T. S. for Clement Knight, 1612.
- . *The figure of Antichriste, with the tokens of the end of the world*. London: Imprinted for Frances Coldocke, 1586.
- . *A Light in Darkness*. Edited by S. K. Heninger Jr. Oxford: Bodleian Library, 1963.
- . *A plaine discoverie of ten English lepers*. London: Peter Short, 1592.
- . *The Poore Mans Pater noster*. London: Peter Short, 1598.
- . *A Preparation against the prognosticated dangers of this yeare, 1588*. London: John Wolfe, 1588.
- . *A Silver Watch-Bell*. London: By T. C. for William Cotton, 1605.
- Ussher, James. *A Briefe Declaration of the Universalitie of the Church of Christ, and the Unitie of the Catholike Faith*. London: Printed by Robert Young for Thomas Downes and Ephraim Dawson, 1624.
- Valentine, Basil. *His Triumphant Chariot of Antimony, with Annotations of Theodore Kirkringius, M.D. with the True Book of the Learned Synesius a Greek Abbot taken out of the Emperour's Library, concerning the Philosopher's Stone*. Edited by L. G. Kelly. New York: Garland, 1990.
- Vaughan, Thomas. *Magia Adamica*. London, 1650.
- Wallis, John, ed. *Commercium Epistolicum, De Quaestionibus quibusdam Mathematicis nuper habitum. Inter Nobilissimos Viros D. Gulielmum Vicecomitem Brouncker, Anglum; D. Kenelmum Digby, item Equitem Anglum; K. Fermatium, in suprema Tholosatum Curia Iudicem Primarium; D. Freniclum, Nobillem Parisinum. Una cum D. Job. Wallis Geomet. Profess. Oxonii. D. Franc: a Schooten, Math: Prof: Lugduni Batavorum; Aliisque. Edidit Johannes Wallis, S. Th. D. in celeberrima Oxoniensi Academia Geometriae Professor Savilianus*. Oxford: Printed by A. Lichfield for Tho. Robinson, 1658.

## Secondary Sources

- Abraham, Lyndy. *Marvell and Alchemy*. Brookfield, Vt.: Scolar Press, 1990.
- Allen, Don Cameron. "Ben Jonson and the Hieroglyphics." *Philological Quarterly* 18 (July 1939): 290–300.
- . *The Legend of Noah: Renaissance Rationalism in Art, Science, and Letters*. Urbana: University of Illinois Press, 1941.
- . *Mysteriously Meant: The Rediscovery of Pagan Symbolism and Allegorical Interpretation in the Renaissance*. Baltimore: Johns Hopkins University Press, 1970.

- Almond, Philip. *Adam and Eve in Seventeenth-Century Thought*. Cambridge: Cambridge University Press, 1999.
- Alvion, Gordon. *Charles I and the Court of Rome: A Study in Seventeenth-Century Diplomacy*. London: Burns, Oates and Washbourne, 1935.
- Ammann, Peter J. "The Musical Theory and Philosophy of Robert Fludd." *Journal of the Warburg and Courtauld Institutes* 30 (1967): 198–227.
- Ashton, R. *The English Civil War: Conservation and Revolution, 1630–1649*. London: Weidenfeld and Nicolson, 1978.
- Ashworth, William B., Jr. "Natural History and the Emblematic World View." In *Reappraisals of the Scientific Revolution*, ed. David C. Lindberg and Robert S. Westman, 303–32. Cambridge: Cambridge University Press, 1990.
- Assmann, Jan. *Moses the Egyptian: The Memory of Egypt in Western Civilization*. Cambridge: Harvard University Press, 1997.
- Aston, Trevor, ed. *Crisis in Europe, 1560–1660*. London: Routledge and Kegan Paul, 1965.
- Atkins, Jonathan M. "Calvinist Bishops, Church of Unity, and Arminianism." *Albion* 28 (1986): 411–28.
- Bainton, Roland H. *Hunted Heretic: The Life and Death of Michael Servetus, 1511–1553*. Boston: Beacon Press, 1953.
- Ball, Bryan W. *A Great Expectation: Eschatological Thought in English Protestantism to 1660*. Leiden: E. J. Brill, 1975.
- Bann, Stephen. *Under the Sign: John Bargrave as Collector, Traveler, and Witness*. Ann Arbor: University of Michigan Press, 1994.
- Barker, Peter. "The Role of Religion in the Lutheran Response to Copernicus." In *Rethinking the Scientific Revolution*, ed. Margaret J. Osler, 59–88. Cambridge: Cambridge University Press, 2000.
- . "Stoic Contributions to Early Modern Science." In *Atoms, Pneuma, and Tranquility: Epicurean and Stoic Themes in European Thought*, ed. Margaret J. Osler, 135–54. Cambridge: Cambridge University Press, 1991.
- Barnes, Robin Bruce. *Prophecy and Gnosis: Apocalypticism in the Wake of the Lutheran Reformation*. Stanford: Stanford University Press, 1988.
- Blair, Ann. *The Theater of Nature: Jean Bodin and Renaissance Science*. Princeton: Princeton University Press, 1997.
- Blau, Joseph. *The Christian Interpretation of the Cabala in the Renaissance*. New York: Columbia University Press, 1944.
- Bono, James J. *The Word of God and the Languages of Man*. Madison: University of Wisconsin Press, 1995.
- Bossy, John. *The English Catholic Community, 1570–1850*. Oxford: Oxford University Press, 1976.
- Bouwmsma, William. *Concordia Mundi: The Career and Thought of Guillaume Postel (1510–1581)*. Cambridge: Harvard University Press, 1957.
- . *A Usable Past*. Berkeley and Los Angeles: University of California Press, 1990.
- Breeger, Herbert. "Elias Artista—A Precursor of the Messiah in Natural Science." In *Nineteen Eighty-Four: Science Between Utopia and Dystopia*, ed. Everett Mendelsohn and Helga Nowotny, 49–72. Dordrecht: Reidel, 1984.
- Briggs, John C. *Francis Bacon and the Rhetoric of Nature*. Cambridge: Harvard University Press, 1989.
- Brooke, John Headley. *Science and Religion: Some Historical Perspectives*. Cambridge: Cambridge University Press, 1991.
- Bynum, Caroline Walker. *The Resurrection of the Body in Western Christianity, 200–1336*. New York: Columbia University Press, 1995.
- Carlin, Norah. *The Causes of the English Civil War*. Malden, Mass.: Blackwell, 1999.
- Carlson, David R. *English Humanist Books: Writers and Patrons, Manuscript and Print, 1475–1525*. Toronto: University of Toronto Press, 1993.

