

MASTERS OF FIRE:
ITALIAN ALCHEMISTS IN THE COURT
OF PHILIP II

WILLIAM EAMON
NEW MEXICO STATE UNIVERSITY

King Philip II of Spain has been called many things. To contemporaries in the Catholic world, whether in Italy, Spain, or Germany, he was “the Most Catholic King” of Europe. His biographers called him “the Prudent” because they saw in him the qualities of caution and careful decision-making.¹ The seventeenth-century chronicler Baltasar Porreño represented him as a second Solomon for his wisdom and a man whose pure Catholic faith kept him free from superstition.²

Protestants in northern Europe saw a completely different Philip. William of Orange, the leader of the Dutch Revolt against Spanish rule, thought that the Spanish monarch was in league with the devil. To others, he was a fanatical Catholic who submitted his people to the yoke of the dreaded (and much exaggerated) Spanish Inquisition.³ To the nineteenth-century American historian Walter Prescott, Philip II, whose biography Prescott published in 1855, was evil incarnate, a king who “nurtured schemes of mad ambition” and denied Spain the opportunity to join the modern world.⁴ Within Spain, the image of Philip as a despot appeared as early as 1591, when a street satire published during a popular uprising at Zaragoza condemned the king as “a corrupt tyrant.”⁵ Modern defenders of regional liberties in the Iberian Peninsula remember Philip as a cruel tyrant who used his armies to repress liberties. Philip’s merciless repression of the Zaragoza revolt still stings in Aragon, so much so that a prominent historian recently called him “a gravedigger.”⁶

King Philip has been called many things: a prudent monarch, a Solomon of princes, a pious king, a superstitious fanatic, a devil, a tyrant, a despot, a gravedigger; but rarely has he been called a modernizing prince.⁷

And yet, by the standards of early modernity, there is no question that Philip was a modernizing prince. Nothing was more quintessentially modern than his ambition to pursue a “grand strategy” to create a world

empire.⁸ Although some of his imperial designs failed, others spectacularly succeeded. As the seventeenth-century English antiquarian William Camden grudgingly admitted, Philip became ruler of the first empire in history upon which the sun never set.⁹ Even those imperial projects that did fail—most notably the doomed “Invincible Armada” that he mounted against England—until then the largest seaborne military operation in history—seem to exhibit all of the characteristics of the ambition and attention to bureaucratic detail that characterize modern Great Powers.¹⁰ In creating bureaucratic institutions to govern his vast empire, Philip anticipated the rulers of modern states. He created a huge bureaucracy staffed by hundreds of officials that produced thousands of pages reports, memoranda, and correspondence: it is not for nothing that he has been called “the paper prince.”¹¹ And, not least, as that enduring monument, the Escorial, attests, Philip had an abiding interest in architecture as an expression of the state. His receptivity to the introduction of classical architectural ideas into Spain was certainly modern for the age, and part and parcel of his modernizing state program.¹²

Like other modernizing princes, Philip relied on foreign expertise for the latest advances in science and technology to improve conditions in the realm. It was a policy repeated by other rulers of the day. During Elizabeth’s reign, English mine owners had to rely on German expertise, since hardly anyone outside the German-speaking territories of Central Europe had mastered the complicated body of knowledge and skills required to mine and smelt copper and other ores. And without Spanish expertise in navigation acquired in Spain’s renowned Casa de Contratación by explorers such as Sebastian Cabot and Stephen Borough, it is difficult to see how England could have embarked on its own program of overseas expansion. Borrowing expertise was one of the early modern monarch’s most important tools of modernization.¹³

Because he governed much of Italy, and because Italy was Catholic, it was natural that Philip should turn to his possessions in the Italian peninsula for expert advice. In the 1560s, he invited Giovanni Battista Gesio, a native of Naples, to provide expertise in cosmography, astrology, and mathematics. Gesio spent several years in Philip’s court and gave the king frequent astrological advice. In 1578, he sent the king a memorandum demonstrating that the Kingdom of Portugal belonged to Philip “by laws natural and divine.” Later, he advised Philip that the Philippines were strategically as important as Flanders or Italy.¹⁴ To train Spanish gunners, Philip brought Giuliano Firuffino from Milan in 1585 to teach at the military school in Burgos; while for expertise in shipbuilding, he relied on Genoese craftsmen. By the 1580s, over 150 Genoese carpenters and

caulkers had been brought to the royal arsenal. Of the six regularly employed master craftsmen at the Barcelona arsenal in the 1570s, only one was a Spaniard—the rest were Italians—and by the 1580s, over 150 Genoese carpenters and caulkers had been brought to the arsenal.¹⁵

Philip's ambassadors continually sent back news about Italian expertise. When he learned from the embassy in Venice that a certain Orogio of Vicenza, a military engineer, was unhappy working for the Republic of Venice and would be willing to serve Philip for the right price, the king entered into secret negotiations to hire him. Philip, who was willing to pay high salaries to get the best talent, was assured by the Venetian ambassador that Orogio "is reputed to know more about the art of fortification than anyone in Italy."¹⁶

It was no less the case with alchemy. Like many Renaissance princes, Philip saw alchemy as a practical science that might be used to increase the wealth and well-being of the realm.¹⁷ It is also known that the king himself engaged in the art.¹⁸ Chronically short of money to finance his empire, he sought an alchemical remedy for his financial problems.¹⁹ It was not long before foreigners learned of Philip's alchemical interests and began making their way to Madrid in the hope of securing the king's patronage. In 1569, the Roman adept Marco Antonio Bufale came to Madrid offering Philip his alchemical secret to transmute base metals into gold; but, he complained, he was kept waiting for three months without ever hearing whether the king was interested.²⁰

Probably he wasn't. By then Philip's confidence in the possibility of making precious metals alchemically was shaken by the results of experiments conducted under his supervision in the early 1560s. Time and again he would turn away alchemists with similar promises. Yet he did not lose faith in alchemy entirely. Only by this time his alchemical interests focused, almost single-mindedly, on a different kind of philosopher's stone: the one that might serve as a panacea to cure all illnesses. Philip's health had never been good, and it began to deteriorate in the 1560s, when he suffered his first attacks of gout. And it was not just his own health that concerned him: the infante Fernando, the male heir to the throne, was also unwell, as were other members of the royal family.

