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Alchemy and Paracelsianism at the Casino di San Marco in Florence

An Examination of La fonderia dell'Ill.mo et Ecc.mo Signor Don Antonio de' Medici (*1604*)

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Abstract

This article provides a first in-depth look at the *La fonderia dell'Illmo et Ecc.mo Signor Don Antonio de' Medici*, a publication that was issued at the Casino di San Marco in Florence in 1604. This work has been deemed to be lost by many scholars on the Casino, but in fact a copy of it is found in the British Library. The article analyses the contents of *La fonderia*, paying particular attention to the alchemy and Paracelsianism to be identified therein. *La fonderia* is primarily a book of medical recipes, but also contains some intriguing theoretical parts. The paper also examines the marginalia that can be found in the British Library copy of *La fonderia*. The article concludes with a reflection on the importance of alchemy and Paracelsianism at Don Antonio's Casino.

Keywords

Casino di San Marco – alchemy – Paracelsianism

At the turn of the seventeenth century, Florence was one of the greatest centres of alchemical activity in Europe. Alchemy was sponsored at the highest level by the Medici family, beginning with Grand Duke of Tuscany Cosimo I (1519–1574), and continuing with his sons Francesco I (1541–1587), Ferdinando I (1541–1609) and Don Giovanni (1567–1621). Later, the patronage was continued by Francesco's son Don Antonio (1576–1621) and Ferdinando's son Cosimo II (1590–1621). The princely alchemy they oversaw was carried out initially in the *Fonderia* of the Palazzo Vecchio, then on several other sites: the Boboli Gardens, the Galleria degli Uffizi, Casino di Parione and Casino di San Marco.

Of all the *Fonderie*, the alchemical laboratory in the Casino di San Marco is particularly well documented in manuscripts. The Casino is a palace built by Francesco I as a residence and alchemical laboratory. Initially intended to house Francesco I's alchemical, Medici porcelain-making and glass works (1574–1587), it later became the main conduit for his son Don Antonio's interests (1596–1621).[1] It is now mainly remembered as the place associated with *L'Arte Vetraria* (The Art of Glass) of Antonio Neri (1612), which is deemed to be the first manual in the art of glassmaking.[2]

Yet there was one much lesser-known publication that came out from Casino di San Marco: a book called *La Fonderia dell'Ill.mo et Ecc.mo Signor Don Antonio de' Medici Principe di Capistrano, etc. Nella quale si contiene tutta l'arte spagirica di Teofrasto Paracelso & sue medicine. E altre segreti bellissimi* (The Laboratory of his Most Illustrious and Excellent Lord Don Antonio de' Medici, Prince of Capistrano, which Contains the Entire Spagirical Art of Theophrastus Paracelsus, and his Medicines, and Other Wonderful Secrets), published in 1604. Don Antonio de' Medici's 19th century biographer, Pierfilippo Covoni, was only aware of its existence from a 1797 reference in *L'osservatore fiorentino*, which declared it lost.[3]

In fact, Covoni's contemporary, the German historian Karl Sudhoff, found a copy of the book in the British Museum (now British Library) and briefly described its contents in his bibliographical study *Bibliotheca Paracelsica* (1894).[4] Yet his note was overlooked until Alfredo Perifano drew attention to

1 The most recent article to focus on the Casino is Marco Beretta, "Material and Temporal Powers at the Casino di San Marco (1574–1621)," in *Laboratories of Art: Alchemy and Art Technology from Antiquity to the 18th Century*, ed. Sven Dupré (Cham: Springer, 2014), 129–156.

2 Marco Beretta, "Glassmaking Goes Public: The Cultural Background to Antonio Neri's *L'Arte Vetraria* (1612)," *Technology and Culture* 58, no. 4 (2017): 1046–1070.

3 Pierfilippo Covoni, *Don Antonio de' Medici al Casino di San Marco* (Florence: Tipografia Cooperativa, 1892), 148.

4 Karl Sudhoff, *Bibliotheca Paracelsica: Besprechung der unter Theophrast von Hohenheim's Namen, 1526–1893* (Berlin: Georg Reimer, 1894), 455.

it in a footnote on his work on alchemy at the court of Cosimo de' Medici (1997).[5] Since then, Antonio Clericuzio mentioned it in an article on alchemy and Paracelsianism (2005).[6] To my awareness, no scholar has looked it in depth, and its existence remained little known.

Following in the footsteps of Perifano and Sudhoff, I found the book in the British Library, where it is properly catalogued and freely available for consultation. As far as I know, this is the only extant copy. The present paper is the first in-depth examination of this work, set into the context of what is known about alchemy at the Casino di San Marco.

1 Don Antonio de' Medici at the Casino di San Marco

Don Antonio de' Medici was the offspring of Francesco I's notorious affair with Bianca Capello (1548–1587). After both Bianca's husband and Francesco's wife died (1572, respectively 1578), the Duke quickly married Bianca (1579), and after the passing of his first son Filippo de' Medici in 1582 tried to promote Don Antonio as his heir. Yet Francesco's efforts were destined to come to nothing. After both he and Bianca unexpectedly died in October 1587 (either from malaria or arsenic poisoning),[7] his younger brother Cardinal Ferdinando took over the Duchy. Don Antonio, only eleven at the time, was in no position to challenge him. At eighteen, he was sent off to Malta to join the Maltese Knights fighting the Turks, and distinguished himself in battle in Hungary and Transylvania in 1594 and 1595. Upon his return, Ferdinando I granted him the possession of the Casino di San Marco, built by Francesco. There Don Antonio pursued the art of alchemy off and on until his death in 1621.

5 Alfredo Perifano, *L'alchimie à la Cour de Come Ier de Médicis: savoirs, culture et politique* (Paris: Honoré Champion, 1997), 49, n. 2.

6 Antonio Clericuzio, "Chemical Medicine and Paracelsianism in Italy, 1550–1650," in *The Practice of Reform in Health, Medicine, and Science, 1500–2000: Essays for Charles Webster*, ed. Margaret Pelling and Scott Mandelbrote (Aldershot: Ashgate, 2005), 62.

7 Francesco and Bianca died on 19 and 20 October 1587, respectively. The sudden passing has been attributed to either malaria or poisoning. Modern scholarship is still divided on the issue. In 2006, forensic experts claimed to have found evidence of arsenic poisoning in the remains of Francesco and perhaps Bianca as well; Francesco Mari et al., "The Mysterious Death of Francesco I de' Medici and Bianca Cappello: An Arsenic Murder?," *BMJ* (*Clinical research edition*) 333, no. 7582 (2006): 1299–1301, doi: 10.1136/bmj.38996.682234.AE. However, this was contradicted in a 2010 study, which found evidence of the malaria bacterium in Francesco's remains; see Gino Fornaciari et al., "Plasmodium falciparum Immunodetection in Bone Remains of Members of the Renaissance Medici Family," *Transactions of the Royal Society of Tropical Medicine and Hygiene* 104, no. 9 (2010): 583–587, doi: 10.1016/j.trstmh.2010.06.007.

FIGURE 1 The Casino di San Marco in Florence, now a law court
COURTESY OF THE AUTHOR

Don Antonio had inherited from his father an interest in the alchemical arts. Francesco, himself influenced by his father Cosimo I's patronage of alchemy, had initially pursued the art in the *Palazzo Vecchio* before instructing the architect Bernardo Buontalenti (1531–1608) to build a new palace near Piazza di San Marco.[8] The Casino di San Marco was constructed between 1567 and 1574 on the site of the *Orti medicei*, the gardens built by Lorenzo il Magnifico (1449–1492) near the convent of San Marco. The building still stands in its original place; currently it is used as a law court and is out of bounds to the public (Fig. 1).

8 On Francesco I's interest in alchemy and alchemical *fonderie*, see Luciano Berti, *Il Principe dello Studiolo. Francesco I dei Medici e la fine del Rinascimento fiorentino* (Florence: Edam, 1967), particularly ch. 3 (75–99) and elsewhere, Valentina Conticelli, *"Guardaroba di cose rare et preziose:" Lo Studiolo di Francesco I de' Medici. Arte, storia e significati* (Lugano: Agorà, 2007), and Valentina Conticelli, "Lo Studiolo di Francesco I e l'alchimia: nuovo contributi storici e iconologici, con un carteggio in appendice (1563–1581)," in *L'Art de la Renaissance entre science et magie*, ed. Philippe Morel (Paris: Somgy, 2006), 207–268. Francesco's own interests grew from those of his father Cosimo I, who founded the first *fonderie* in the Palazzo Vecchio. On Cosimo I's alchemy, see Perifano, *L'alchimie à la Cour de Come Ier de Médicis*. On the general history of Florentine *fonderie*, see Giovanni Piccardi, "La Fonderia Medicea di Firenze," in *Atti del XI Convegno Nazionale di Storia e Fondamenti della Chimica*, ed. Luigi Cerruti and Francesca Turco (Rome: Accademia delle Scienze detta dei XL, 2005), 197–210.