- Carlson, Leland H. *Martin Marprelate, Gentleman: Master Job Throkmorton Laid Open in His Colors*. San Marino, Calif.: Huntington Library, 1981.
- Carlton, Charles. *Going to the Wars: The Experience of the British Civil Wars, 1638–1651*. New York: Routledge, 1992.
- Clark, Peter. "The Alehouse and the Alternative Society." In *Puritans and Revolutionaries: Essays in Seventeenth-Century History Presented to Christopher Hill*, ed. Donald Pennington and Keith Thomas, 47–72. Oxford: Clarendon Press, 1978.
- Clark, Stuart. *Thinking with Demons: The Idea of Witchcraft in Early Modern Europe*. Oxford: Clarendon Press, 1997.
- Cliffe, J. T. *The Puritan Gentry Besieged, 1650–1700*. New York: Routledge, 1993.
- . *The Puritan Gentry: The Great Puritan Families of Early Stuart England*. Boston: Routledge and Kegan Paul, 1984.
- Clifton, Robin. "Fear of Popery." In *The Origins of the English Civil War*, ed. Conrad Russell, 145–67. New York: Barnes and Noble, 1973.
- Clulee, Nicholas H. *John Dee's Natural Philosophy: Between Science and Religion*. New York: Routledge, 1988.
- Coffin, David. *Gardens and Gardening in Papal Rome*. Princeton: Princeton University Press, 1991.
- Cogswell, Thomas. *The Blessed Revolution: English Politics and the Coming of War, 1621–1624*. Cambridge: Cambridge University Press, 1989.
- Cole, Rosalie. *Light and Enlightenment: A Study of the Cambridge Platonists and the Dutch Arminians*. Cambridge: Cambridge University Press, 1957.
- Collinson, Patrick. *Archbishop Grindal, 1519–1583: The Struggle for a Reformed Church*. Berkeley and Los Angeles: University of California Press, 1979.
- Cook, Harold J. *The Decline of the Old Medical Regime in Stuart London*. Ithaca: Cornell University Press, 1986.
- Copenhaver, Brian P. "Lefevre d'Étaples, Symphorien Champier, and the Secret Names of God." *Journal of the Warburg and Courtauld Institutes* 40 (1977): 189–211.
- Copenhaver, Brian P., and Charles B. Schmitt, eds. *Renaissance Philosophy*. Oxford: Oxford University Press, 1992.
- Coquillette, Daniel R. *Francis Bacon. Jurists: Profiles in Legal Theory*. Stanford: Stanford University Press, 1992.
- Coudert, Allison P. *The Impact of the Kabbalah in the Seventeenth Century: The Life and Thought of Francis Mercury van Helmont (1614–1698)*. Leiden: E. J. Brill, 1999.
- . "Some Theories of a Natural Language from the Renaissance to the Seventeenth Century." In *Magia Naturalis und die Entstehung der Modernen Naturwissenschaften*, ed. Albert Heinekamp, Gottfried-Wilhelm-Leibnitz-Gesellschaft, and Dieter Mettler, 56–114. Wiesbaden: Franz Steiner Verlag, 1978.
- Cressy, David. "Francis Bacon and the Advancement of Schooling." In *Society and Culture in Early Modern England*, vol. 6, 65–74. Aldershot, UK: Ashgate, 2003.
- Crowther, J. G. *Francis Bacon: The First Statesman of Science*. London: Cresset Press, 1960.
- Crowther-Heyck, Kathleen. "Wonderful Secrets of Nature: Natural Knowledge and Religious Piety in Reformation Germany." *Isis* 94 (June 2003): 253–73.
- Cunningham, Andrew. "The Culture of Gardens." In *Cultures of Natural History*, ed. N. Jardine, J. A. Secord, and E. C. Spary, 38–56. Cambridge: Cambridge University Press, 1996.
- . "Sir Thomas Browne and Religio Medici: Reason, Nature, and Religion." In *Religio Medici: Medicine and Religion in Seventeenth-Century England*, ed. Ole Peter Grell and Andrew Cunningham, 12–61. Brookfield, Vt.: Ashgate, 1996.
- Daley, Brian E. *The Hope of the Early Church: A Handbook of Patristic Eschatology*. Cambridge: Cambridge University Press, 1991.
- Daniel, David. *William Tyndale: A Biography*. New Haven: Yale University Press, 1994.
- Darnton, Robert. *The Great Cat Massacre and Other Episodes in French Cultural History*. New York: Basic Books, 1984.

- . *The Kiss of Lamourette: Reflections in Cultural History*. New York: W. W. Norton, 1990.
- Davies, Julian. *The Caroline Captivity of the Church: Charles I and the Remoulding of Anglicanism, 1625–1641*. Oxford: Oxford University Press, 1992.
- Davis, Natalie Zemon. *Society and Culture in Early Modern France*. Stanford: Stanford University Press, 1975.
- Dear, Peter. *Mersenne and the Learning of the Schools*. Ithaca: Cornell University Press, 1984.
- Deason, Gary. "Reformation Theology and the Mechanistic Conception of Nature." In *God and Nature: Historical Essays on the Encounter Between Christianity and Science*, ed. David C. Lindberg and Ronald L. Numbers, 167–91. Berkeley and Los Angeles: University of California Press, 1986.
- Debus, Allen G. *The Chemical Philosophy: Paracelsian Science and Medicine in the Sixteenth and Seventeenth Centuries*. 2 vols. New York: Science History Publications, 1977.
- . *The English Paracelsians*. New York: Franklin Watts, 1966.
- . *The French Paracelsians*. Cambridge: Cambridge University Press, 1991.
- . *Man and Nature in the Renaissance*. Cambridge: Cambridge University Press, 1978.
- . "Renaissance Chemistry and the Work of Robert Fludd." In *Alchemy and Chemistry in the Seventeenth Century: Papers Read by Allen G. Debus and Robert P. Multhauf*, 1–29. Los Angeles: William Andrews Clark Memorial Library, 1966.
- . "The Scientific Revolution: A Chemist's Reappraisal." In *Science, Pseudo-Science, and Utopianism in Early Modern Thought*, ed. Stephen A. McKnight, 45–50. Columbia: University of Missouri Press, 1992.
- de Grazia, Margreta. "The Secularization of Language in the Seventeenth Century." *Journal of the History of Ideas* 41 (April–June 1980): 319–29.
- de Leon-Jones, Karen Silvia. *Giordano Bruno and the Kabbalah*. New Haven: Yale University Press, 1997.
- Dibner, Bern. *Agricola on Metals*. Norwalk, Conn.: Burndy Library, 1958.
- Dixon, Laurinda S. *Alchemical Imagery in Bosch's Garden of Delights*. Ann Arbor: UMI Research Press, 1981.
- Dobbs, B. J. T. *Alchemical Death and Resurrection: The Significance of Alchemy in the Age of Newton*. Washington, D.C.: Smithsonian Libraries, 1990.
- . "Digby's Experimental Alchemy—The Book of Secrets." *Ambix* 21 (March 1974): 1–28.
- . *The Foundations of Newton's Alchemy, or "The Hunting of the Greene Lyon"*. Cambridge: Cambridge University Press, 1975.
- . *The Janus Faces of Genius: The Role of Alchemy in Newton's Thought*. Cambridge: Cambridge University Press, 1991.
- . "Newton as Final Cause and First Mover." *Isis* 85 (December 1994): 633–43.
- . "Studies in the Natural Philosophy of Sir Kenelm Digby." *Ambix* 18 (March 1971): 1–25.
- . "Studies in the Natural Philosophy of Sir Kenelm Digby: Part II, Digby and Alchemy." *Ambix* 20 (November 1973): 143–64.
- Eamon, William. *Science and the Secrets of Nature*. Princeton: Princeton University Press, 1994.
- Eisenstein, Elizabeth. *The Printing Press as an Agent of Change*. 2 vols. Cambridge: Cambridge University Press, 1979.
- Eliade, Mircea. *The Forge and the Crucible*. Translated by Stephen Corrin. New York: Harper and Row, 1962.
- Elton, Geoffrey. *Reform and Reformation: England, 1509–1558*. Cambridge: Harvard University Press, 1977.
- Estes, James Martin. *Christian Magistrate and the State Church: The Reforming Career of Johannes Brenz*. Toronto: University of Toronto Press, 1982.
- Evans, R. J. W. *Rudolf II and His World: A Study in Intellectual History*. Oxford: Clarendon Press, 1973.
- Fabricius, Johannes. *Alchemy: The Medieval Alchemists and Their Royal Art*. London: Diamond Books, 1994.