As Mar Rey Bueno has shown, the royal family had long been interested in the manufacture of distilled waters. Prince Carlos was especially fond of cinnamon water, while Philip's sister, Doña Juana, had an almost insatiable appetite for rosewater. More than 300 liters of distilled waters were shipped to the royal palace every year, most made of the myriad variety of roses grown in the royal gardens at Aranjuez.²¹ To meet the court's demand for distilled waters, in 1564 Philip established the

office of Royal Distiller (*distilador real*) and appointed a Fleming, Francis Holbeeck, to serve in the post.²²

By the 1570s, court's interest in distillation shifted from a concentration on the manufacture of distilled waters to the manufacture of medicinal quintessences and, in particular, the quest for a universal panacea. Philip's belief in the possibility of obtaining such a wonder drug was fueled by his intense interest in what he and his contemporaries believed were the alchemical doctrines of the thirteenth-century Majorcan philosopher and mystic Ramon Lull. Although we now know that the alchemical writings attributed to Lull were spurious, no one in the sixteenth century doubted their authenticity.²³ Although King Philip had learned to be wary of gold-making alchemy—alchemical fraud was always a danger, as his cousin, the Holy Roman Emperor Rudolf II, could have told him—he was completely unsuspecting when it came to the grandiose claims of the pseudo-Lullian kind.²⁴

Central to pseudo-Lull's art of alchemy was the elixir, or philosopher's stone, a marvelous agent of transmutation that perfected metals and acted as a medical panacea.²⁵ Pseudo-Lull made extravagant claims for the alchemical elixir. It could be used to transform base metals into gold and to extract quintessences that preserve the body and prolong life. Pseudo-Lull, whoever he was, even thought that alchemy could be used to convert the infidels. Alchemy's "Promethean ambition"—as William Newman aptly characterizes it—to perfect nature in all its aspects certainly found expression in the pseudo-Lull's doctrines.²⁶

King Philip was a passionate adherent of Lull's philosophy. Although we do not know exactly when his curiosity about Lull's doctrines originated, it was certainly before 1576, when he already had a sizeable collection Lull's books in the library at the Escorial. By 1580, he was consulting with the Majorcan scholar Juan Seguí about establishing colleges dedicated to Lullist philosophy throughout the kingdom.²⁷ Whether the king saw in Lull's doctrine the key to universal knowledge, a means of converting the infidels, or the secret to the philosopher's stone is unclear. What is known is that by the 1570s, his court was a center of Lullist philosophical activity, and that pseudo-Lullian works made up a sizeable part of his collection of alchemical treatises.²⁸ Moreover, Philip vigorously promoted the manufacture of Lullian quintessences. Although he had grown skeptical of gold-making, he retained his faith in the medicinal possibilities of alchemy. In 1572, he had a distillation laboratory built at the royal palace designed specifically for manufacturing quintessences. Not long after, Italian alchemists and distillers, particularly

from the Kingdom of Naples, one of the leading centers of Lullism in Europe, began migrating to the court.²⁹

Information about the foreign alchemists who visited Philip's court is scarce. Most of the archival documents have been uncovered by Mar Rey Bueno in her masterful study, *Los señores del fuego*. The archival documents enable us to identify many of the alchemists who held official posts in the king's court; but the archives do not reveal much about their experiences in the court or, for that matter, the experiments they made there. For that, we must look elsewhere.

Fortunately, we have a fairly detailed record of one of the most prominent Italian visitors to Philip's court: the Bolognese surgeon Leonardo Fioravanti.³⁰ Fioravanti spent about a year in Spain in 1576-77, most of that period in Madrid, where he was a frequent visitor to the royal court. His account of his sojourn is contained in his book, *Della fisica*, which he published after he returned to Italy. Although, as I will point out later, he left a lot out, his description is an important personal record of alchemical practice in King Philip's court.

When he arrived in Spain in 1576, Fioravanti was already a famous empirical healer, known throughout the Mediterranean world for his unorthodox medical doctrines and his scathing critique of the medical tradition. Almost sixty years old, he was nearing the end of a long and controversial career as the proponent of what he called the "new way of healing." His patent medicines, which made up the core of his "new way," were sold in pharmacies throughout Italy and were a standard part of the apothecary's stock. His disputes with the medical establishment were legendary, and he had disciples as far away as England, where the London apothecary John Hester sold an assortment of his nostrums at his pharmacy in Paul's Wharf.³¹

Long before moving to Madrid, Fioravanti was well known in Spanish circles. Having served as a personal physician to the Spanish viceroys of Sicily and Naples during the 1540s, he had known numerous Spanish officers and royal officials. In 1550, he served as a surgeon in the imperial navy during the victorious siege of the north African city of Mahdiya, then a stronghold of the Turkish pirate Dragut.³² News of the victory in Africa was greeted with jubilation in Spain and Fioravanti's service to the crown would be remembered years later in Madrid.³³ By the time he made his journey to Spain, his writings were also widely known in that country; the king himself had four of Fioravanti's books in his library at the Escorial.³⁴ A devotee of alchemical medicine, he was an ardent proponent of distillation, then regarded by many as the most advanced method of manufacturing drugs.³⁵

Fioravanti began his study of alchemy in the 1540s in Naples, when he was in the service of the Spanish Viceroy, Don Pedro of Toledo. His residence near the Castel Nuovo became a center of experimental activity, where, he reported, “alchemists and distillers from various nations practiced.”³⁶ These individuals, many of whom were Spaniards, made up what Fioravanti later described as an “academy” that met in his house to do alchemical experiments.³⁷ He continued his alchemical experiments after he moved to Venice in 1558, and it was there that he met Ettore Ausonio, a little known but prolific natural philosopher from Milan. Ausonio, a fervent advocate of pseudo-Lullian alchemy, evidently introduced Fioravanti to the alchemical works attributed to Lull and to the legend surrounding Lull as an alchemist.³⁸ Prior to meeting Ausonio, Fioravanti was a practical alchemist whose principal interest had been making new drugs through distillation. In meeting Ausonio, he found a theory that matched his experimental practice.