FIGURE 2
The entrance to the Casino di San Marco in Florence
COURTESY OF THE AUTHOR

Many of the original architectural features of Buontalenti survive, such as the Medici emblem right above the main door (Fig. 2). Below lies a beautiful bas-relief of an ape with human hands, crawling out of a seashell, an apt image of the Renaissance's admiration of nature and its attempts to "ape" it.

Francesco meant the Casino to be both a residence and a place for scientific experiment, presenting it as an *officina di esperimenti chimici e fisici*.[9] As this suggests, alchemical experiment was the focus of the Casino. Francesco, like many others during the period, had a very wide view of what alchemy was.

9 Pierfilippo Covoni, *Il Casino di San Marco costruito dal Buontalenti ai tempi Medicei* (Florence: Tipografia cooperativa, 1892), 12.

As far as we know, Francesco's Casino included glassworks, a Medici porcelain and ceramic laboratory and an office for carving gems and moulding gold. Amongst the activities undertaken in Francesco's Casino one can enumerate: creation of artificial gems, production of Medici porcelain, fusion of rock crystal, preparation of fireworks and multiplication of saltnitre.[10] Francesco treated the Casino as a kind of cabinet of curiosities that embodied the wonders of nature and art in one place.

It is not very clear what happened to the Casino immediately after Francesco died in 1587. It seems that the experiments continued until Don Antonio took residence there in 1597.[11] Upon his endowment, he proceeded to renovate the palace to his liking. He continued his father's studies, though it is difficult to say how many of the old alchemists and artisans remained. We do know, however, that Father Antonio Neri (1576–1614) was working at the Casino prior to 1601 together with Niccolò Landi.[12]

2 *La Fonderia* and *Apparato della fonderia*

By 1604, Don Antonio had amassed more than 6,000 recipes at the Casino, many of which probably originated from the time of his father Francesco I. As part of his reorganisation efforts, the collection was drawn up in four large folio manuscripts, which can be found in the Biblioteca Nazionale Centrale di Firenze (BNCF), Fondo Magliabechiano XVI. Importantly, they are prefaced

10 According to the Venetian Ambassador in Florence, Andrea Gussoni, as reproduced in Eugenio Albèri, *Relazioni degli ambasciatori veneti al Senato* (Florence: Clio, 1843), II, 376–389.

11 According to contemporary testimonies, upon taking possession of the Casino, Ferdinando I fired most of the alchemists (Beretta, "Material and Temporal Powers," n. 38, 143; n. 51, 147), but this does not mean that some experiments did not continue to take place until Antonio settled in it. In fact, Fanny Kieffer has drawn attention to a note she found in the four *Apparato* volumes, which refers to an experiment conducted on 23 November 1588 by "G.B.," thus during Ferdinando I's tenure of the Casino (BNCF, Magl XVI, 63, I, 124). This is an important clue that Ferdinando, despite contemporary claims, did not really fire all workers at the Casino. See Fanny Kieffer, "The Laboratories of Art and Alchemy at the Uffizi Gallery in Renaissance Florence: Some Material Aspects," in *Laboratories of Art: Alchemy and Art Technology from Antiquity to the 18th Century*, ed. Sven Dupré (Cham: Springer, 2014), 113. Yet Kieffer's claim that this note means that "the writing of the book was undertaken in 1588" is not borne by the evidence. Firstly, the date refers to the undertaking of the experiment, not the writing of the *Apparato* volumes; secondly, the volumes may have been compiled over a longer period.

12 According to Antonio Neri himself in *L'arte vetraria* (Florence: Giunti, 1612), 41.

by a printed cover called *Apparato della fonderia dell'illustrissimo et eccellentissimo Sig. D. Antonio Medici. Nel quale si contiene tutta l'arte Spagirica di Teofrasto Paracelso, & sue medicine. Et altre segreti bellisimi*, dated 1604. The strategy of fronting a collection of recipes with a printed cover is unusual, leading Paolo Galluzzi and Marco Beretta to argue that the whole collection was meant to be published as a book of secrets by the Casino di San Marco printing press.[13] Beretta has also suggested that the publication project may have been disrupted by Antonio Neri's departure to Antwerp in 1604 and never taken up again, a possibility that raises the question of his involvement in the composition of the work itself.[14] Still, a publication did come out, the elusive *La fonderia*, which Beretta proposed to be "an epitome" of the manuscript collection.[15]

Indeed, it is clear that there is a relationship between the *La fonderia* volume and the *Apparato della fonderia* cover (Figs. 3 and 4). The titles are very similar, including the reference to Paracelsus; both are in octavo format, bear the year 1604 and the Medici coat-of-arms.

Yet there are also slight differences between the two titles. The most obvious is the difference in titles: *La fonderia* (for the published volume) and *Apparato della fonderia* (for the cover of the manuscript volumes). *La fonderia*'s cover seems more precise than that of the *Apparato* in locating the printing press at the "Palazzo del Casino di Sua Eccellenza Illustrissima," in Florence. It is also more formally describing Don Antonio as Principe di Capistrano, something missing in the *Apparato*. All these differences seem to suggest that *La fonderia* was deemed more important, or at least more official, than the *Apparato*. This is reinforced by the evident fact that it was published in its entirety. Although both may have been meant for publication, issuing *La fonderia* took priority over the *Apparato*. Thus at first glance the *Apparato* could be deemed secondary to *La fonderia*, perhaps as an extended appendix.

This would reinforce Beretta's view that *La fonderia* was an epitome of the BNCF manuscripts. It would indeed make sense that *La fonderia* was a condensed version of the collection. Yet, my analysis of *La fonderia* shows that, in fact, things are more complicated than that.

13 Paolo Galluzzi, "Motivi paracelsiani nella Toscana di Cosimo II e di Don Antonio dei Medici: alchimia, medicina 'chimica' e riforma del sapere," in *Scienze, credenze occulte, livelli di cultura* (Firenze: L.S. Olschki, 1982), 36; Beretta, "Material and Temporal Powers," 148. On books of secrets in general, see William Eamon, *Science and the Secrets of Nature* (Princeton: Princeton University Press, 1994).

14 Beretta, "Material and Temporal Powers," 148, and particularly n. 58.

15 Ibid., 148.

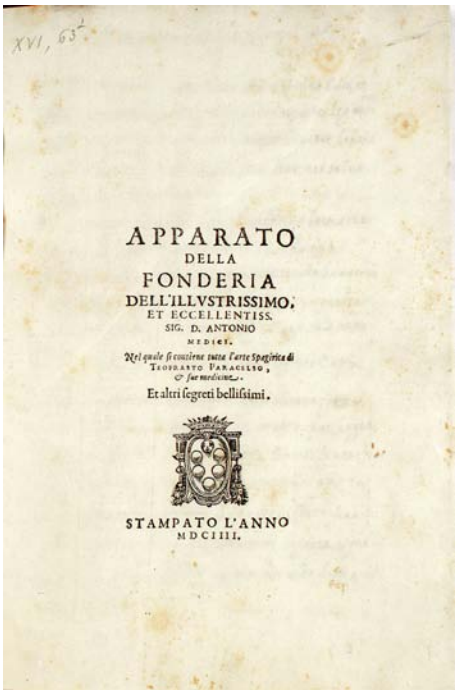

FIGURE 3
Apparato della Fonderia cover
COURTESY OF BNCF AND SVEN DUPRÉ

FIGURE 4
La Fonderia cover
COURTESY OF THE BRITISH LIBRARY BOARD, GENERAL REFERENCE COLLECTION, C.108.FF.25, COVER

3 The Structure of *La fonderia*

The *La fonderia* volume in the British Library is an octavo volume, much smaller than the manuscript folios in the BNCF. The volume is bound in a dark brown leather cover with gilt decoration. The most striking aspect is the presence of the Medici arms on the front and back cover, a fact that suggests that the copy belonged to the Medici family, most likely to Don Antonio himself (Fig. 5). This is reinforced by the fact that the page sides are gilt.

The volume has no dedication or introduction of any kind. It does, however, have a rather detailed table of contents at the end that runs for 8 pages.