- Farrington, Benjamin. *Francis Bacon: Philosopher of Industrial Science*. New York: Henry Schuman, 1949.
- . “Trithemius and Alchemy.” *Ambix* 2 (September 1938): 52–59.
- Febvre, Lucien. *The Problem of Unbelief in the Sixteenth Century: The Religion of Rabelais*. Translated by Beatrice Gottlieb. Cambridge: Harvard University Press, 1982.
- Feingold, Mordechai. *The Mathematicians' Apprenticeship: Science, Universities, and Society in England, 1560–1640*. Cambridge: Cambridge University Press, 1984.
- Fekkes, Jan, III. *Isaiah and Prophetic Traditions in the Book of Revelation: Visionary Antecedents and Their Development*. Sheffield: Sheffield Academic Press, 1994.
- Field, Judith V. “Kepler's Rejection of Numerology.” In *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers, 273–96. Cambridge: Cambridge University Press, 1984.
- Fincham, Kenneth, and Peter Lake. “The Ecclesiastical Policy of King James I.” *Journal of British Studies* 24 (1985): 169–207.
- Findlen, Paula. “Cabinets, Collecting, and Natural Philosophy.” In *Rudolf II and Prague*, ed. Eliška Fučíková, James M. Bradburne, Beket Bukovinská, Jaroslava Hausenblasová, Lumomír Konečný, Ivan Muchka, and Michal Šroněk, 209–19. London: Thames and Hudson, 1997.
- . *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy*. Berkeley and Los Angeles: University of California Press, 1994.
- . “Possessing the Past.” *American Historical Review* 103 (February 1998): 83–114.
- Firth, Katharine R. *The Apocalyptic Tradition in Reformation Britain: 1530–1645*. Oxford: Oxford University Press, 1979.
- Fisch, Harold. “The Scientist as Priest: A Note on Robert Boyle's Natural Theology.” *Isis* 44 (September 1953): 252–65.
- Frank, Joseph. *The Beginnings of the English Newspaper*. Cambridge: Harvard University Press, 1961.
- French, Peter. *John Dee: The World of an Elizabethan Magus*. New York: Routledge and Kegan Paul, 1972.
- Frend, W. H. C. *The Donatist Church: A Movement of Protest in Roman North Africa*. Oxford: Clarendon Press, 1952.
- Friedman, Jerome. *Michael Servetus: A Case Study in Total Heresy*. Geneva: Librairie Droz, 1978.
- Gaskill, Malcolm. *Witchfinders: A Seventeenth-Century English Tragedy*. Cambridge: Harvard University Press, 2005.
- Gaukroger, Stephen. *Francis Bacon and the Transformation of Early Modern Philosophy*. Cambridge: Cambridge University Press, 2001.
- Geneva, Ann. *Astrology and the Seventeenth-Century Mind: William Lilly and the Language of the Stars*. Manchester: Manchester University Press, 1995.
- Gillespie, Raymond. *Devoted People: Belief and Religion in Early Modern Ireland*. Manchester: Manchester University Press, 1997.
- Gittings, Clare. “Venetia's Death and Kenelm's Mourning.” In *Death, Passion, and Politics: Van Dyck's Portraits of Venetia Stanley and George Digby*, ed. Ann Sumner, 54–68. London: Dulwich Picture Gallery, 1995.
- Godwin, Joscelyn. *Robert Fludd: Hermetic Philosopher and Surveyor of Two Worlds*. Boulder, Colo.: Shambhala Press, 1979.
- Golinski, Jan. “The Secret Life of an Alchemist.” In *Let Newton Be!* ed. John Fauvel, Raymond Flood, Michael Shortland, and Robin Wilson, 147–67. Oxford: Oxford University Press, 1988.
- Goodare, Julian, and Joyce Miller, eds. *Witchcraft and Belief in Early Modern Scotland*. New York: Palgrave Macmillan, 2008.
- Grafton, Anthony. *Defenders of the Text: The Traditions of Scholarship in an Age of Science, 1450–1800*. Cambridge: Harvard University Press, 1991.

- . “The Importance of Being Printed.” *Journal of Interdisciplinary History* 11 (Autumn 1980): 265–86.
- . *New Worlds, Ancient Texts*. Cambridge: Harvard University Press, 1992.
- Grant, Edward. “The Condemnation of 1277, God’s Absolute Power, and Physical Thought in the Late Middle Ages.” *Viator* 10 (1979): 211–44.
- Greenberg, Janelle. *The Radical Face of the Ancient Constitution: St. Edward’s Laws in Early Modern Political Thought*. Cambridge: Cambridge University Press, 2001.
- Greengrass, Mark, Michael Leslie, and Timothy Raylor, eds. *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication*. Cambridge: Cambridge University Press, 1994.
- Gregory, Joshua C. “Chemistry and Alchemy in the Natural Philosophy of Francis Bacon, 1561–1626.” *Ambix* 2 (September 1938): 93–111.
- Grell, Ole Peter. “Plague, Prayer, and Physic: Helmontian Medicine in Restoration England.” In *Religio Medici: Medicine and Religion in Seventeenth-Century England*, ed. Ole Peter Grell and Andrew Cunningham, 204–27. Brookfield, Vt.: Ashgate, 1996.
- Gunther, R. T. *The Old Ashmolean: The Oldest Museum for the History of the Natural Sciences*. Oxford: Oxford University Press, 1933.
- Haigh, Christopher. *English Reformations: Religion, Politics, and Society Under the Tudors*. Oxford: Oxford University Press, 1993.
- Harkness, Deborah E. *John Dee’s Conversations with Angels: Cabala, Alchemy, and the End of Nature*. Cambridge: Cambridge University Press, 1999.
- Harley, David. “Spiritual Physic, Providence, and English Medicine, 1560–1640.” In *Medicine and the Reformation*, ed. Andrew Cunningham and Ole Peter Grell, 101–17. New York: Routledge, 1993.
- Harris, Tim, Paul Seaward, and Mark Goldie, eds. *The Politics of Religion in Restoration England*. Oxford: Basil Blackwell, 1990.
- Harrison, John. *The Library of Isaac Newton*. Cambridge: Cambridge University Press, 1978.
- Harrison, Peter. “Original Sin and the Problem of Knowledge in Early Modern Europe.” *Journal of the History of Ideas* 63 (April 2002): 239–59.
- Headley, John M. *Tommaso Campanella and the Transformation of the World*. Princeton: Princeton University Press, 1997.
- Henry, John. “Atomism and Eschatology: Catholicism and Natural Philosophy in the Interregnum.” *British Journal for the History of Science* 15 (November 1982): 211–39.
- . “Occult Qualities and the Experimental Philosophy: Active Principles in Pre-Newtonian Matter Theory.” *History of Science* 24 (September 1986): 335–81.
- Hibbard, Caroline M. *Charles I and the Popish Plot*. Chapel Hill: University of North Carolina Press, 1983.
- Hill, Christopher. *The English Bible and the Seventeenth-Century Revolution*. London: Penguin Books, 1993.
- . *The Intellectual Origins of the English Revolution—Revisited*. Oxford: Oxford University Press, 1997.
- . *The World Turned Upside Down: Radical Ideas During the English Revolution*. New York: Viking Press, 1973.
- Hine, William L. “Marin Mersenne: Renaissance Naturalism and Renaissance Magic.” In *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers, 165–76. Cambridge: Cambridge University Press, 1984.
- Hotson, Howard. *Johann Heinrich Alsted, 1588–1638: Between Renaissance, Reformation, and Universal Reform*. Oxford: Clarendon Press, 2000.
- Houghton, Walter E. “The English Virtuoso in the Seventeenth Century, Part I.” *Journal of the History of Ideas* 3 (January 1942): 51–73.
- . “The English Virtuoso in the Seventeenth Century, Part II.” *Journal of the History of Ideas* 3 (April 1942): 190–219.