Leonardo Fioravanti looked to Spain with wide open eyes, and he was not disappointed. In 1576, writing from Milan, he contacted the Viceroy of Naples through his agent and reminded him of the service that he had rendered to the emperor, King Philip’s father, during the African war. With typical bravado, he went on to say that, since then he had discovered many new secrets, which he promised to reveal as well as to offer his services to the king as a military surgeon. He would do this, the agent reported, “without pay, curing the sick and wounded if Your Majesty would do him the favor of granting him the title of Protomedico and Provider of Health in Italy without obligation to demonstrate his title and degrees to any college or Protomedico of any city.”³⁹ Although King Philip did not grant this audacious request (nor did he appoint Fioravanti to this nonexistent post), he did invite the surgeon to the court in order to demonstrate his cures and experiments. Fioravanti eagerly accepted the appointment.

Fioravanti quickly made his way into the alchemical community at Philip’s court. There he encountered numerous Italians and soon gathered around himself a circle of devoted followers. The group met weekly to discuss their alchemical experiments, he reports, and to talk about “the true medicine and surgery”—doubtless meaning Fioravanti’s “new way of healing.”⁴⁰ The Bolognese surgeon Giovanni Angelo Santini, whom Fioravanti identifies as *mio creato*, meaning his servant or laboratory assistant, was part of the group.⁴¹ This “*alchimista terribilissimo*” was so adept at making drugs that Fioravanti compared him to the greatest alchemists of all time, Ramon Lull, Arnald of Villanova, John of Rupescissa, and Paracelsus.⁴² Another Italian disciple, Agostino Bravo,

gained the nickname "*diabolico*" because of his familiarity with alchemical furnaces. "He knows more about fire than all the devils in hell," Fioravanti enthusiastically proclaimed.⁴³

Fioravanti's alchemical circle also included Spaniards. Juan Cornejo, a physician from Cordoba and one of the hypochondriac king's legion of doctors, was one of them. A few years later, Cornejo wrote a treatise on making potable gold entirely out of plant substances which supposedly relieved the king's gout so well that Cornejo dedicated the printed version of the treatise to the Pope.⁴⁴ Another Spaniard, the physician Juan Fernández, had offered his services to the king as early as 1572, when Philip's royal secretary, Antonio Gracián, reported that, after years of labor and considerable expense, the alchemist had "discovered the secret" for transmuting base metals into gold. The king was skeptical of the claim. "I have always regarded this as a hoax," Philip replied. Yet he asked Gracián not to send Fernández away, but to put the alchemist to work and to report back "when he has brought it to completion, which I am sure he never will."⁴⁵ The letter from Gracián and the king's reply have been interpreted to indicate Philip's hostility toward alchemy; yet the fact that Fernández was still practicing alchemy in Philip's court in 1576 and was active in Fioravanti's circle seems to suggest otherwise.

Also present at Philip's court, and presumably a member of Fioravanti's circle, was an Italian aristocrat named Lorenzo Granita, a native of Salerno. Fioravanti claims that Granita, who he says was the equal of Ramon Lull, Arnald of Villanova, and John of Rupescissa, showed Fioravanti a method for making a philosopher's stone that would transform any metal into the finest twenty-two carat gold.⁴⁶ Fioravanti does not claim that Granita actually made gold in his presence; instead, he reports, Granita showed him a manuscript containing a Spanish poem that held the secret of the philosopher's stone. Fioravanti, according to his own admission, stole the manuscript and reprinted the verses at the end of *Della fisica* so that anyone might learn how to make gold.

The poem has been recently studied by Elena Castro and José Rodríguez, who identify it as the product of an adept from Valencia called Luis de Centelles and written between 1550 and 1560.⁴⁷ Although Fioravanti calls the work a "recipe" for making gold, it is in fact an elaborate allegorical poem that uses the analogy of courtly love to symbolize an alchemical process that results in the "perfection" of matter. The theme of the poem is the devotion of the poet to a woman—"who dwells in the heavens and is, without doubt, the daughter of the Sun" (*Toma la dama que mora en el cielo | ques hija del sol sin duda ninguna*)—which symbolizes prime matter.⁴⁸ Just as, through a series of displays of

devotion, the poet's love ascends and is perfected, the poet-chemist submits matter to a series of alchemical manipulations and converts it into something ideal and perfect. The symbolic "matrimony between man and woman" (*matrimonio de hombre y muxer*) becomes a metaphor of the alchemist operating on matter. Strongly influenced by the alchemical writings attributed to Ramon Lull and Arnald of Villanova, the poem describes a progression of operations that parallel those detailed in the *Testamentum* of pseudo-Ramon Lull—*solutio*, *ablutio*, *congelatio*, *fixatio*, and *multiplicatio*—leading to the elixir, a "medicine" of transmutation and universal healing.⁴⁹ It is far from clear whether Fioravanti understood these obscure allegorical verses, for he made no effort whatsoever to explicate them. Nevertheless, he could not conceal his enthusiasm for having discovered—or, as he admitted, stolen—the secret that all the alchemists had been looking for.

There is in Fioravanti's account—as in all of his writings—a certain amount of hyperbole. It is difficult to take his word at face value. Indeed, *Della fisica* is a characteristic example of his supreme skill at self-fashioning. For all that we can tell from reading the work, he was accepted in Philip's court—for that matter, in all of Spain—as a prophet of a new art of healing. Yet behind this rosy picture there is another story, dark and filled with court intrigue. As it turns out, despite the royal family's enthusiasm for distilled essences, the alchemists were not received with universal approval in the court. In fact, the foreigners who arrived in Madrid touting obscure Lullian doctrines and newfangled ways of making drugs drew the ire of powerful court physicians. Fioravanti, one of the most prominent foreign alchemists in Philip's court, was caught in the net.