The text itself begins abruptly with the headline *De' minerali et metalli philosophici. Et prima di Mercurio de Filosophi, e sua sottile preparazione, è virtù varia* (On philosophical minerals and metals, and first of the Mercury of the Philosophers, and its subtle preparation, and its various virtues). It is only later in the

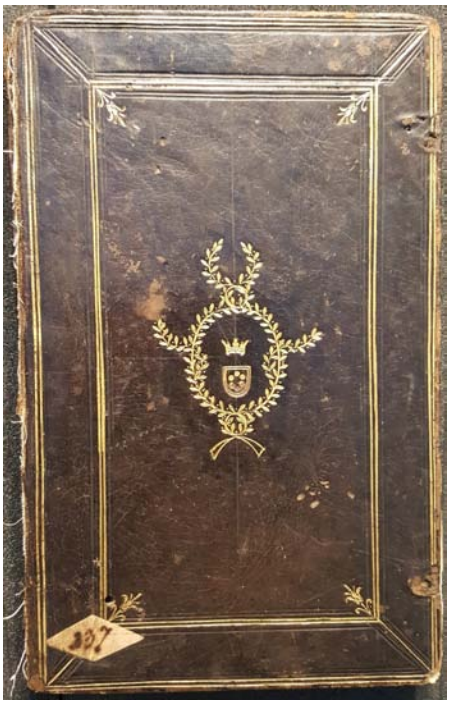

FIGURE 5
La fonderia book binding
COURTESY OF THE BRITISH LIBRARY BOARD, GENERAL REFERENCE COLLECTION, C.108.FF.25, BOOK BINDING

volume that it becomes apparent that the work is divided in three books, with *De' minerali* being the first book, *De l'olii de' metalli* (On oils of metals) being the second and *De' Sali dell'erbe piu principali et d'alcuni minerali* (On the salts of the most important plants and some minerals), being the third. All pages are numbered up to the table of contents, making up a total of 140 pages.

The lack of a dedication of the volume does not mean that the work is not addressed. Thus, the first page of the third book makes it clear that the volume is meant for Don Antonio himself, because here the author is talking about the method of preparation of nitre at the "fonderia di V.E. Illustrissima."[16] This is the only detail, yet a conclusive one, that the book was meant for the Prince.

The volume is mainly a collection of recipes and secrets containing various headlines such as oil of vitriol or balsam of antimony. A heavy weight is placed on preparations out of minerals and metals, with only a few recipes involving plants and animals. Most are alchemical in nature, and, interestingly, almost all

16 *La Fonderia dell'Ill.mo et Ecc.mo Signor Don Antonio de' Medici Principe di Capistrano, etc. Nella quale si contiene tutta l'arte spagirica di Teofrasto Paracelso, & sue medicine. E altri segreti bellissimi* (Florence: n.p., 1604), 101.

are focussed on medicine. This seems to make it quite different from the *Apparato* and its volumes, which, according to Galluzzi, do not favour medicine.[17]

Despite the practical bent of the *La fonderia*, there is theory in the text. This is mainly confined to the first chapter, which discusses Philosophical Mercury, or "our" Mercury as the author calls it. This arcane substance was often meant as the supreme agent of transmutation in alchemy.

By discussing Philosophical Mercury first, the author is grounding his discussion in alchemical philosophy. He maintains that this Mercury is made of regular mercury or quicksilver, a thesis originating in medieval alchemy, particularly with Pseudo-Geber (13th century).[18] In accordance with the Pseudo-Geberian view, the *La fonderia* author maintains that Philosophical Mercury is a special kind of mercury, which has been purged of its supervenient sulphur, lead and earth.[19] The specific term "our mercury" appears in Pseudo-Raymond Lull's *Testamentum* (c. 1330) and in the *Rosarium philosophorum* attributed to Arnald of Villanova.[20]

Although the author mentions the metallurgical properties of Philosophical Mercury as purging gold,[21] his focus is only on its medical properties. He recommends the use of Philosophical Mercury for disease, claiming that it is endowed with wondrous medical properties: it purifies the blood, cures all contagious diseases, quartane fever, pestilence, epilepsy, ulcers, liver disease, indigestion, poison and others.[22]

17 Galluzzi, "Motivi paracelsiani," 36. A thorough examination of the volumes against *La fonderia* would be highly desirable.

18 This is in accordance with the so-called "mercury alone" theory of transmutation, so named by Lynn Thorndike, *History of Magic and Experimental Science* (New York, NY: Columbia University Press, 1934), III, 58; Newman traces this back to Pseudo-Geber (probably the Franciscan Paul of Taranto), see William R. Newman, *The "Summa perfectionis" of Pseudo-Geber: A Critical Edition, Translation and Study* (Leiden: Brill, 1991), 204–208; see also William R. Newman, *Gehennical Fire: The Lives of George Starkey, an American Alchemist in the Scientific Revolution* (Cambridge: Harvard University Press, 1994), 95–98.

19 *La fonderia*, 1: "Fa bisogno purgare Mercurio, ò l'argento vivo da tutte le parti del zolfo, del piombo, e della terra."

20 Pseudo-Lull, *Testamentum* (Cologne: Birckmann, 1573), for instance: 23r, 70v, 74r, 104r; *Rosarium Philosophorum: Ein alchemisches Florilegium des Spätmittelalters* (*Faksimile der illustrierten Erstausgabe Frankfurt 1550*), ed. Joachim Telle (Weinheim: VCH, 1992), I, 174.

21 *La fonderia*, 1: "Mercurio purga da tutti i metalli il Sole … L'oro va al fondo come cosa più grave, e subito si strugge … Mercurio de' Filosofi gli suole purgare dalle loro cattive qualità, & inclinare con molta forza le superfluità alle parti di sotto, & cacciarle del modo che segue." It is important to note that the author does not discuss transmutation, which is however implied in his natural philosophy.

22 Ibid., 1–2.

The author takes a polemical stance towards those who think that vulgar mercury is the Philosophical one. Instead, he points out, mercury is poisonous, and should only be used as medicine in specific cases. He cites Theophrastus von Hohenheim, called Paracelsus (1493–1541) for dismissing those medical practitioners who over-enthusiastically prescribe mercury.[23] This category included vulgar physicians, Jews, monks, friars, priests, barbers, dentists, old women and some alchemists.[24]

The author proceeds to give the following definition of Philosophical Mercury:

> Mercury is nothing other than the corporeal spirit of the world made in the bowels of the earth, which draws unto itself all faculties, not just animal but also vegetable and mineral, just like wax, which receives the impression of all forms; thus mercury receives in itself the properties of all natural things; if it is cleaned and prepared as it should be, that is, truly perfect and pure, it receives in itself the impression of pure gold and silver … Mercury is the universal recipient of all natural things and their virtues, and principally of gold.[25]

The author then makes an elaborate analogy between mercury and the moon, calling quicksilver "the moon of the earth."[26] Just as the moon is the recipi-

23 Ibid., 3. On Paracelsus's criticism of the overuse of mercury for syphilis, see Walter Pagel, *Paracelsus: An Introduction to Philosophical Medicine in the Era of the Renaissance* (Basel: Karger, 1958), 24.

24 *La fonderia*, 2–3: "Il volgo de medici, & gl'idioti come i giudei, i monaci, frati, e preti, i barbieri, cava denti, e le vecchierele, che non intendono niente, ò pur poco i Filosofi, con una certa arroganza insolente, si sforzano d'attribuire all'argento vivo ò mercurio del volgo, forza di sanare ogni pericolosa malattia."

25 Ibid., 3–4: "Mercurio niente altro è che spirito del mondo corporeo fatto nel ventre della terra, il quale tira à se tutte le facultà, tanto animali, quanto vegetabili, & minerali, à guisa della cera che riceve impressione di tutte le forme, cosi mercurio riceve in se le proprietà di tutte le cose naturali; se farà mondo & preparato come conviene, allora veramente perfettisimo & purissimo, riceve in se l'impressione dell'oro purissimo & dell'argento … Mercurio è recipiente universale di tutte le cose naturali, & loro virtù, & principalmente dell'oro."