- Huffman, William. *Robert Fludd and the End of the Renaissance*. New York: Routledge, 1988.
- Hughes, Ann. *The Causes of the English Civil War*. 2d ed. New York: St. Martin's Press, 1998.
- Hunt, John Dixon. "Curiosities to Adorn Cabinets and Gardens." In *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey and Arthur MacGregor, 193–203. Oxford: Clarendon Press, 1985.
- . *Garden and Grove: The Italian Renaissance Garden in the English Imagination: 1600–1750*. London: J. M. Dent and Sons, 1986.
- Hunter, Michael. "Alchemy, Magic, and Moralism in the Thought of Robert Boyle." *British Journal for the History of Science* 23 (December 1990): 387–410.
- . *Elias Ashmole, 1617–1692: The Founder of the Ashmolean Museum and His World*. Oxford: Ashmolean Museum, 1983.
- Hutchison, Keith. "Supernaturalism and the Mechanical Philosophy." *History of Science* 21 (September 1983): 297–333.
- . "What Happened to Occult Qualities in the Scientific Revolution?" *Isis* 73 (June 1982): 233–53.
- Hutin, Serge. *Robert Fludd (1574–1637): Alchimiste et philosophe rosicrucien*. Paris: Omnium Litteraire, 1971.
- Hutton, Ronald. *The Restoration: A Political and Religious History of England and Wales, 1658–1667*. Oxford: Oxford University Press, 1985.
- Idel, Moshe. *Kabbalah: New Perspectives*. New Haven: Yale University Press, 1988.
- . "The Magical and Neoplatonic Interpretations of the Kabbalah in the Renaissance." In *Jewish Thought in the Sixteenth Century*, ed. Bernard Dov Cooperman, 186–242. Cambridge: Harvard University Press, 1983.
- Ifrah, Georges. *From One to Zero: A Universal History of Numbers*. Translated by Lowell Blair. New York: Viking Penguin, 1985.
- Impey, Oliver, and Arthur MacGregor, eds. *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*. Oxford: Clarendon Press, 1985.
- Ingram, John E. "John Evelyn and His 'Elysium Britannicum.'" In *Elysium Britannicum, or The Royal Gardens*, ed. John E. Ingram, 1–9. Philadelphia: University of Pennsylvania Press, 2001.
- Iversen, Erik. *The Myth of Egypt and Its Hieroglyphs in European Tradition*. Copenhagen: GEC GAD Publishers, 1961.
- Jacob, Margaret C. *The Newtonians and the English Revolution, 1689–1720*. Ithaca: Cornell University Press, 1976.
- Janacek, Bruce. "Thomas Tymme and Natural Philosophy: Prophecy, Alchemical Theology, and the Book of Nature." *Sixteenth-Century Journal* 30 (Winter 1999): 987–1008.
- . "A Virtuoso's History: Antiquarianism and the Transmission of Knowledge in the Alchemical Studies of Elias Ashmole." *Journal of the History of Ideas* 69 (July 2008): 395–417.
- Jardine, Lisa, and Alan Stewart. *Hostage to Fortune: The Troubled Life of Francis Bacon*. New York: Hill and Wang, 1999.
- Johns, Adrian. *The Nature of the Book: Print and Knowledge in the Making*. Chicago: University of Chicago Press, 1998.
- Jones, J. R., ed. *The Restored Monarchy, 1660–1680*. London: Macmillan, 1979.
- Joy, Lynn Sumida. *Gassendi the Atomist: Advocate of History in an Age of Science*. Cambridge: Cambridge University Press, 1987.
- Kamil, Neil. *Fortress of the Soul: Violence, Metaphysics, and Material Life in the Huguenots' New World, 1517–1751*. Baltimore: Johns Hopkins University Press, 2005.
- Kargon, Robert Hugh. *Atomism in England from Harriot to Newton*. Oxford: Clarendon Press, 1966.
- Kassell, Lauren. "Magic, Alchemy, and the Medical Economy in Early Modern England: The Case of Robert Fludd's Magnetical Medicine." In *Medicine and the Market in England and Its Colonies, c. 1450–c. 1850*, ed. Mark S. Jenner and Patrick Wallis, 88–107. New York: Palgrave Macmillan, 2007.

- . *Medicine and Magic in Elizabethan London: Simon Forman, Astrologer, Alchemist, and Physician*. Oxford: Clarendon Press, 2005.
- . “Reading for the Philosophers’ Stone.” In *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine, 132–50. Cambridge: Cambridge University Press, 2000.
- Kaufmann, Thomas DaCosta. *The Mastery of Nature: Aspects of Art, Science, and Humanism in the Renaissance*. Princeton: Princeton University Press, 1993.
- Kingdon, Robert M. *Geneva and the Coming of the Wars of Religion in France, 1555–1563*. Geneva: Librairie Droz, 1956.
- Kishlansky, Mark. *A Monarchy Transformed: Britain, 1603–1714*. New York: Penguin Books, 1996.
- Knecht, R. J. *The French Civil Wars*. New York: Longman, 2000.
- Knox, R. Buick. *James Ussher: Archbishop of Armagh*. Cardiff: University of Wales Press, 1967.
- Kristeller, Paul Oskar. *Renaissance Thought: The Classic, Scholastic, and Humanist Strains*. New York: Harper Torchbooks, 1961.
- Lake, Peter. “Calvinism and the English Church, 1570–1635.” *Past and Present* 114 (February 1987): 32–76.
- . “The Moderate and Irenic Case for Religious War: Joseph Hall’s *Via Media* in Context.” In *Political Culture and Cultural Politics in Early Modern England*, ed. Susan D. Amussen and Mark A. Kishlansky, 55–83. Manchester: Manchester University Press, 1995.
- . *Moderate Puritans and the Elizabethan Church*. Cambridge: Cambridge University Press, 1982.
- Lambert, Sheila. “Richard Montagu, Arminianism, and Censorship.” *Past and Present* 124 (August 1989): 36–68.
- Lamont, William M. “The Rise of Arminianism Reconsidered.” *Past and Present* 107 (May 1985): 227–31.
- Lee, Maurice, Jr. *Great Britain’s Solomon: James VI and I in His Three Kingdoms*. Urbana: University of Illinois Press, 1990.
- . “Scotland and the ‘General Crisis’ of the Seventeenth Century.” *Scottish Historical Review* 63 (October 1984): 136–54.
- . “Scotland, the Union, and the Idea of a ‘General Crisis.’” In *Scots and Britons: Scottish Political Thought and the Union of 1603*, ed. Roger A. Mason, 41–57. Cambridge: Cambridge University Press, 1994.
- Lemmi, Charles W. *The Classic Deities in Bacon: A Study in Mythological Symbolism*. Baltimore: Johns Hopkins University Press, 1933.
- . “Mythology and Alchemy in *The Wisdom of the Ancients*.” In *Essential Articles for the Study of Francis Bacon*, ed. Brian Vickers, 51–92. Hamden, Conn.: Archon Books, 1968.
- Lerner, Robert E. *The Powers of Prophecy*. Berkeley and Los Angeles: University of California Press, 1983.
- Levack, Brian P. *The Witch-Hunt in Early Modern Europe*. 3d ed. New York: Pearson/Longman, 2006.
- Levine, Joseph M. *Dr. Woodward’s Shield: History, Science, and Satire in Augustan England*. Berkeley and Los Angeles: University of California Press, 1977.
- Lindberg, David C. *The Beginnings of Western Science: The European Scientific Tradition in Philosophical, Religious, and Institutional Context, 600 B.C. to A.D. 1450*. Chicago: University of Chicago Press, 1992.
- Lindberg, David C., and Ronald L. Numbers, eds. *God and Nature: Historical Essays on the Encounter Between Christianity and Science*. Berkeley and Los Angeles: University of California Press, 1986.
- Linden, Stanton J. *Darke Hieroglyphicks: Alchemy in English Literature from Chaucer to the Restoration*. Lexington: University Press of Kentucky, 1996.
- . “Francis Bacon and Alchemy: The Reformation of Vulcan.” *Journal of the History of Ideas* 35 (October–December 1974): 547–60.
- Lindsey, Jack. *The Origins of Alchemy in Graeco-Roman Egypt*. London: Mueller, 1970.