Part of the story, although certainly not all of it, is told in a deposition that Fioravanti gave to the Royal Protomedicato in response to charges against him that he had been practicing medicine illegally in Spain and, with his novel and unorthodox cures, had poisoned the servant of one of the king's courtiers.⁵⁰ The man who would judge Fioravanti was Prince Carlos's personal physician, Don Diego Olivares, the sworn enemy of the alchemists. Olivares was intensely jealous of the alchemists who had gained the king's favor. He aimed to rid the court of the foreigners, who [he said] "come in through the back door and leave through the front" (*entran por la manga y salen por el cabezón*).⁵¹ If previously Fioravanti could brush off such accusations with bravado and bold challenges, this time he was in real trouble.

The trial started out badly for Fioravanti and the circumstances did not improve. In the first place, he was plainly guilty of at least two of the

charges against him, namely, of practicing without a degree from a Spanish university and of manufacturing his own medicines rather than having them made by pharmacists. According to Castilian law, only those who had graduated from one of the three Castilian universities, Valladolid, Salamanca, or Alcalá, were legally authorized to practice medicine in the Kingdom of Castile. In addition, they had to pass an examination administered by the Protomedicato. Fioravanti had done neither. Hence, he had obviously been practicing medicine without proper authorization. The Royal Protomedicato strictly forbade unlicensed practitioners and fined them stiffly: the penalty for practicing without a license was a 6,000 *maravedís*, about the equivalent of six months wages for a skilled pressman. In addition, as Fioravanti tells it in his deposition, addressed to the Royal *Fiscál*, Ramón Martín, who was charged with prosecuting the case, “I am charged with making harmful cures with my medicaments, and with using lethal drugs to poison Tristan de la Torre’s servant.”⁵² The last charge accused him, rather ambiguously, of practicing surgery “against the precepts of the authorities.”

Fioravanti countered the charges with a spirited defense—on one hand pleading ignorance of the laws and, on the other, arguing that even if he did break the law, it was for the good of the realm. After all, he asserted, his “new way of healing” was superior to the methods practiced by the Spanish physicians. He opened his defense with a startling claim. “In response to the accusations made against me by Señor Martín, I say that the contrary is true of every one of them,” he pronounced. “I say further that His Majesty’s court should acquit me of each and every one of the charges and set me free and allow me to practice freely anywhere in this realm where I may be called.” As for violating the laws against practicing medicine without a license, “I knew nothing of these laws. If I broke any law, it’s because I’m a foreigner newly arrived in these parts and I’m not familiar with the laws of the land.”

Of course he was being disingenuous. Having lived in Naples and Milan, he had plenty of experience with the Spanish system of medical regulation. It is impossible to believe that he would not have assumed that similar laws applied in Spain, as they did everywhere in Spanish Italy. Perhaps he felt that his proximity to the court would protect him. If so, he was mistaken. His plea that he was an inexperienced foreigner must have fallen on deaf ears.

Fioravanti responded to the remaining charges in his customary way: he went on the attack, boldly proclaiming that his methods were superior to those of the Spanish physicians, because his ways were nature’s ways. “If Tristan’s servant died while in my care, it wasn’t because of the way I

treated him but because of his grave and mortal illness, and because afterwards he was treated by other doctors who didn't understand his sickness and applied remedies contrary to mine." He went on in a theological vein:

Death is natural. To die and to cure are in God's hands, not the hands of doctors or in the power of medicines. If it were not so, men wouldn't even recognize God as our Lord but would consider themselves as Gods on earth. Being mortal, it's necessary that men die when their hour comes. God does his will. People die every day, and the doctors who treat them shouldn't be blamed. To believe otherwise is contrary to the Holy Catholic Faith.

As for his titles, he could truthfully say that his degrees came from one of Europe's most respected medical schools, even if it was Italian and not Castilian. "When you consider that I have the titles of Doctor in Physic and Surgery from universities as famous as Bologna and Naples," he argued, "naturally I didn't think it would be necessary to have any other license. I've been practicing with these degrees for more than forty years, all the while doing good works for the poor, for the love of God, so why would such a license be necessary? If I erred, I erred out of ignorance, not knowing the law."⁵³

The court rejoined that, since Fioravanti was ignorant of Latin, his degrees could not possibly be legitimate. He did not claim to know Latin, Leonardo responded. Besides, "Speaking in Latin is no proof that you know medicine or how to heal." All the authorities wrote in their own mother tongues, Hippocrates and Galen in Greek, Avicenna in Arabic, and so on. "For medicine originates not in books but in experience, which various authors later wrote down in their own language and not in Latin. Afterwards their books were translated from Arabic and Greek into Latin, because in those times the Latin language was more common and universal." He continued:

Truthfully, I haven't studied Latin to know medicine because I didn't have to. Although it's true that medicine can't be understood without knowing philosophy, it doesn't follow from this that you can't be a philosopher without knowing Latin. For, philosophy is nothing but knowing the operations of nature by natural reason and with this knowledge understanding the causes of things, which can certainly be understood without knowing Latin. Did the first philosophers learn philosophy from Latin books? Did they learn it in the university? Of course not. And so the professors of those colleges, having witnessed my doctrine and intelligence, with that experience—which is after all the mother of all

wisdom in this profession—conceded to me these titles and privileges, which, as I said, are certain and true and legal.

As to the accusation that he made medicines in his own house, contrary to the law forbidding anyone but pharmacists from making drugs, Leonardo defiantly stood his ground. “I confess to the charge,” he asserted, and continued his defense with an audacious discourse on the superiority of the new way of healing, pitting himself squarely against the “Arabists” who dominated Spanish medicine.

The true method of healing, whether in medicine or surgery, is the one that I have written about in my books. My method is founded upon the true doctrine of Hippocrates, which Avicenna understood poorly. But the moderns, such as Ramon Lull, Arnald of Villanova, Abacue the Jew, Paracelsus, Cornelius Celsus, and Philip Ulstadius, understood it well and used the same methods. As Your Excellency knows, Hippocrates writes, “extreme remedies are to be employed when treating extreme sicknesses.” This proposition is the foundation of my doctrine, but it has been badly practiced by Avicenna’s followers, since grave sicknesses and diseases engendered from bad qualities have to be cured with strong medicines, not by ordinary weak medicines.