26 On the complex relationship between alchemy and astrology, see William R. Newman and Anthony Grafton, "Introduction: The Problematic Status of Astrology and Alchemy in Premodern Europe," in *Secrets of Nature: Astrology and Alchemy in Early Modern Europe* (Cambridge, MA: MIT Press, 2001), 1–38. It must be noted that mercury was usually associated with the planet Mercury, but here it is associated with the Moon (*Luna*). This seems part of a Renaissance tradition connected with John Dee's *Monas hieroglyphica*, where mercury is described as being lunar; see "Theorem XII," *Monas hieroglyphica* (Antwerp: Silvius, 1564), 14.

ent of the Sun's rays, so can mercury capture and embody the perfection of gold. The author seems to allude to the trope of Christ as philosophers' stone (or in this case, Philosophical Mercury) by suggesting that mercury, purified philosophically, becomes "the son of man" (*figliuolo dell'huomo*), and "fruit of the virgin" (*frutto della vergine*), and it thus arises in the air and is converted into spirit.[27] This religious allegory is completed by a reference to the *Emerald Tablet* of Hermes Trismegistus: "It rises from the earth to heaven, and thus obtains the virtue of things superior and inferior."[28] The author concludes, mercury "cleanses itself of its impure terrestrial nature, and acquires celestial nature."[29]

Thus, in a few lines, the author displays his extensive knowledge of alchemical philosophy: the topics of alchemy as lower astronomy, as religious allegory, and in the *Emerald Tablet*, all set in the context of a "mercury-alone" doctrine. These were themes that originated in medieval alchemy; however, *La fonderia* also evinces the influence of Renaissance alchemy, particularly of Marsilio Ficino (1433–1499). Ficino had famously associated the Neoplatonic/Stoic concept of *spiritus mundi* with alchemical doctrine, more specifically with the quintessence of Johannes de Rupescissa (c. 1310–1366/1370) and Pseudo-Lull, as well as the elixir of the "Arab astrologers."[30] Ficino believed that the spirit of the world was chiefly found in gold, not in mercury, as *La fonderia* claims, and that it resided in the Sun, not "the bowels of the earth."

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27 On the topic of Christ as the philosophers' stone, see, for instance, Leah DeVun, *Prophecy, Alchemy and the End of Time: John of Rupescissa in the Late Middle Ages* (New York: Columbia University Press, 2009), 109–116.

28 *La fonderia*, 4: "Sale di terra al Cielo, e così piglia virtù delle cose superiori, & dell'inferiori." The most famous version of the Latin *Emerald Tablet* (12th century) reads: "Ascendit à terra in coelum, interumque descendit in terram, & recipit vim superiorum & inferiorum" (approximately, "It ascends from the earth into heaven and then again it descends to the earth and receives the force of things superior and inferior"), "Tabula smaragdina Hermetis Trismegisti," in *De alchemia*, ed. Chrysogonus Polydorus (Nuremberg: Petreius, 1541), 363.

29 *La fonderia*, 4: "così si spoglia della sua immonda natura terrestre, & si veste di natura celeste."

30 On Ficino's alchemy, see Sylvain Matton, "Ficin et l'alchimie: Sa position, son influence," in *Alchimie et philosophie à la Renaissance: Actes du colloque international de Tours* (4–7 Décembre 1991), ed. Jean-Claude Margolin and Sylvain Matton (Paris: Vrin, 1993), 126–190; [Heinrich Cornelius Agrippa], *De arte chimica* (*On Alchemy*). *A Critical Edition of the Latin Text with a Seventeenth-Century English Translation*, ed. Sylvain Matton (Paris-Mailand: SEHA-Arché, 2014). On the association between the *spiritus mundi* and "a certain spirit drawn from gold," the same that "Arabic astrologers called elixir," see Marsilio Ficino, *Opera omnia*, I (Basel, 1576), 534–535.

The doctrine that *La fonderia* espouses is closer to that of Jean Brouaut (c. 1535–c. 1603), a little-known French physician.[31] In *Trois livres des elements chimiques et spagyriques de l'esprit du monde* (Three Books of the Alchemical and Spagyrical Elements of the Spirit of the World), a manuscript dated c. 1580–1585, Brouaut claimed that the *spiritus mundi* is infused into earth from the air.[32] The *spiritus* then begins to corporify in the centre of the earth, where it assumes the first body of a humid fire, which is "the Mercury of Mercuries," that is, philosophical Mercury.[33] Brouaut also speculated that this philosophical Mercury is the true universal medicine, and associated this view with Paracelsus, who according to him rejected common mercury in favour of the philosophical one as the supreme panacea.[34]

Despite such similarities, it is unlikely that the author of *La fonderia* directly knew Brouaut's writings, because they were unpublished until 1621, when they appeared under the name of Clovis Hesteau de Nuysement.[35] Yet such ideas seemed to have been common to certain circles of alchemists in the period. A similar doctrine was espoused by Michael Sendivogius (1566–1636) in his *De lapide philosophorum Tractatus duodecim* (Twelve Treatises on the Philosophers' Stone) published the same year as *La fonderia* (1604). In comparison to *La fonderia*'s author and Brouaut, Sendivogius did not use the term *spiritus mundi*,[36] and did not cite Paracelsus, but otherwise the scheme is comparable:

31 I have not been able to consult the original manuscript. Henceforth Brouaut's theories are given as espoused in the version edited by Clovis Hesteau de Nuysement "Traictez du vray sel secret des Philosophes, et de l'Esprit universe du Monde," in *Traittez de l'harmonie et constitution generalle du vray sel, secret des Philosophes, & de l'Esprit universel du monde, suivant le troisiesme Principe du Cosmopolite*, ed. Clovis Hesteau de Nuysement (Paris: Perier et Buisard, 1621), 1–326. Brouaut's manuscripts will be edited by Sylvain Matton and Didier Kahn, according to a private communication by Didier Kahn.

32 [Brouaut], "Traictez," 43–51.

33 [Brouaut], "Traictez," 72–74.

34 [Brouaut], "Traictez," 247–248.

35 Wallace Kirsop has shown that Nuysement was not the author of the *Traittez* as it had been thought for a long time; "Clovis Hesteau, sieur de Nuysement, et la literature alchimique de la fin du XVIe siècle et du debut du XVIIe siècle" (Paris, 1960). It is worth noting that Paolo Galluzzi found a Tuscan translation of what he deemed to be the 1621 publication (MS Ashburnham 388), in the Biblioteca Laurenziana, under the title *Dispensa delle cose meravigliose della natura et dell'arte cavata et formata dall'archetipo, overo esemplare della natura naturante. Trattato dell'Harmonia, constitutione o fabrica generale del vero sale secreto de' filosofi*. He was, however, not able compare it with the Paris publication or confirm whether it came from Don Antonio or Christine of Lorraine. See Galluzzi, "Motivi paracelsiani," 45, n. 72.

36 Nevertheless, "Nature" seems to play the role of the *spiritus mundi* here, as it is described

the four elements engender a seed in the "womb" of the earth, which is then distilled to the earth in the form of a vapour also called Philosophical Mercury.[37] This vapour is the prime matter of all things on earth. Sendivogius published his work in Prague,[38] which *La fonderia*'s author also visited (see below), so there is more likelihood that the latter could have encountered Sendivogian theories during his travel there.

4 Paracelsianism in *La fonderia*

There is nothing similar to this philosophical discussion of Mercury in the rest of *La fonderia*. Yet the author evinces interest in Paracelsianism, including, to some extent, the three-principle theory of Paracelsus.[39] The first chapter discourses of mercury, the second of sulphur, and the third salt. Unfortunately, there is no theoretical discussion of the latter two principles, which seem to be understood quite literally. The author describes the admirable medical potencies of sulphur and salt, following this up by a series of recipes on flowers of sulphur, vitriol sulphur, saltpetre, peregrine salt and others.

Paracelsian allegiance is also evident in the author's extended chapter on antimony, which is included in the first book, and by *La fonderia* standards is remarkably long (nine pages). The writer rejects the views of Dioscorides, Arnald of Villanova, Pietro Andrea Matthioli, and more generally those of the medical school of Bologna on antimony.[40] The authority on the matter is only Paracelsus, who praised a certain secret tincture of antimony that can be used against all diseases.[41] In Paracelsian style, the writer engages in a polemic

as a "volatile spirit" (*spiritus volatilis*); Divi Leschi Genus Amo [Michael Sendivogius,] *De lapide philosophorum Tractatus duodecim* ([Prague]: [Schumann], 1604), 15.

37 [Sendivogius], *De lapide philosophorum*, 34.

38 See Rafał T. Prinke, "New Light on the Alchemical Writings of Michael Sendivogius (1566–1636)," *Ambix* 63, no. 3 (2016): 230.

39 On this topic, see Reijner Hooykaas, "Der Elementenlehre des Paracelsus," *Janus* 39 (1935): 175–188, and Pagel, *Paracelsus*, 82–84, 100–104.

40 *La fonderia*, 32. On the history of antimony, see Ian McCallum, *Antimony in Medical History: An Account of the Medical Uses of Antimony and its Compounds since Early Times to the Present* (Edinburgh: Pentland, 1999).