- Lloyd, G. E. R. "Greek Cosmologies." In *Ancient Cosmologies*, ed. Carmen Blacker and Michael Loewe, 198–224. London: George Allen and Unwin, 1975.
- London, April. "Musaeum Tradescantianum and the Benefactors to the Tradescants' Museum." In *Tradescant's Rarities: Essays on the Foundation of the Ashmolean Museum, 1683*, ed. Arthur MacGregor, 24–39. Oxford: Oxford University Press, 1983.
- Long, Pamela O. *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance*. Baltimore: Johns Hopkins University Press, 2001.
- Louthan, Howard. *The Quest for Compromise: Peacemakers in Counter-Reformation Vienna*. Cambridge: Cambridge University Press, 1997.
- Love, Harold. *Scribal Publication in Seventeenth-Century England*. Oxford: Clarendon Press, 1993.
- Luck, George. *Arcana Mundi: Magic and the Occult in the Greek and Roman Worlds*. Baltimore: Johns Hopkins University Press, 1985.
- MacGregor, Arthur. "The Cabinet of Curiosities in Seventeenth-Century Britain." In *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey and Arthur MacGregor, 147–58. Oxford: Clarendon Press, 1985.
- MacIntosh, J. J. "Boyle on Epicurean Atheism and Atomism." In *Atoms, Pneuma, and Tranquility: Epicurean and Stoic Themes in European Thought*, ed. Margaret J. Osler, 197–219. Cambridge: Cambridge University Press, 1991.
- MacQueen, John. *Numerology: Theory and Outline History of a Literary Mode*. Edinburgh: Edinburgh University Press, 1985.
- Maltby, Judith. *Prayer Book and People in Elizabethan and Early Stuart England*. Cambridge: Cambridge University Press, 1998.
- Marotti, Arthur F. *Manuscript, Print, and the English Renaissance Lyric*. Ithaca: Cornell University Press, 1995.
- Martin, John. *Venice's Hidden Enemies: Italian Heretics in a Renaissance City*. Berkeley and Los Angeles: University of California Press, 1993.
- Martin, Julian. *Francis Bacon, the State, and the Reform of Natural Philosophy*. Cambridge: Cambridge University Press, 1992.
- . "Natural Philosophy and Its Public Concerns." In *Science, Culture, and Popular Belief in Renaissance Europe*, ed. Stephen Pumfrey, Paolo L. Rossi, and Maurice Slawinski, 100–118. Manchester: Manchester University Press, 1991.
- Massa, Daniel. "Giordano Bruno's Ideas in Seventeenth-Century England." *Journal of the History of Ideas* 38 (April–June 1977): 227–42.
- Matthews, Steven. *Theology and Science in Francis Bacon*. Aldershot, UK: Ashgate, 2008.
- McLean, Antonia. *Humanism and the Rise of Science in Tudor England*. London: Heinemann, 1972.
- Mendelsohn, J. Andrew. "Alchemy and Politics in England, 1649–1660." *Past and Present* 135 (May 1992): 30–78.
- Menninger, Karl. *Number Words and Number Symbols: A Cultural History of Numbers*. Translated by Paul Broneer. Cambridge: Harvard University Press, 1969.
- Merkel, Ingrid, and Allen G. Debus, eds. *Hermeticism and the Renaissance: Intellectual History and the Occult in Early Modern Europe*. Washington, D.C.: Folger Shakespeare Library, 1988.
- Michael, Emily, and Fred S. Michael. "Two Early Modern Concepts of Mind: Reflecting Substance vs. Thinking Substance." *Journal of the History of Philosophy* 27 (January 1989): 29–48.
- Millen, Ron. "The Manifestation of Occult Qualities in the Scientific Revolution." In *Religion, Science, and Worldview*, ed. Margaret J. Osler and Paul Lawrence Farber, 185–216. Cambridge: Cambridge University Press, 1985.
- Miller, Peter. *Peiresc's Europe: Learning and Virtue in the Seventeenth Century*. New Haven: Yale University Press, 2000.