With his feet firmly planted in the pseudo-Lullist alchemical tradition, Fioravanti proceeded to launch an attack on the Spanish physicians and apothecaries, accusing them of using obsolete methods and outdated equipment to make their remedies. As he does in all of his medical writings, he dwells on bodily pollution. In a lengthy digression on the therapeutics of cleansing, he argues that illnesses are engendered by impurities that collect in the stomach, which expels them to the rest of the body, causing many different kinds of sickness. Therefore, it stands to reason that the cure is to drive these pollutions, and the most natural and efficient way to do that is through the windpipe, i.e., by vomiting as opposed to purging. “This was the method I followed in treating Tristan’s servant, as I do in treating all of my patients,” he explained. “But the poor lad was too far gone when I arrived at the scene. I did all I could for him but the doctors who came after me refused to follow my instructions.”

The same applies to remedies: they, too, must be free of corruption. Defending himself against the charge of having made his own medicines at home rather than purchasing them from the pharmacists, Fioravanti explained that he did it because he had to distill his medicaments in glass vessels, not in the metal alembics that the Spanish apothecaries use. “My medicines are free of the bad effects of the distilled waters that are corrupted and rotten because they aren’t extracted in glass vessels. The

alembics they use here exhale the incorruptible and substantial spirits and absorb the corrosive quality of the metal and therefore become corrupted and putrefy.” Because his drugs were perfectly distilled, he contended, “They take on the occult properties of nature much better than those made by any other method” and thus are better able to resolve peccant humors. The Spanish apothecaries didn’t understand the process of distillation, he alleged. Moreover, he had been invited to the court specifically to do experiments with his medicaments in order to benefit His Majesty’s royal army and navy. “Since I didn’t find any of the medicaments that I needed here, nor anyone who knew how to make them,” he explained, “I had to make them myself in my house. I did this in order to do the experiments ordered by the mandate of the king.”

Regarding the charge of having used poisons to treat his patients, it was completely false, Fioravanti declared. “In fact, the contrary is true, for experience shows that my medicines are antidotes, not poisons. They defend the body from the poison that comes from wounds caused by iron projectiles by driving out the venom, as is proved by the experiments that I made in His Majesty’s court.” He went on to explain, in alchemical terms, how his methods extract the “incorruptible spirits,” which are used in his medicines to “vivify and conserve the human body by an occult property of nature.”

The final charge against him was that he had practiced surgery “against the precepts of the authorities.” Leonardo rejected the charge, arguing that his methods “conform to nature and natural reason, which is something that the physicians and surgeons ought to attend to more.” Stepping up his attack, he condemned the physicians for their reliance on diet and surgeons for failing to observe the basic rule of surgery, which is to “consolidate and join” the wound as it was before the injury.

Fioravanti concluded his defense with a strangely out-of-place digression on the therapeutic power of the alchemical quintessence of human blood. Citing as his authority “Abacue the Jew” (*Abacue hebreo*) whom he claims to quote from a book that was discovered in the library of King Edward of England, he explains:

This book, which King Edward guarded as sacred and divine, treated of the quintessence of human blood. It says that a dead man dismembered is worth more for human health than ten thousand living men, and the other animals have this same effect. The more our medicines approach the nature and quality of man, the more effective they will be. For this reason my new way of healing, both in medicine and surgery, and the medicines made by these methods, are certain and true and rational and proved by experience.⁵⁴

The medicinal use of human body parts, including blood, was a subject that fascinated Fioravanti—as it did many of his contemporaries.⁵⁵ He wrote about it at length in a chapter in *Della fisica*.⁵⁶ Human fat, he writes, “as everyone knows, is warm, penetrating, and soothing and when used as an ointment is of great value where the body has hardened and the sinews are tight.” You can also distill a water from the human liver, a mere half a dram of which, when drunk every morning for a month, cures those whose liver is half rotted. A water distilled from the cranium cures the falling sickness. Fioravanti made extravagant claims for his “quintessence of human blood, with which, given as a drink to a person who had all but given up the ghost, is suddenly brought back to life.” These seemingly bizarre ideas about the body were not peculiar to Leonardo. To people of the Renaissance, the human body, even a dead one, was considered to be something positively useful.⁵⁷

It is difficult to know what the authorities thought of Fioravanti’s lengthy, rambling, and at times incoherent defense. His severe condemnation of the condition of Spanish medicine and surgery cannot have helped him. Nor could his defiant stance have won favor among the members of the Protomedicato. One can only wonder whether he was fully in control of his mental faculties, or whether his megalomania got the best of him.

The outcome of the proceeding is not known.⁵⁸ Very likely, we shall never know. However, it is difficult to imagine that the court would have exonerated him and given him permission to, as he impertinently demanded, “practice my method freely anywhere in the realm.” Given his sworn hostility to the alchemists, surely Olivares would have slapped Fioravanti with a heavy fine and used his influence to make the Italian surgeon unwelcome at the court. Whatever the outcome might have been, not long after the trial Fioravanti returned to Italy and settled in Naples, where he recorded his memories of Spain in *Della fisica*. He dedicated the work to Philip II, “for he is without any doubt the most Catholic and Christian king in the whole world.”⁵⁹

Fioravanti’s humiliation was a triumph for Olivares and a setback for the proponents of alchemical medicine. In 1579, Philip invited a Neapolitan, Giovanni Vincenzo Forte, to the court and provided him with a house and distillation laboratory in the Royal Garden. The king asked Forte specifically to “prepare quintessences according to the practice of Ramon Lull for the health of the human body.”⁶⁰ Forte’s efforts were continually thwarted by the court physicians, especially Olivares, who saw the Italian as an imposter who would drain the resources of the crown.⁶¹ Two years after his appointment, Forte complained to Cardinal Granvelle,

one of the king's ministers, that the court physicians stood in his way at every turn and kept him from accomplishing anything.⁶² Olivares, whom Fioravanti jokingly called "barrel belly" for his corpulent physique, was a powerful man who knew how to throw his weight around.