41 The reference is most likely to the Tincture of Antimony described in *Grosse Wundartzney* (1536), where the tincture of antimony, also called "flowers of antimony," is praised as a purgative that perfectly cures the human being. This tincture, Paracelsus says, is something discovered in modern times (presumably by himself); Philippus Theophrastus Bombast von Hohenheim Paracelsi gennant, "Das Ander Buch von der Grossen Wundartzney,"

against the un-Christian physicians who flee at the first sign of the plague but still condemn any good healer who does not belong to their ranks.[42]

The authority of Paracelsus is again invoked when the author further discusses preparations of gold. He praises the medical use of the "philosophical gold" produced without corrosives or poison, which is the same as the elixir of life and potable gold.[43] The author refers again to Paracelsus, who could heal leprosy and other diseases with his quintessence and oil of gold.[44] Then *La fonderia* discusses the benefits of all the other metals, prepared philosophically, before concluding the first book, rather incongruously, with preparations from human blood.[45]

Paracelsus continues to be the guiding light in the second book, on oils of metals, which contains "various means of extracting oil, after the commentators of Paracelsus and others."[46] It is mostly a compilation of recipes collected from Paracelsus himself, but also chiefly from the early Paracelsian Johann Gunther von Andernach (c. 1497–1574), and ironically, the anti-Paracelsian Conrad Gessner (1516–1565).[47]

The second book also contains several recipes originating from Tomaso Zefiriele Bovio (1521–1609).[48] Bovio was a Veronese nobleman and Paracelsian

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Chirurgische Bücher und Schrifften, ed. Johannes Huser (Strasbourg: Lazar Zetzner, 1605), 104–105.

42 *La fonderia*, 33. This may be an indication that the author was not a trained physician.

43 *La fonderia*, 48.

44 Paracelsus does praise preparations of gold in several treatises, such as "Archidoxis," "De restauratione et renovatione," or "De vita longa;" see Philippus Theophrastus Bombast von Hohenheim, Paracelsi gennant, *Sechster Theil der Bücher und Schrifften*, ed. Johannes Huser (Basel: Conrad Waldkirch, 1590), VI, 30, 109, 159 and elsewhere. Paracelsus's works have recently been transcribed in searchable format in the THEO database edited by Urs Leo Gantenbein and Didier Kahn; see https://www.paracelsus-project.org/, accessed July 17, 2021.

45 *La fonderia*, 63.

46 *La fonderia*, 65: "De gl'olii de metalli, Libro secondo, Nel quale si descrivano varij modi del cavare olio, secondo alcuni commentatori di Paracelso, & altri."

47 On Johann Gunther von Andernach, see Allen Debus, *The Chemical Philosophy* (Mineola, NY: Dover, 1977), 139–145; on Gessner, see Charles D. Gunnoe, Jr, "Thomas Erastus and His Circle of Anti-Paracelsians," in *Analecta Paracelsica*, ed. Joachim Telle (Stuttgart: Franz Steiner, 1994), 127–145 (134–137), and Charles Webster, "Conrad Gessner and the Infidelity of Paracelsus," in *New Perspectives on Renaissance Thought: Essays in the History of Science, Education and Philosophy*, ed. John Henry and Sarah Hutton (London: Duckworth, 1990), 13–23. The recipes originate from *Thesaurus Evonymi Philiatri de remediiis secretis* (Lyon: Anton Vincent, 1552) and Andernach's monumental work *De medicina veteri et nova tum cognoscenda, tum faciunda comentarij duo* (Basel: Henric Petri, 1571).

48 On Bovio, see Maria Pia Vannoni, "Il "Medico dalla spada": Tomaso Zefiriele Bovio," *Bruniana & Campanelliana* 17, no. 1 (2011): 81–96; Alfonso Ingegno, "Il Medico de' disperati e

medical practitioner who distinguished himself as a vehement critic of traditional medicine, which he accused of lack of knowledge of metallic medicine and distillation. Bovio was renowned in the era for his secret medicines which he coded by attractive names such as Hercules or Gratiola. *La fonderia* provides the recipe for the Hercules, which originates from Bovio's *Flagello dei medici rationali* (1583).[49] It also extolls the properties of the oil of vitriol as prepared by Bovio.[50] The emphasis placed on Bovio's recipes and the praise bestowed upon "doctor Zeffiriele" for his medicines of marvellous virtue suggest the possibility that the author may have encountered Bovio, who was still alive at the time of the publication of *La fonderia*.

The third book, dedicated to plants and some minerals, also draws on Paracelsians. Here, the main authorities, besides Paracelsus, are Leo Suavius, the pseudonym of the eclectic humanist Jacques Gohory (1520–1576), and Leonard Thurneysser (1531–1596).[51] Yet the author also gives a particular attention to nitre, called the best among salts, out of which "endless medicines" could be extracted.

This is the only place where the author directly refers to the method of preparation of nitre at the Casino di San Marco.[52] He describes in detail how

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abbandonati: Tommaso Zeffiriele Bovio (1521–1609) tra Paracelso e l'alchimia del seicento," in *Cultura popolare e cultura dotta nel seicento* (Milan: FrancoAngeli, 1983), 165–174; Mariacarla Gadebusch Bondio, "Paracelsismus, Astrologie und ärztliches Ethos in den Streitschriften von Tommaso Bovio (1521–1609)," *Medizinhistorisches Journal* 38 (2003): 215–244, and Giancarlo Zanier, "La medicina paracelsiana in Italia: aspetti di un'accoglienza particolare," *Rivista di Storia della Filosofia* 40 (1985): 627–653.

49 Zefiriele Tomaso Bovio, *Flagello dei medici rationali* (Venice: Domenico Nicolini, 1583), 5–6.

50 The reference is to Zefiriele Tomaso Bovio, *Fulmine contro de' medici putatiti rationali* (Verona: Francesco dalle Donne, 1602), 146.

51 On Gohory, see Didier Kahn, *Alchimie et Paracelsisme en France à la fin de la Renaissance* (Geneva: Droz, 2007), 149–150, 154–171. On Leonhard Thurneysser (1531–1596), see Paul H. Boerlin, *Leonhard Thurneysser als Auftraggeber: Kunst im Dienste der Selbstdarstellung zwischen Humanismus und Barock* (Basel: Birkhauser, 1976); Wilhelm Kühlmann and Joachim Telle, eds., *Corpus Paracelsisticum*, 4 vols. (Berlin: de Gruyter and Tübingen: Max Niemeyer Verlag, 2001–2013), II (2004), 436–439. On Thurneysser's legendary exploits, including the famous transmuted nail supposedly kept in the Grand Duke of Florence collection, see particularly Didier Kahn, "The Significance of Transmutation in Early Modern Alchemy: The Case of Thurneysser's Half-Gold Nail," in *Fakes!? Hoaxes, Counterfeits, and Deception in Early Modern Science*, ed. Marco Beretta and Maria Conforti (Sagamore Beach, FL: Science History Publications, 2014), 35–68. Antonio de' Medici's library contained books by both Gohory and Thurneysser; see Galluzzi, "Motivi paracelsiani," 41.

52 *La fonderia*, 101: "L'infiniti medicamenti che si fanno con questo Nitro, & l'utile grande che però ne arreca al genere humano, l'hà fatto meritevole del primo luogho fra' Sali, nella fonderia di V.E. Illustrissima, nella quale si suole prepare in questo modo."

the nitre needs to be left in the Sun to whiten, calcined, and then prepared with sulphur.[53] The method is followed by a large number of recipes. Salt nitre is recommended for anything from leprosy to teeth complaints and lung diseases. Some of the applications of salt nitre are rather more surprising, such as whitening hair and cleaning feet.

Interestingly, the author ends his book with a final statement of support for Paracelsian doctrine, in this case the principle of "like cures like." This, however, is not accompanied by a polemical discussion, but simply given in the context of salts: "salt only with salt can be solved, if you understand well. And thus you will know that it is not otherwise true that contrary cures another contrary, but the similar cures its similar."[54]

This statement makes it clear that that the author subscribes to Paracelsianism, but it is not the militant form espoused by the likes of Bovio or his predecessor, the famous Leonardo Fioravanti (1517–1588).[55] Polemic against contemporary physicians is indeed present in his discourses on mercury and antimony, but otherwise criticism of ancient medicine is missing. In fact, the author quotes from Galen approvingly and suggests that some of the remedies rediscovered in present times were known to the ancients. This places him in the category of moderate Paracelsians that tried to harmonise ancient teachings with the new doctrine of Paracelsus. It is telling that the Paracelsian the author cites the most is Johannes Gunther von Andernach, who espoused similar principles of concordance.[56]

5 The Issue of Authorship

At this point, we may be ready to reflect on the authorship of *La fonderia*. It is the work of one person, whose voice is present throughout the work as an

53 Ibid.

54 Ibid., 140: "Et il sale con il sale solamente, si può risolvere, se bene intendi. Et così saperrai che non è altrimenti vero che il contrario guarisca l'altro contrario, mà come il simile sana il suo simile." The remark seems connected with the author's deliberately obscure notes on the "Green Lion," see further my comments on this.

55 On Fioravanti, see William Eamon, *The Professor of Secrets: Mystery, Medicine, and Alchemy in Renaissance Italy* (Washington, DC: National Geographic Society, 2010), and Eamon, *Science and the Secrets of Nature*, 168–193.