- Milner, Benjamin. "Francis Bacon: The Theological Foundations of *Valerius Terminus*." *Journal of the History of Ideas* 58 (April 1997): 245–64.
- Milton, Anthony. "The Unchanged Peacemaker? John Dury and the Politics of Irenicism in England, 1628–1643." In *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication*, ed. Mark Greengrass, Michael Leslie, and Timothy Raylor, 95–117. Cambridge: Cambridge University Press, 1994.
- Montgomery, John Warwick. *Cross and Crucible: Johann Valentin Andreae (1586–1654), Phoenix of the Theologians*. 2 vols. The Hague: Martinus Nijhoff, 1973.
- . "Cross, Constellation, and Crucible: Lutheran Astrology and Alchemy in the Age of the Reformation." *Ambix* 11 (June 1963): 65–86.
- Moran, Bruce T. *The Alchemical World of the German Court: Occult Philosophy and Chemical Medicine in the Circle of Moritz of Hessen (1572–1632)*. Stuttgart: Franz Steiner Verlag, 1991.
- . *Andreas Libavius and the Transformation of Alchemy: Separating Chemical Cultures with Polemical Fire*. Sagamore Beach, Mass.: Science History Publications/USA, 2007.
- Morgan, John. "Puritanism and Science: A Reinterpretation." *Historical Journal* 22 (1979): 535–60.
- Mulryan, John. "Through a Glass Darkly": *Milton's Reinvention of the Mythological Tradition*. Pittsburgh: Duquesne University Press, 1996.
- Nauert, Charles G., Jr. *Agrippa and the Crisis of Renaissance Thought*. Urbana: University of Illinois Press, 1965.
- Newman, William R. "Alchemical and Baconian Views on the Art/Nature Division." In *Reading the Book of Nature: The Other Side of the Scientific Revolution*, ed. Allen G. Debus and Michael T. Walton, 81–90. Kirksville, Mo.: Sixteenth-Century Journal Publishers, 1998.
- . *Gehemical Fire: The Lives of George Starkey, an American Alchemist in the Scientific Revolution*. Cambridge: Harvard University Press, 1994.
- . *Promethean Ambitions: Alchemy and the Quest to Perfect Nature*. Chicago: University of Chicago Press, 2004.
- Newman, William R., and Lawrence M. Principe. *Alchemy Tried in the Fire: Starkey, Boyle, and the Fate of Helmontian Chymistry*. Chicago: University of Chicago Press, 2002.
- . "Some Problems with the Historiography of Alchemy." In *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, ed. Anthony Grafton and William R. Newman, 385–431. Cambridge: MIT Press, 2001.
- Nugent, Donald. *Ecumenism in the Age of the Reformation: The Colloquy of Poissy*. Cambridge: Harvard University Press, 1974.
- Nummedal, Tara. *Alchemy and Authority in the Holy Roman Empire*. Chicago: University of Chicago Press, 2007.
- O'Malley, Therese. "Introduction to John Evelyn and the 'Elysium Britannicum.'" In *John Evelyn's "Elysium Britannicum" and European Gardening*, ed. Therese O'Malley and Joachim Wolschke-Bulmahn, 9–33. Washington, D.C.: Dumbarton Oaks Research Library and Collection, 1998.
- Ong, Walter J. *Ramus: Method and the Decay of Dialogue*. Cambridge: Harvard University Press, 1958.
- Osler, Margaret J. *Divine Will and the Mechanical Philosophy: Gassendi and Descartes on Contingency and Necessity in the Created World*. Cambridge: Cambridge University Press, 1994.
- . "Eternal Truths and the Laws of Nature: The Theological Foundations of Descartes' Philosophy of Nature." *Journal of the History of Ideas* 46 (July–September 1985): 349–62.
- Ovenell, R. F. *The Ashmolean Museum, 1683–1894*. Oxford: Clarendon Press, 1986.
- Ozment, Steven. *The Age of Reform, 1250–1550: An Intellectual and Religious History of Late Medieval and Reformation Europe*. New Haven: Yale University Press, 1980.
- Pagel, Walter. *Paracelsus: An Introduction to Philosophical Medicine in the Era of the Renaissance*. 2d ed. New York: Karger, 1984.

- Palmer, Richard. "Pharmacy in the Republic of Venice." In *The Medical Renaissance of the Sixteenth Century*, ed. A. Wear, R. K. French, and I. M. Lonie, 100–117. Cambridge: Cambridge University Press, 1985.
- Park, Katherine. "The Organic Soul." In *The Cambridge History of Renaissance Philosophy*, ed. Charles B. Schmitt and Quentin Skinner, 464–84. Cambridge: Cambridge University Press, 1988.
- Parker, Geoffrey, and Lesley M. Smith, eds. *The General Crisis of the Seventeenth Century*. London: Routledge and Kegan Paul, 1978.
- Parry, Graham. *The Golden Age Restored: The Culture of the Stuart Court, 1603–42*. Manchester: Manchester University Press, 1981.
- . *The Trophies of Time: English Antiquarians of the Seventeenth Century*. Oxford: Oxford University Press, 1995.
- Partington, J. R. "Albertus Magnus on Alchemy." *Ambix* 1 (May 1937): 3–20.
- . "Trithemius and Alchemy." *Ambix* 2 (September 1938): 52–59.
- Patai, Raphael. *The Jewish Alchemists: A History and Source Book*. Princeton: Princeton University Press, 1994.
- Patterson, W. B. *King James VI and I and the Reunion of Christendom*. Cambridge: Cambridge University Press, 1997.
- Peck, Linda Levy. *Court Patronage and Corruption in Early Stuart England*. New York: Routledge, 1993.
- . *Northampton, Patronage, and Policy at the Court of James I*. Boston: Allen and Unwin, 1982.
- Petersson, R. T. *Sir Kenelm Digby, the Ornament of England, 1603–1665*. London: Jonathan Cape, 1956.
- Pocock, J. G. A. *The Ancient Constitution and the Feudal Law: A Study of English Historical Thought in the Seventeenth Century; A Reissue with a Retrospect*. Cambridge: Cambridge University Press, 1987.
- . *The Machiavellian Moment: Florentine Political Thought and the Atlantic Republic Tradition*. Princeton: University of Princeton Press, 1975.
- Poole, Robert, ed. *The Lancashire Witches: Histories and Stories*. Manchester: Manchester University Press, 2002.
- Poole, William. "Francis Lodwick's Creation: Theology and Natural Philosophy in the Early Royal Society." *Journal of the History of Ideas* 66 (April 2005): 245–63.
- Popkin, Richard H. *The History of Scepticism from Erasmus to Spinoza*. Berkeley and Los Angeles: University of California Press, 1979.
- . "Scepticism." In *The Encyclopedia of Philosophy*, vol. 7, ed. Paul Edwards. New York: Macmillan, 1972.
- Popper, Nicholas. "Abraham, Planter of Mathematics': Histories of Mathematics and Astrology in Early Modern Europe." *Journal of the History of Ideas* 67 (January 2006): 87–106.
- Potter, G. R. *Zwingli*. Cambridge: Cambridge University Press, 1976.
- Prest, John. *The Garden of Eden*. New Haven: Yale University Press, 1981.
- Principe, Lawrence M. *The Aspiring Adept: Robert Boyle and His Alchemical Quest*. Princeton: Princeton University Press, 1998.
- Quinn, Arthur. "On Reading Newton Apocalyptically." In *Millenarianism and Messianism in English Literature and Thought, 1650–1800: Clark Library Lectures, 1981–82*, ed. Richard H. Popkin, 176–92. Leiden: E. J. Brill, 1988.
- Rabb, T. K. *The Struggle for Stability in Early Modern Europe*. Oxford: Oxford University Press, 1976.
- Read, John. *Prelude to Chemistry*. London: G. Bell and Sons, 1936.
- . *Through Alchemy to Chemistry*. London: G. Bell and Sons, 1957.
- Rees, Graham. "Francis Bacon's Semi-Paracelsian Cosmology." *Ambix* 22 (July 1975): 81–101.