While Olivares could claim a temporary victory, after his death in 1584 the pendulum swung back in favor of the alchemists. Francisco Valles, the king's most trusted physician and a passionate devotee of alchemical medicine, was appointed Protomedico, a post that he held until his death in 1592.⁶³ Valles vigorously promoted Philip's design to manufacture the quintessences described by pseudo-Lull.⁶⁴ Later, he was given the honorific title of "His Majesty's Distiller" (*Destilador de Su Majestad*).⁶⁵

Philip and his successors continued to rely on Italian alchemists long after Leonardo Fioravanti's departure from the court. When, in 1585, Philip began the construction of an immense distillation laboratory at the Escorial, Giovanni Vincenzo Forte was assigned to oversee its construction. The centerpiece of the laboratory was a gigantic *torre filosofal* (philosophical tower), a still over twenty feet high and capable of producing two hundred pounds of medicinal waters per day. After Giovanni Vincenzo returned to Italy in 1591, his son, Valerio, was appointed Chief Distiller (*destilador mayor*) and put in charge of the laboratory. For nearly a century, Forte's heirs continued to serve in that capacity, comprising a kind of dynasty of royal distillers. In addition to Italians like Fioravanti and Forte, Catholic scientists from Protestant countries came to escape religious persecution as well as to continue their research in the Royal Pharmacy (*Real Botica*), the greatest pharmaceutical laboratory in the world. If you were interested in the spagyric arts, Philip's court was obviously the place to be.

* * *

My intention in this paper has been, in part, to help rectify an imbalance in modern scholarship that persistently excludes Spain from the overall picture of early modern science. First of all, I wanted to show that Spain was by no means an isolated outpost of Renaissance scientific culture. As the example of the Italian alchemists suggests, Philip II's court was a magnet for natural philosophers from Catholic Europe. I also wanted to suggest that scientific activity in Philip's court illustrates many of the same patterns of scientific patronage that scholars have observed in other European courts. Indeed, in some respects Philip's court was more modern, not less, than other courts; for not only did Philip support scientific activity through his personal patronage, he also created and

supported institutions for the advancement of science, such as the Casa de Contratación, which promoted the sciences of navigation, cosmography, and cartography.⁶⁶ As the guardian of the world's greatest empire, he found science and technology to be useful, and he opened his court to foreigners who might help him advance his aims. In the late-sixteenth century, when Leonardo Fioravanti and a host of other Italians visited Spain, King Philip's court in Madrid was an important center for the investigation of what was then regarded as one of the most powerful of all sciences: alchemy.

Notes

¹ Henry Kamen, *Philip II of Spain* (New Haven: Yale University Press, 1997), 221.

² Balthasar Porreño, *Dichos, y hechos de el señor rey Don Phelipe Segundo, el prudente, potentissimo, y glorioso monarca de las Españas, y las Indias* (Madrid, 1748), 94.

³ Henry Kamen, *The Spanish Inquisition: An Historical Revision* (London: Phoenix Press, 1997).

⁴ Richard L. Kagan, "Prescott's Paradigm: American Historical Scholarship and the Decline of Spain," *American Historical Review* 101 (1996): 423-46.

⁵ Henry Kamen, *Imagining Spain: Historical Myth and National Identity* (New Haven: Yale University Press, 2008), 52.

⁶ Quoted in Kamen, *Imagining Spain*, 62.

⁷ For historiography, now gradually shifting away from the traditional demonization of Philip, see Kamen, *Philip II*; and Geoffrey Parker, *Philip II*, 4th ed. (Chicago and La Salle: Open Court, 2002).

⁸ Geoffrey Parker, *The Grand Strategy of Philip II* (New Haven: Yale University Press, 1998).

⁹ Quoted in *ibid.*, 3.

¹⁰ Paul Kennedy, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (New York: Vintage, 1989).

¹¹ Parker, *Grand Strategy*, 17; María José Rodríguez-Salgado, "The Court of Philip II of Spain," in R. G. Asch and A. M. Birde, eds, *Princes, Patronage and the Nobility: The Court at the Beginning of the Modern Age* (Oxford: Oxford University Press, 1991), 205-44. On Philip's scientific bureaucracy, see Antonio Barrera-Osorio, *Experiencing Nature: The Spanish American Empire and the Early Scientific Revolution* (Austin: University of Texas Press, 2006).

¹² Javier Rivera Blanco, *Juan Bautista de Toledo y Felipe II : la implantación del clasicismo en España*, Serie Arte y Arqueología, no. 3 (Valladolid: Universidad de Valladolid, Secretariado de Publicaciones, 1984).

¹³ Eric Ash, *Power, Knowledge, and Expertise in Elizabethan England* (Baltimore: Johns Hopkins University Press, 2004), 19-54.

¹⁴ David Goodman, *Power and Penury: Government, Technology and Science in Philip II's Spain* (Cambridge: Cambridge University Press, 1988), 6-8, 61-65.

¹⁵ Goodman, *Power and Penury*, 124; 96. Philip did not hire only Italians. He also hired Germans founders and mine workers (after thoroughly vetting them for possible Protestant sympathies) to make artillery pieces and to supervise mining operations in the Iberian Peninsula (ibid, 115). In addition, he contracted with the Fugger banking house for German mineworkers to work in the mines of New Spain, cautioning him that no Lutherans be included (ibid, 157).

¹⁶ Goodman, *Power and Penury*, 126.

¹⁷ For Philip's interests in alchemy, see F. Rodríguez Marín, *Felipe II y la alquimia* (Madrid, 1927); Javier Ruiz, "Los alquimistas de Felipe II," *Historia 16 12* (1977), 49-55.

¹⁸ Rodríguez Marín, *Felipe II y la alquimia*, 19f.

¹⁹ Goodman, *Power and Penury*, 12; Rodríguez Marín, *Felipe II y la alquimia*, 17ff.

²⁰ Francisco Javier Puerto Sarmiento, "La panacea aurea: Alquimia y destilación en la corte de Felipe II (1527-1598)," *Dynamis 17* (1997): 107-40, p. 116.