56 Allen Debus classified von Andernach as part of a medical movement that sought to reconcile the Paracelsians with ancient medicine, *The Chemical Philosophy*: *Paracelsian Science and Medicine in the 16th and 17th Centuries*, 2nd ed. (Mineola, NY: Dover Publications, 2002), 140.

authoritative, self-aware and distinct one. The author clearly sees himself as an accomplished alchemist with enough experience and authority to write a book for the Medici prince. He even promises to write more in the future: "Of these things we will treat more extensively in our book on minerals, God willing."[57]

Even more interestingly, the tone of the author is rarely deferential or formal. It is true that he usually employs the impersonal "we" to refer to himself, but other times he reverts to the colloquial "I." For instance, he states that, "having deliberated to finish the present treatise … the Hercules of Zeffiriel Tommaso Bovio came into my mind … a fact which made me break the order that I had devised to discourse about it here."[58]

In fact, the author seems to position himself as a kind of alchemical instructor to Don Antonio. The discussion of the preparation of nitre is telling enough, since the author describes the method used in the Casino as if Don Antonio did not already know it. It is probable that the preparation of nitre as described in *La fonderia* had predated Don Antonio.[59]

The fact that *La fonderia* is clearly authored by one person who insists on his own knowledge and experience raises two important questions. The first is why the work was published anonymously; the second is why the publication was given the title *La fonderia dell'Illustrissimo et Eccellentissimo Signor Don Antonio*. I can only venture some answers. It is likely that the author worked in the Casino *fonderia*, perhaps even as a supervisor of works. Many if not all the recipes were presumably tried out at the Casino. Consequently, Don Antonio may have felt that the text was representative of the Casino's activities in general. In this sense, and despite the clear authorial voice, the volume could be taken to represent the work carried out in the Casino.

At this stage of research, there are two candidates for the authorship of *La fonderia*. In a recent article, Fanny Kieffer pointed to one unidentified "Giovanni alchemista" as being the author (or recorder) of most of the recipes in

57 *La fonderia*, 4: "Di queste cose tratteremo al lungo nel nostro libro de minerali concedendolo Iddio."

58 Ibid., 96: "Havevo deliberato dar fine al presente trattato, quando m'è caduto nella mente l'Hercole di Zettiriel (sic) Tommaso Bovio, tanto potente, & di si maravigliose virtù, che m'hà fatto rompere il filo, dell'ordine incominciato, per soggiugnerlo in questo luogho."

59 From Gussoni's testimony we know that the production and "multiplication" of salt nitre was undertaken at the Casino under the patronage of Francesco I (1576); Gussoni, in Albèri, *Relazione*, 379: "Ha, per quanto mi ha detto lui, ritrovato un modo di moltiplicare il salnitro, pigliando, come dice, novanta libbre di sale e dieci di salnitro, e poi facendolo con alcune sue arti diventar tutto salnitro, e così novecento con cento ne fa mille."

the *Apparato*.[60] Just as in *La fonderia*, he was writing about his experience and experiments in the first person.[61] Yet there is another possible candidate to consider: Antonio Neri himself, as discussed in the next section.

One particular biographical note may possibly help in eventually identifying the author of *La fonderia*. The author maintains that at some point he was in Prague, where he learned of a certain recipe of potable gold. After he paid 24 ducats for it, he discovered that it was no good. Wryly, he adds: "I give [the recipe] to you for free and make sure you don't give it to anyone to drink."[62] It is tempting to think that the author may have visited Prague after Emperor Rudolf II (1552–1612) moved his imperial court there (1583). It was during this time that Prague became not just the capital of the Holy Roman Empire, but, arguably, the capital of European alchemy.[63]

6 Annotations and the Green Lion

The *La fonderia* copy in the British Library is heavily annotated, suggesting that it was actively used by at least one person. The marginalia belong to a single neat hand and include 42 endorsements, comments and conjectures, beginning with p. 10.

An analysis of the comments suggests that the annotator is someone who had similar interests to the author and tried out several of the recipes for medical purposes. On p. 84, for instance, the annotator comments on the recipe for the tincture of sulphur: "This is a wonderful secret that I experimented a thousand times for fevers."[64] Just below, he notes on sublimed sulphur that "I have experimented this many times and it is the best medicine to be made for fevers

60 Kieffer, "The Laboratories of Art and Alchemy," 114. In 1579 a certain Messer Giovanni Battista Framberti of Mantua was working there, tying with another master alchemist for the highest salary in the Casino. See "Stipendiati del Casino San Marco" (1580), Archivio di Stato di Firenze, Mediceo del Principato 616, ins. 20, fol. 377, reproduced in Beretta, "Temporal and Material Powers," 143. It is not however clear that Framberti continued working there at the beginning of the 17th century.

61 Kieffer, "The Laboratories of Art and Alchemy," 114.

62 *La fonderia*, 53: "In Praga la comprai ventiquattro ducatoni, ma io te la dono, & guardati di non darl'à bere à nessuno."

63 On Rudolf II's passion for alchemy, see R.J.W. Evans, *Rudolf II and His World: A Study in Intellectual History (1576–1612)* (Oxford: Clarendon Press, 1973); for more recent research, see Ivo Purš and Vladimír Karpenko, eds., *Alchemy and Rudolf II. Exploring the Secrets of Nature in Central Europe in the 16th and 17th centuries* (Prague: Artefactum, 2016).

64 *La fonderia*, 84: "Bellissimo segreto è questo è mile volte lo sperimentato nelle febbri."

of any kind."[65] The annotator clearly holds *La fonderia* in high regard, describing the red oil of vitriol as "a great secret," a recipe for cleaning feet with salt nitre as "very good," balsam of simple sulphur as "a most beautiful tincture," or the balsam of composite sulphur as "sure defence against the plague."[66] There is no sign of disagreement with the recipes. On one occasion, however, the annotator offers an alternative to a recipe: for the "oil of salt" (p. 87), he proposes rock alum as an adequate substitute to salt nitre.

Of all the notes, however, the most fascinating deal with the annotator's interest in *La fonderia*'s notes on the "Green Lion" (*Lione* or *Leon Verde*). Thus, the annotator bookmarks the author's treatment of this topic on pp. 16 and 17, under the heading "Aggiunta" ("Additional Note") to "Broth of Common Salt" (*Del brodo di Sale comune*) (Figs. 6 and 7).

The annotated passage reads:

> And by my faith, which is that thing in this subject that is not deserving of the name of marvel? The conjunction of the salt prepared with its agent that it cannot burn, which never ceases its operation unless it is reduced in a better form: again a fusible salt which by itself penetrates, and its entire body is converted into the Green Lion, and into immortal oil; this same spirit dissolves all things, and I will say many other things about this subject in another place.[67]

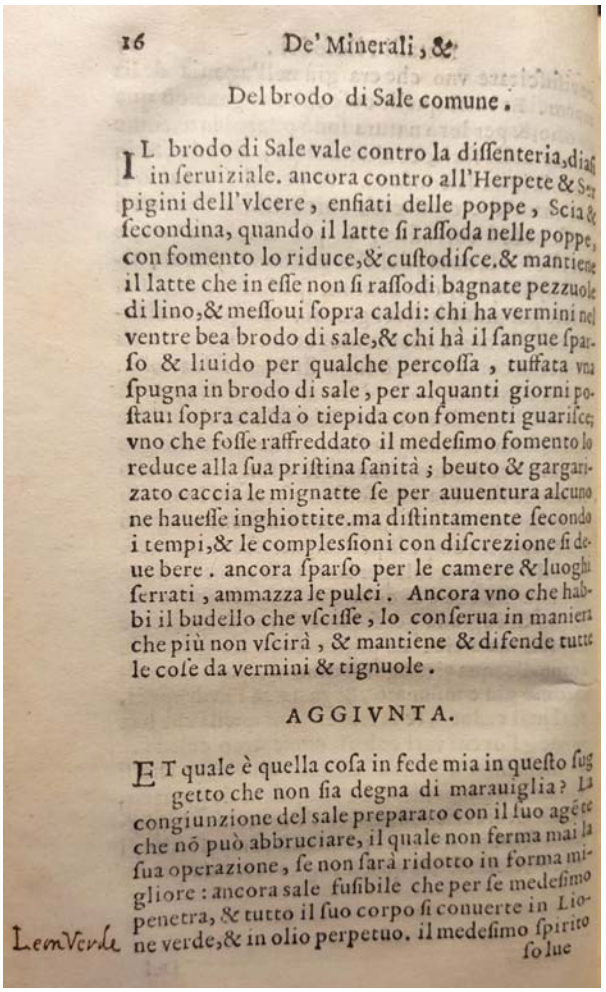
Here the Green Lion, a *Deckname* originating in medieval alchemy, is described as being the product of at least two salts.[68] The result is an universal solvent,

65 Ibid.: "Molte volte lo sperimentato et è il meglio medicamento ch'si faccia per le febbri d'ogni sorte."

66 Ibid., 107: "buonisimo," 98, "olio rosso del ☉ grandissimo segreto," 85, "Bellisima tintura," 85, "Difensivo sicuro per la Peste."