- . “Francis Bacon’s Semi-Paracelsian Cosmology and the Great Instauration.” *Ambix* 22 (November 1975): 161–73.
- Reeve, L. J. *Charles I and the Road to Personal Rule*. Cambridge: Cambridge University Press, 1989.
- Reeves, Marjorie. *The Influence of Prophecy in the Later Middle Ages: A Study in Joachimism*. Oxford: Clarendon Press, 1972.
- Robisheaux, Thomas. *The Last Witch of Langenburg: Murder in a German Village*. New York: W. W. Norton, 2009.
- Roper, Lyndal. *Witch Craze: Terror and Fantasy in Baroque Germany*. New Haven: Yale University Press, 2004.
- Rosin, Robert. *Reformers, the Preacher, and Skepticism: Luther, Brenz, Melancthon, and Ecclesiastes*. Mainz: Verlag Philipp von Zabern, 1997.
- Rossi, Paolo. *Francis Bacon: From Magic to Science*. Translated by Sacha Rabinovitch. Chicago: University of Chicago Press, 1968.
- Rowland, Ingrid D. “Abacus and Humanism.” *Renaissance Quarterly* 48 (Winter 1995): 695–727.
- Roy, Ian. “George Digby, Royalist Intrigue, and the Collapse of the Cause.” In *Soldiers, Writers, and Statesmen of the English Revolution*, ed. Ian Gentles, John Morrill, and Blair Worden, 68–90. Cambridge: Cambridge University Press, 1998.
- Rubin, Davida. *Sir Kenelm Digby, F.R.S., 1603–1665: A Bibliography Based on the Collection of K. Garth Huston, Sr., M.D.* San Francisco: Jeremy Norman, 1991.
- Rubin, Miri. *Corpus Christi: The Eucharist in Late Medieval Culture*. Cambridge: Cambridge University Press, 1992.
- Ruigh, Robert E. *The Parliament of 1624: Politics and Foreign Policy*. Cambridge: Harvard University Press, 1971.
- Russell, Conrad. *The Causes of the English Civil War*. Oxford: Oxford University Press, 1990.
- . “Divine Rights in the Early Seventeenth Century.” In *Public Duty and Private Conscience in Seventeenth-Century England*, ed. John Morrill, Paul Slack, and Daniel Woolf, 101–20. Oxford: Clarendon Press, 1993.
- , ed. *The Origins of the English Civil War*. New York: Barnes and Noble, 1973.
- . *Parliaments and English Politics*. Oxford: Clarendon Press, 1982.
- Salmon, J. H. M. *Society in Crisis: France in the Sixteenth Century*. New York: St. Martin’s Press, 1975.
- Sampley, J. Paul. “The First Letter to the Corinthians: Introduction, Commentary, and Reflections.” In *The New Interpreter’s Bible: A Commentary in Twelve Volumes*, vol. 10, ed. Leander E. Keck et al., 773–1003. Nashville: Abingdon Press, 2002.
- Sarasohn, Lisa T. “Motion and Morality: Pierre Gassendi, Thomas Hobbes, and the Mechanical World-View.” *Journal of the History of Ideas* 46 (July–September 1985): 363–79.
- Schama, Simon. *The Embarrassment of Riches*. Berkeley and Los Angeles: University of California Press, 1988.
- Schmitt, Charles B., and Quentin Skinner, eds. *The Cambridge History of Renaissance Philosophy*. Cambridge: Cambridge University Press, 1988.
- Scholem, Gershom. *Kabbalah*. New York: Quadrangle/New York Times Book Co., 1974.
- Schuler, Robert M. “Some Spiritual Alchemies of Seventeenth-Century England.” *Journal of the History of Ideas* 41 (April–June 1980): 293–318.
- Scott, Jonathan. *England’s Troubles: Seventeenth-Century English Political Instability in European Context*. Cambridge: Cambridge University Press, 2000.
- Seaward, Paul. *The Cavalier Parliament and the Reconstruction of the Old Regime*. Cambridge: Cambridge University Press, 1988.
- . *The Restoration*. London: Macmillan Education, 1991.
- Secret, François. *Les kabbalistes chrétiens de la Renaissance*. Paris: Dunod, 1964.

- Shackelford, Jole. *A Philosophical Path for Paracelsian Medicine: The Ideas, Intellectual Context, and Influence of Petrus Severinus, 1540–1602*. Copenhagen: Museum Tusulanum Press, 2004.
- Shapin, Steven. *A Social History of Truth: Civility and Science in Seventeenth-Century England*. Chicago: University of Chicago Press, 1994.
- Shapin, Steven, and Simon Schaffer. *Leviathan and the Air Pump: Hobbes, Boyle, and the Experimental Life*. Princeton: Princeton University Press, 1985.
- Shapiro, Barbara, and Robert G. Frank Jr. *English Scientific Virtuosi in the Sixteenth and Seventeenth Centuries*. Los Angeles: Clark Library, 1979.
- Sharpe, Kevin. *The Personal Rule of Charles I*. New Haven: Yale University Press, 1992.
- . *Politics and Ideas in Early Stuart England*. London: Pinter, 1989.
- . *Reading Revolutions: The Politics of Reading in Early Modern England*. New Haven: Yale University Press, 2000.
- . *Sir Robert Cotton, 1586–1631: History and Politics in Early Modern England*. Oxford: Oxford University Press, 1979.
- Shea, William R. *The Magic of Numbers and Motion: The Scientific Career of René Descartes*. Canton, Mass.: Science History Publications, 1991.
- Sherman, William H. *John Dee: The Politics of Reading and Writing in the English Renaissance*. Amherst: University of Massachusetts Press, 1994.
- Siebert, Frederick Seaton. *Freedom of the Press in England, 1476–1776: The Rise and Decline of Government Controls*. Urbana: University of Illinois Press, 1952.
- Smith, Abraham. “The Second Letter to the Thessalonians: Introduction, Commentary, and Reflections.” In *The New Interpreter’s Bible: A Commentary in Twelve Volumes*, vol. 11, ed. Leander E. Keck et al., 741–69. Nashville: Abingdon Press, 2000.
- Smith, Pamela. “Alchemy as a Language of Mediation at the Habsburg Court.” *Isis* 85 (March 1994): 1–25.
- . *The Body of the Artisans: Art and Experience in the Scientific Revolution*. Chicago: University of Chicago Press, 2004.
- . *The Business of Alchemy: Science and Culture in the Holy Roman Empire*. Princeton: Princeton University Press, 1994.
- Southgate, Beverly. “‘Whimseys of . . . that great Virtuoso’: The Thought of Sir Kenelm Digby.” In *Death, Passion, and Politics: Van Dyck’s Portraits of Venetia Stanley and George Digby*, ed. Ann Sumner, 45–53. London: Dulwich Picture Gallery, 1995.
- Sprunger, Keith L. *Trumpets from the Tower: English Puritan Printing in the Netherlands, 1600–1640*. Leiden: E. J. Brill, 1994.
- Steenberghen, Fernand van. *Aristotle in the West*. Translated by Leonard Johnston. Louvain: Nauwelaerts, 1955.
- Stephens, Walter. *Giants in Those Days: Folklore, Ancient History, and Nationalism*. Lincoln: University of Nebraska Press, 1989.
- Sutherland, James. *The Restoration Newspaper and Its Development*. Cambridge: Cambridge University Press, 1986.
- Szulakowska, Urszula. *The Alchemy of Light: Geometry and Optics in Late Renaissance Alchemical Illustration*. Leiden: E. J. Brill, 2000.
- Taylor, F. Sherwood. *The Alchemists*. New York: Collier Books, 1962.
- . “Thomas Charnock.” *Ambix* 3–4 (December 1946): 148–76.
- Thacker, Christopher. *The History of Gardens*. Berkeley and Los Angeles: University of California Press, 1979.
- Thomas, Keith. *Man and the Natural World*. London: Allen Lane, 1983.
- . *Religion and the Decline of Magic: Studies in Popular Beliefs in Sixteenth- and Seventeenth-Century England*. London: Weidenfeld and Nicolson, 1971.
- Thompson, E. P. *The Making of the English Working Class*. New York: Pantheon Books, 1964.
- Thorndike, Lynn. *A History of Magic and Experimental Science*. 8 vols. New York: Macmillan, 1923–58.