²¹ Mar Rey Bueno, *Los señores del fuego: Destiladores y espagíricos en la corte de los Austrias* (Madrid, 2002), 40.

²² Bueno, *Los señores del fuego*, 36.

²³ Michela Pereira, *The Alchemical Corpus Attributed to Raymond Lull*, Warburg Institute Surveys and Texts, XVIII (London, 1989); and idem, "La leggenda di Lullo alchimista," *Estudio Luliano 27* (1987): 145-63.

²⁴ On alchemical fraud, see Tara Nummedal, "The Problem of Fraud in Early Modern Alchemy," in *Shell Games: Scams, Frauds and Deceits in Europe, 1300-1650*, ed. Richard Raiswell and Mark Crane (Toronto, 2004), pp. 37-51.

²⁵ Michela Pereira, "Teorie dell'elixir nell'alchimia medievale," *Micrologus 3* (1995): 103-48.

²⁶ William R. Newman, *Promethean Ambitions: Alchemy and the Quest to Perfect Nature* (Chicago: University of Chicago Press, 2004).

²⁷ The design did not come to fruition. Goodman, *Power and Penury*, 10.

²⁸ Miguel López Pérez, "Algunos rasgos sobre la relación entre lulismo y pseudolulismo en la Edad Moderna," *Dynamis: Acta Hispanica ad Medicinæ Scientiarumque Historiam Illustrandam 22* (2002): 327-50. Francisco Javier Puerto Sarmiento and Guillermo Folch Jou, "Los manuscritos alquímicos seudolulianos conservados en la Biblioteca Nacional de Madrid," *Boletín de la Sociedad Española de Historia de la Farmacia 30*, no. 119 (1979): 227-42; René Taylor, "Architecture and Magic: Considerations on the Idea of the Escorial," in *Essays in the History of Architecture Presented to Rudolf Wittkower*, ed. Howard Hibbard and Milton J. Lewine (New York, 1969), 81-109.

²⁹ For Philip's interests in alchemy, see Miguel López Pérez, *Asclepio renovado: Alchímia y medicina en la España Moderna (1500-1700)* (Madrid: Ediciones Corona Borealis, 2003); F. Rodríguez Marín, *Felipe II y la alquimia* (Madrid, 1927); Javier Ruiz, "Los alquimistas de Felipe II," *Historia 16 12* (1977), 49-55.

³⁰ Born in 1517 in Bologna, Fioravanti began practicing as an empiric or apprentice surgeon around 1533. In 1548, he seems to have experienced some sort of epiphany. According to his autobiography, which begins in October of that

year, he left Bologna to “go out into the world” in search of the secrets of nature: *Il Tesoro della vita humana* (Venice, 1570), 17v. On Fioravanti’s life and career, see Davide Giordano, *Leonardo Fioravanti Bolognese* (Bologna, 1920); and Piero Camporesi, *Camminare il mondo: Vita e avventure di Leonardo Fioravanti medico del Cinquecento* (Milan, 1997). More recent and focused on Fioravanti’s alchemical activity is William Eamon, *The Professor of Secrets: Mystery, Medicine, and Alchemy in Renaissance Italy* (Washington: National Geographic Books, 2010).

³¹ John Hester, *These Oiles, water, Extractions, or Essences, Saltes, and other Compositions; are at Paules wharfe made to be solde, by John Hester, practitioner in the arte of Distillation* (London, n.d.). On Hester, see Paul H. Kocher, “John Hester, Paracelsan (f. 1573-93),” in *Joseph Quincy Adams Memorial Studies*, ed. J. McManaway, G. E. Dawson, and E. E. Willoughby (Washington, 1948), 621-38. In a letter of 2 December 1568, Fioravanti records that he sent a shipment of eye water to England (*Tesoro*, 228).

³² On the African war, see Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II*, trans. S. Reynolds (New York, 1972), 2:907-11. A more detailed narrative is in P. Alberto Guglielmotti, *La guerra dei pirati e la marina pontificia dal 1500 al 1560* (Florence, 1876), 2:181-244. Fioravanti’s account of the African campaign is in *Tesoro*, 60-7. Mahdiya was known to the Europeans as Aphrodisium or, simply, Africa.

³³ Contemporary histories of the war include Juan Cristobal Calvete de Estrella, *La conquista de la ciudad de Africa en Berberia* (Salamanca, 1558); Horatio Nucula, *Commentariorum de bello Aphrodisiensi libri quinque* (Rome, 1552); Pedro de Salazar, *Historia de la guerra y presa de Africa* (Naples, 1552); idem, *Hispania victrix* (Madrid, 1570); and Cornelius Scepper, *Rerum à Carolo V cesare augusto in Africa bello comentarii* (Antwerp, 1554).

³⁴ The inventory of Philip’s library at El Escorial is published in *Documentos para la historia del monasterio de San Lorenzo el Real de El Escorial*, vol. VII, ed. Gregorio de Andrés (Madrid, 1964). As early as 1561, a section of Fioravanti’s *Capricci medicinali* was translated into Spanish: *Discurso de Fioravanti sobre la medicina universal y conservación del cuerpo*, Biblioteca Nacional MS 6149, f.66.

³⁵ Bruce Moran, *Distilling Knowledge: Alchemy, Chemistry, and the Scientific Revolution* (Cambridge, MA: Harvard University Press, 2005), *passim*.

³⁶ *Tesoro*, 50.

³⁷ Fioravanti mentions the academy in a letter to the Neapolitan physician Alfonso da Rienzo, dated 14 April 1568 (*Tesoro*, 234). Fioravanti’s academy may have imitated another, almost contemporary Neapolitan academy called the Accademia Segreta, which was formed in the 1540s with similar purposes in mind. For the latter, see William Eamon and Françoise Paheau, “The Accademia Segreta of Girolamo Ruscelli. A Sixteenth-Century Italian Scientific Society,” *Isis* 75 (1984): 327-42.