67 Ibid., 16–17: "Et quale è quella cosa in fede mia in questo suggetto che non sia degna di maraviglia? La congiunzione del sale preparato con il suo agente che non può abbruciare, il quale non ferma mai la sua operazione, se non sarà ridotto in forma migliore: ancore sale fusibile che per se medesimo penetra, & tutto il suo corpo si converte in Lione verte, & in olio perpetuo, il medesimo spirito solve tutti i corpi, & moltre altre cose dirò intorno al medesimo suggetto, in altro luogo."

68 The Green Lion first occurs in *De compositione alchemiae* (first translated in 1144) sometimes known as the *Testament* of Morienus; it appears in *Rosarium philosophorum* as "our Mercury, which is the Green Lion that devours the Sun;" see *Rosarium Philosophorum: Ein alchemisches Florilegium des Spätmittelalters* (*Faksimile der illustrierten Erstausgabe Frankfurt 1550*), ed. Joachim Telle (Weinheim: VCH, 1992), I, 174; it also features in Pseudo-Lull's *Testamentum*, 104r, 105r.



16 De' Minerali, &

Del brodo di Sale comune.

IL brodo di Sale vale contro la diſſenteria, diaſ in ſeruiziale. ancora contro all'Herpete & Se pigini dell'vlcere, enfiati delle poppe, Scia & ſecondina, quando il latte ſi raſſoda nelle poppe, con fomento lo riduce, & cuſtodiſce. & mantiene il latte che in eſſe non ſi raſſodi. bagnate pezzuole di lino, & meſſoui ſopra caldi: chi ha vermini nel ventre bea brodo di sale, & chi hà il ſangue ſparſo & liuido per qualche percoſſa, tuffata vna ſpugna in brodo di sale, per alquanti giorni poſtaui ſopra calda o tiepida con fomenti guariſce; vno che foſſe raffreddato il medeſimo fomento lo reduce alla ſua priſtina ſanità; beuto & gargarizato caccia le mignatte ſe per auuentura alcuno ne haueſſe inghiottite. ma diſtintamente ſecondo i tempi, & le complesſioni con diſcrezione ſi deue bere. ancora ſparſo per le camere & luoghi ſerrati, ammazza le pulci. Ancora vno che habbi il budello che vſciſſe, lo conſerua in maniera che più non vſcirà, & mantiene & difende tutte le coſe da vermini & tignuole.

AGGIVNTA.

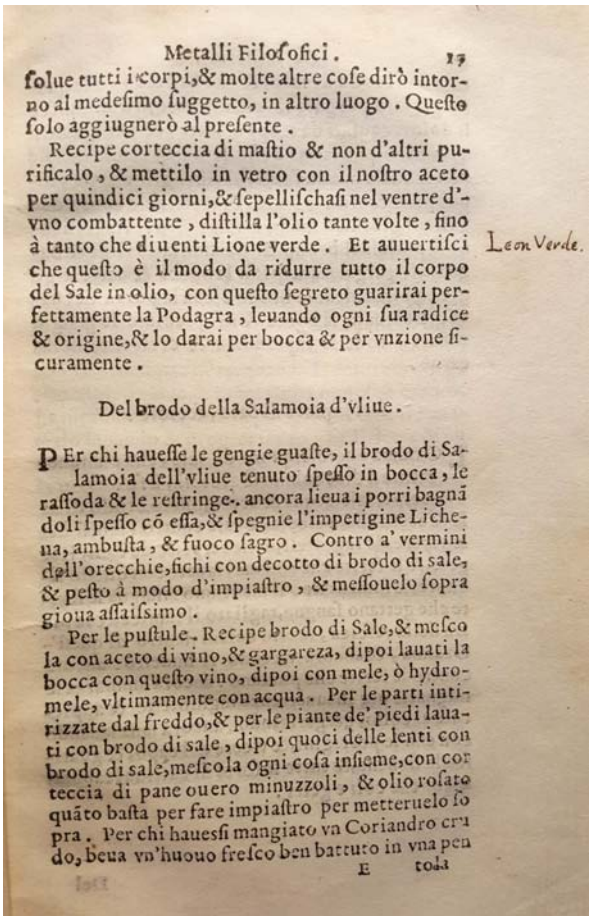
ET quale è quella coſa in fede mia in queſto ſuggetto che non ſia degna di marauiglia? La congiunzione del sale preparato con il ſuo agente che nō può abbruciare, il quale non ferma mai la ſua operazione, ſe non ſarà ridotto in forma migliore: ancora sale fuſibile che per ſe medeſimo penetra, & tutto il ſuo corpo ſi conuerte in Lione verde, & in olio perpetuo. il medeſimo ſpirito ſo lue

Leon Verde

FIGURE 6
Leon Verde Marginalia (1) COURTESY OF THE BRITISH LIBRARY BOARD, GENERAL REFERENCE COLLECTION, C.108.FF.25, 16

which is also described as an "immortal oil" (by which the author may mean that its action does not wane in time).[69]

69 *La fonderia*'s Green Lion recipe suggests that it is an universal solvent that does not cease in its action. The term "universal" was commonly used in many medieval alchemical texts to refer to solvents that could dissolve gold (probably *aqua regia*). The emphasis on its ability to solve all things, its description as being "immortal," and at having continuous, unceasing action foreshadows Jan Baptist Van Helmont's description of the Alkahest; on Van Helmont's Alkahest see Georgiana D. Hedesan, *An Alchemical Quest for Universal Knowledge: The Christian Philosophy of Jan Baptist Van Helmont (1579–1644)* (London: Routledge, 2016), 177–182; on Van Helmont's description of the Alkahest as "immortalis," *Ortus medicinae* (Amsterdam: Elzevir, 1648), 628.



Metalli Filoſofici. 17
ſolue tutti i corpi, & molte altre coſe dirò intorno al medeſimo ſuggetto, in altro luogo. Queſto ſolo aggiugnerò al preſente.

Recipe corteccia di maſtio & non d'altri purificalo, & mettilo in vetro con il noſtro aceto per quindici giorni, & ſepelliſchaſi nel ventre d'vno combattente, diſtilla l'olio tante volte, fino à tanto che diuenti Lione verde. Et auuertiſci che queſto è il modo da ridurre tutto il corpo del Sale in olio, con queſto ſegreto guarirai perfettamente la Podagra, leuando ogni ſua radice & origine, & lo darai per bocca & per vnzione ſicuramente. Leon Verde.

Del brodo della Salamoia d'vliue.

PEr chi haueſſe le gengie guaſte, il brodo di Salamoia dell'vliue tenuto ſpeſſo in bocca, le raſſoda & le reſtringe. ancora lieua i porri bagnãdoli ſpeſſo cõ eſſa, & ſpegnie l'impetigine Lichena, ambuſta, & fuoco ſagro. Contro a' vermini dell'orecchie, ſichi con decotto di brodo di ſale, & peſto à modo d'impiaſtro, & meſſouelo ſopra gioua aſſaiſsimo.