- Tilton, Hereward. *The Quest for the Phoenix: Spiritual Alchemy and Rosicrucianism in the Work of Count Michael Maier (1569–1622)*. Berlin: Walter de Gruyter, 2003.
- Trevor-Roper, Hugh. *Archbishop Laud: 1573–1645*. London: Macmillan, 1940.
- . *Religion, the Reformation, and Social Change*. London: Macmillan, 1967.
- Trinkaus, Charles. In *Our Image and Likeness: Humanity and Divinity in Italian Humanist Thought*. London: Constable, 1970.
- Turner, Gerard. “The Cabinet of Experimental Philosophy.” In *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe*, ed. Oliver Impey and Arthur MacGregor, 214–22. Oxford: Clarendon Press, 1985.
- Tyacke, Nicholas. *Anti-Calvinists: The Rise of English Arminianism, c. 1590–1640*. Oxford: Oxford University Press, 1987.
- . “Puritanism, Arminianism, and Counter Revolution.” In *The Origins of the English Civil War*, ed. Conrad Russell, 119–43. New York: Barnes and Noble, 1973.
- . “Science and Religion at Oxford Before the Civil War.” In *Puritans and Revolutionaries: Essays in Seventeenth-Century History Presented to Christopher Hill*, ed. Donald Pennington and Keith Thomas, 73–93. Oxford: Clarendon Press, 1978.
- Tyacke, Nicholas, and Peter White. “Debate: The Rise of Arminianism Reconsidered.” *Past and Present* 115 (May 1987): 201–29.
- Urbach, Peter. *Francis Bacon’s Philosophy of Science: An Account and a Reappraisal*. La Salle, Ill.: Open Court, 1987.
- Van Leeuwen, Henry G. *The Problem of Certainty in English Thought: 1630–1690*. The Hague: Martinus Nijhoff, 1970.
- Veevers, Erica. *Images of Love and Religion: Queen Henrietta Maria and Court Entertainments*. Cambridge: Cambridge University Press, 1989.
- Vickers, Brian. “The ‘New Historiography’ and the Limits of Alchemy.” *Annals of Science* 65 (January 2008): 127–56.
- Wadkins, Timothy H. “King James I Meets John Percy, S.J. (25 May 1622): An Unpublished Manuscript from the Religious Controversies Surrounding the Countess of Buckingham’s Conversion.” *Recusant History* 19 (1988): 146–54.
- Walker, D. P. “Kepler’s Celestial Music.” *Journal of the Warburg and Courtauld Institutes* 30 (1967): 228–50.
- Wallace, Dewey D., Jr. *Puritans and Predestination: Grace in English Protestant Theology, 1525–1695*. Chapel Hill: University of North Carolina Press, 1982.
- Walsham, Alexandra, and Julia Crick. “Introduction: Script, Print, and History.” In *The Uses of Script and Print, 1300–1700*, ed. Julia Crick and Alexandra Walsham, 1–26. Cambridge: Cambridge University Press, 2004.
- Walton, Michael T. “Genesis and Chemistry in the Sixteenth Century.” In *Reading the Book of Nature: The Other Side of the Scientific Revolution*, ed. Allen G. Debus and Michael T. Walton, 1–14. Kirksville, Mo.: Sixteenth-Century Journal Publishers, 1998.
- . “John Dee’s Monas Hieroglyphica: Geometrical Cabala.” *Ambix* 23 (July 1976): 116–23.
- Webster, Charles. *From Paracelsus to Newton: Magic and the Making of Modern Science*. Cambridge: Cambridge University Press, 1982.
- . *The Great Instauration: Science, Medicine, and Reform, 1626–1660*. London: Duckworth, 1975.
- . *Paracelsus: Medicine, Magic, and Mission at the End of Time*. New Haven: Yale University Press, 2008.
- Webster, Tom. *Godly Clergy in Early Stuart England: The Caroline Puritan Movement, c. 1620–1643*. Cambridge: Cambridge University Press, 1997.
- Welch, Martin. “The Foundation of the Ashmolean Museum.” In *Tradescaent’s Rarities: Essays on the Foundation of the Ashmolean Museum, 1683*, ed. Arthur MacGregor, 40–58. Oxford: Oxford University Press, 1983.
- West, Muriel. “Notes on the Importance of Alchemy to Modern Science in the Writings of Francis Bacon and Robert Boyle.” *Ambix* 9 (June 1961): 102–14.



- Westfall, Richard S. "The Rise of Science and the Decline of Orthodox Christianity: A Study of Kepler, Descartes, and Newton." In *God and Nature: Historical Essays on the Encounter Between Christianity and Science*, ed. David C. Lindberg and Ronald L. Numbers, 218–37. Berkeley and Los Angeles: University of California Press, 1986.
- Westman, Robert S. "Nature, Art, and Psyche: Jung, Pauli, and the Kepler-Fludd Polemic." In *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers, 177–229. Cambridge: Cambridge University Press, 1984.
- Wheelock, Arthur J. *A Collector's Cabinet*. Washington, D.C.: National Gallery of Art, 1998.
- White, Peter. *Predestination, Policy, and Polemic: Conflict and Consensus in the English Church from the Reformation to the Civil War*. Cambridge: Cambridge University Press, 1992.
- . "The Rise of Arminianism Reconsidered." *Past and Present* 101 (November 1983): 34–54.
- Whitney, Charles. *Francis Bacon and Modernity*. New Haven: Yale University Press, 1986.
- Willard, Thomas. "Alchemy and the Bible." In *Centre and Labyrinth: Essays in Honour of Northrop Frye*, ed. Eleanor Cook, Chaviva Hosek, Jay Macpherson, Patricia Parker, and Julian Patrick, 115–27. Toronto: University of Toronto Press, 1983.
- Wippel, John F. "The Condemnations of 1270 and 1277 at Paris." *Journal of Medieval and Renaissance Studies* 7 (1977): 169–201.
- Wittkower, Rudolph. *Allegory and the Migration of Symbols*. Boulder, Colo.: Westview Press, 1977.
- . *Selected Lectures of Rudolph Wittkower: The Impact of Non-European Civilizations on the Art of the West*. Cambridge: Cambridge University Press, 1989.
- Woolrych, Austin. *Britain in Revolution: 1625–1660*. Oxford: Oxford University Press, 2002.
- Wormald, B. H. G. *Francis Bacon: History, Politics, and Science, 1561–1626*. Cambridge: Cambridge University Press, 1993.
- Yates, Frances A. *Giordano Bruno and the Hermetic Tradition*. London: Routledge and Kegan Paul, 1964.
- . *The Rosicrucian Enlightenment*. London: Routledge and Kegan Paul, 1972.
- . *Theatre of the World*. Chicago: University of Chicago Press, 1969.
- Young, J. T. *Faith, Medical Alchemy, and Natural Philosophy: Johann Moriaen, Reformed Intellect, and the Hartlib Circle*. Brookfield, Vt.: Ashgate, 1998.
- Zagorin, Perez. *Francis Bacon*. Princeton: Princeton University Press, 1998.
- . *Ways of Lying: Dissimulation, Persecution, and Conformity in Early Modern Europe*. Cambridge: Harvard University Press, 1990.

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