³⁸ Ausonio’s major alchemical work, the unfinished *Trattato sopra l’arte dell’alchimia* (MS Milan, Biblioteca Ambrosiana, Q 118 Sup.), is a fervently Lullist tract. Although there is no record of when the two met, it can be

established that Fioravanti knew Ausonio before 1567, when he published the *Specchio di scienze universale*, where Fioravanti mentions the Milanese alchemist as “*un huomo rarissimo & dotissimo*,” *Specchio*, 83v. On Ausonio and the Lull legend, see Pereira, *The Alchemical Corpus Attributed to Raymond Lull*, pp. 48-9.

³⁹ Archivo General de Simancas, Estado, leg. 1065, fol. 99, “*Relaciones de memoriales de particulares al virrey de Nápoles*,” 1576.

⁴⁰ *Della fisica*, 362. Puerto suggests that Fioravanti’s alchemical circle actually occupied a marginal status in the court. F. Javier Puerto Sarmiento, “Alquimistas, destiladores y simplistas en la corte de Felipe II,” in *Los hijos de Hermes: Alquimia y espagiria en la terapéutica española moderna*, ed. F. J. Puerto Sarmiento, et al. (Madrid, 2001), 349-71, p. 356.

⁴¹ *Della fisica*, 296, 352, 362, 372.

⁴² *Della fisica*, 172.

⁴³ *Della fisica*, 372.

⁴⁴ Juan Cornejo, *Discurso y despertador preservativo de corrimiento y enfermedades dellos . . . (el modo y traça de hazer el oro potable del lentisco, y sus diferentes cosimientos, y la elección de la plantas, para que se hagan puntual* (Madrid, 1594). This work also exists in a manuscript in the Biblioteca Nacional, Madrid, MS 3355. On Cornejo, see Miguel López Pérez, *Asclepio renovado*, pp. 113-14.

⁴⁵ IVDJ 61(ii)/261. Antonio Gracián to the king. The document is reproduced in George Kubler, *Building the Escorial* (Princeton: Princeton University Press, 1982) in an appendix, “Herrera and Alchemy,” p. 140. However, Kubler failed to recognize Gracián’s monogram and mistakenly supposed the letter to be from Herrera. See the discussion in Goodman, *Power and Penury*, 13.

⁴⁶ *Della fisica*, 374.

⁴⁷ Elena Castro Soler and José Rodríguez Guerrero, “Luis de Centelles y las Coplas de la Piedra *Philosophal*,” *Azogue*, 4 (2001); URL:

<<http://www.revistaazogue.com>>. For a critical edition of the text, see “Las Coplas de la Piedra *Philosophal* (tres versiones),” ed. Elena Castro Soler, *Azogue*, 4 (2001); URL: <<http://www.revistaazogue.com>>

⁴⁸ Identified with *argento vivo* (which, the poet explains, is not necessarily mercury, but a mercurial matter, having the capacity to change into other materials).

⁴⁹ Michela Pereira, “*Medicina* in the Alchemical Writings Attributed to Raymond Lull (14th-17th Centuries),” in Piyo Rattansi and Antonio Clericuzio, eds, *Alchemy and Chemistry in the 16th and 17th Centuries* (Dordrecht: Kluwer, 1994).

⁵⁰ British Library, Add. MS 28.353. The manuscript is published in full in my article, “The Charlatan’s Trial: An Italian Surgeon in the Court of King Philip II, 1576-1577,” *Cronos* 8 (2005): 3-30. All quotations from Fioravanti defense are from this source. As far as I know, the only other historian who has noticed this document is David Goodman (*Power and Penury*, 259, n. 140). For additional details about the trial and its context, see Eamon, *The Professor of Secrets*, pp.283-93.

⁵¹ Qu. Rey Bueno, *Los señores del fuego*, 53: “*Estos extranjeros entran por la manga y salen por el cabezon*.”

⁵² There are few clues to Tristan's identity; he was, evidently, a well-connected member of the court.

⁵³ There is no record of Fioravanti's having obtained a degree from the University of Naples. Probably he was referring to a license to practice in Naples that he received from the Neapolitan Protomedico.

⁵⁴ The "sacred book" that Leonardo refers to was, evidently, one of the alchemical tracts that Lull supposedly gave to King Edward III. The identity of Fioravanti's "Abacue hebreo" is unclear; perhaps it was a corruption of the name of the prophet "Abacuc" (Habbakuk) or of some other alchemical figure. See Pereira, *Alchemical Corpus*, 48-9; idem, "Leggenda di Ramon Lull."

⁵⁵ Piero Camporesi, *Juice of Life: The Symbolic and Natural Significance of Blood*, trans. Robert R. Barr (New York: Continuum, 1995).

⁵⁶ "Discurso dell'huomo, et delle medicine che di esso si posson cavare," *Della fisica*, 165-7.

⁵⁷ Giovanna Ferrari, "Public Anatomy Lessons and the Carnival: The Anatomy Theatre of Bologna," *Past and Present*, 117 (1987): 50-106, p. 101; Piero Camporesi, *Bread of Dreams: Food and Fantasy in Early Modern Europe*, trans. David Gentilcore (Chicago: University of Chicago Press, 1989), 48-50.

⁵⁸ The papers of the Protomedicato destroyed in a fire of 1939.

⁵⁹ *Della fisica*, a2v: "porque sin duda ninguna el es Catolichissimo y Christianissimo sobre todos los otros Reis del mundo."

⁶⁰ Quoted in Goodman, *Power and Penury*, 14. On Forte's activities in the court, see Rey Bueno, *Los señores del fuego*, 51-7.

⁶¹ Rey Bueno, *Los señores del fuego*, 52.

⁶² Rey Bueno, *Los señores del fuego*, 54.

⁶³ Rey Bueno, *Los señores del fuego*, 92.

⁶⁴ On Valles's career and publications, see Rey Bueno, *Los señores del fuego*, 91-8.

⁶⁵ Mar Rey Bueno, "El informe Valles: los desdibujados límites del arte de boticarios a finales del siglo XVI (1589-1594)" *Asclepio* 56, no. 2 (2004): 243.

⁶⁶ Barrera-Osorio, *Experiencing Nature*.