Per le puſtule. Recipe brodo di Sale, & meſcola con aceto di vino, & gargareza, dipoi lauati la bocca con queſto vino, dipoi con mele, ò hydromele, vltimamente con acqua. Per le parti intirizzate dal freddo, & per le piante de' piedi lauati con brodo di ſale, dipoi quoci delle lenti con brodo di ſale, meſcola ogni coſa inſieme, con corteccia di pane ouero minuzzoli, & olio roſato quãto baſta per fare impiaſtro per metteruelo ſopra. Per chi hauesſi mangiato vn Coriandro crudo, beua vn'huouo freſco ben battuto in vna pen

E tola

FIGURE 7
Leon Verde Marginalia (2) COURTESY OF THE BRITISH LIBRARY BOARD, GENERAL REFERENCE COLLECTION, C.108.FF.25, 17

These statements are followed by an incomplete and coded recipe involving bark of mastic placed in the furnace with "our" vinegar (*nostro aceto*) for fifteen days; the alchemist should then "bury" (or "confine") it in the "belly of a fighting spirit," and distil the oil several times until it becomes the Green Lion. The secret, we are told, perfectly cures gout.[70]

Later, the annotator marks out a passage on the preparation of the oil of gold (p. 65), which he glosses as "solution of gold by means of the Green Lion

70 *La fonderia*, 17. The whole recipe runs: "Recipe corteccia di mastio & non d'altri purificarlo, & mettilo in vetro con il nostro aceto per quindici giorni, & sepellischasi nel ventre d'uno combattente, distilla l'olio tante volte, fino à tanto che diventi Lione verde. Et avvertisci che questo è il modo da ridurre tutto il corpo del Sale in olio, con questo segreto guarirai perfettamente la Podagra."

which must be understood by his vinegar."[71] Here the annotator goes beyond the author's text to interpret the term "your vinegar" (*tuo aceto*) as being a coded name for the Green Lion itself.[72] This is somewhat surprising, since in the "Green Lion" recipe itself "our vinegar" is described as one of the components that yield the Green Lion. Yet the annotator seems to have judged, probably based on his own reading of medieval alchemical texts, that the Green Lion and the vinegar *Deckname* referred to the same thing, that is, a special solvent for gold.[73]

Further on, on p. 77, the annotator glosses the recipe for oil of orpiment, or of arsenic (*olio d'orpimento, overo d'arsenico*), which originates from Andernach.[74] The annotator writes on the margin: "Observe that this work has similitude with that of Father Antonio Neri where he talks about our Green Lion."[75]

The mention of Neri is worth pondering further. According to Beretta, Neri may have been involved in the composition of *Apparato della fonderia*. Could he have been the author of *La fonderia*? Certainly, Neri himself was a strong supporter of Paracelsus, and he worked in Casino di San Marco from 1601.[76] Though only 28 at the time *La fonderia* was published, he had already acquired

71 Ibid., 65: "Sulutione di ☉ per mezzo del Lion Verde quale si deve intendere per il suo Aceto." The recipe involves mixing calcined gold with "your vinegar" (*tuo aceto*); this, we are told, is a "philosophical and magisterial solution" (*soluzione filosofica & magistrale*). Philosophical vinegar (*acetum acerrimum*) occurs in the *Turba philosophorum* as a solvent that destroys gold; see "Turba philosophorum," in *Artis auriferae quam Chemiam vocant* (Basel: Waldkirch, 1593), I, 11 (under the saying of Pythagoras). The term *acetum acerrimum*, "which converts gold into a spirit," also occurs in the Pseudo-Lullian *Experimenta*, in *Raymundi Lullii Maioricani philosophi sui temporis doctissimi libelli aliquot Chemici* (Basel: Pietro Perna, 1572), 276. The impossibility of solving gold with a wine-based spirit was recognised in the period, leading to creative solutions, such as that of George Ripley; see Jennifer M. Rampling, *Experimental Fire: Inventing English Alchemy, 1300–1600* (Chicago, IL: Chicago University Press, 2020), 88 ff.

72 *La fonderia*, 65.

73 As pointed out in note 71 above, the *acetum* appears as a gold solvent in the *"Turba philosophorum,"* and the Pseudo-Lullian *Experimenta*; the Green Lion plays the same role in *Rosarium philosophorum*, 29–30, 33, 174.

74 The annotator makes a connection between this recipe to a similar one ("oil of orpiment") given on p. 40, a fact which further shows his close reading and probable practical use of the text.

75 *La fonderia*, 77: "Oserva questo opera à simiglianza di quella di P. Ant. Neri d'onde dice nos viridis Leo." It would be worth comparing this recipe with those of Neri. At this stage, I have not discovered where Neri talked about the Green Lion, as the manuscripts I have seen in the Glasgow and Venice libraries do not mention this term. I have not carried out research on the many more manuscripts related to Neri, particularly in the BNCF.

76 On Neri's Paracelsianism, see Maria Grazia Grazzini, "Discorso sopra la Chimica: The Paracelsian Philosophy of Antonio Neri," *Nuncius* 27 (2012): 411–467.

an alchemical reputation; it was indeed claimed that, at the age of only twenty, he had performed a public transmutation.[77] Prior to *La fonderia*, he had also prepared the astonishing but understudied manuscript *Il Tesoro del mondo* (1598–1600).[78] Yet his alchemical knowledge may not (completely) have been the fruits of his own labour.[79] It seems more likely that Neri was himself a recipient of knowledge transferred to him from other alchemists.

Although Neri's authorship of *La fonderia* is a possibility, the annotation is not an evidence either for or against this hypothesis. Unfortunately, at this stage we do not know anything about the annotator, and whether this person knew the true author of the work or not. The annotations show that their author was a medical alchemist who was particularly interested in alchemical work on metals and minerals, and above all in the secret of the Green Lion. This could mean he may have lived any time during the 17th century, or even in the early 18th. Nevertheless, an important aspect that might narrow down the attribution is that the annotator must not only have had access to this Medici copy, but was actually able to make observations on it. Further palaeographical and prosopographical research in medical-alchemical manuscripts associated with the Medici family could shed further light on the annotator.

7 Conclusions

This initial lecture of *La fonderia* confirms the centrality of alchemy at the Casino di San Marco around the year 1604. It also opens up further perspectives on Paracelsianism at the Casino. In his landmark article of 1982, Paolo

77 This piece of information comes from two sources: a contemporary of Neri, Guido Antonio Melani, left a testimony regarding Neri's feat; BNCF, "Relazione di Guido Antonio Melani Partitore," Palat. Targioni II, 9^{v}–10^{v}; Galluzzi, "Motivi paracelsiani," 53; the more famous account originates from the physician Giovanni Cinelli, who found the report of Neri's transmutation in a manuscript at the library of the Palazzo Bartolini; see Targioni Tozzetti's *Selve di notizie, spettanti all'origine dè progressi e miglioramenti delle scienze fisiche in Toscani, messe insieme dal Dottor Giovanni Targioni- Tozzetti, per uso del dottor Ottaviano suo figlio*, late 18th century; BNCF, Targ. Tozz. Mss. 189, vol. 8, 147–151.

78 On the manuscript, see Paul Engle, "Depicting Alchemy: Illustrations from Antonio Neri's 1599 Manuscript," in *Glass of the Alchemists: Lead Crystal-Gold Ruby, 1650–1750*, ed. Dedo von Kerssenbrock-Krosigk (Corning: The Corning Museum of Glass, 2008), 48–61.

79 As Beretta points out, *Il Tesoro* suggests that Neri was amassing knowledge from ateliers he had visited; "Glass Making Goes Public," 1056. Guido Antonio Melani, incidentally, pointed out that Neri's supposed transmutation was based on knowledge originating from a "certain German" (perhaps Thurneysser?); "Relazione di Guido Antonio Melani Partitore," 9^{v}–10^{v}; Galluzzi, "Motivi paracelsiani," 53.

Galuzzi first drew attention to the Casino's Paracelsianism, an insight further confirmed by Antonio Clericuzio.[80] *La fonderia* reveals an author who read the Swiss physician's works and those of his followers quite thoroughly. Besides Paracelsian practice (particularly that of antimony), the author also seemed to embrace some of the tenets of Paracelsianism (the medical focus of alchemy, cure by similarity, the emphasis on the medical use of metals and minerals, possibly the *tria prima*). It is true that the author freely combined Paracelsian theory and practice with those of other alchemical currents, yet in this he was not unique. The very existence of a "genuine" form of Paracelsianism is questionable, considering the accretion of pseudo-Paracelsian texts to the authentic corpus and the eclecticism of some of Paracelsus' key followers.[81]

In any case, if we corroborate the Paracelsianism present in *La fonderia* with what is known of the "alchemical" library of Don Antonio,[82] it becomes increasingly clear that Paracelsianism was very much endorsed at the Casino. It is very likely that Don Antonio adopted Paracelsian alchemy out of genuine belief that this was, to use modern terms, cutting-edge science. In this context, we can better understand that *La fonderia* was in some way a programmatic manifesto of the Casino as a repository of the most advanced knowledge of its time. After all, *La fonderia*'s title claimed that the Casino hosted "the entire spagirical art of Theophrastus Paracelsus," a bombastic claim worthy of Paracelsus himself. It was a place that hosted mysterious followers of Paracelsus, in possession of great secrets like the Green Lion and the Philosophical Mercury.

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80 Galluzzi, "Motivi paracelsiani," 36–37; Clericuzio, "Chemical Medicine and Paracelsianism in Italy, 1550–1650," 62.

81 Such as Gerard Dorn, Petrus Severinus or Joseph Du Chesne. On the phenomenon of pseudo-Paracelsianism, see Didier Kahn and Hiro Hirai, "Introduction: Pseudo-Paracelsus: Forgery and Early Modern Alchemy, Medicine and Natural Philosophy," *Early Science and Medicine* 24 (2019): 415–418, and the contributions published in the special volume.

82 Galluzzi, "Motivi paracelsiani," 37–47.