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Maria's *Practica* in Early Modern Alchemy

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1. Introduction

Maria features prominently in the history of alchemy, from Graeco-Roman antiquity to the early modern period. Called by many names throughout the centuries – the divine Maria (Gr. ἡ θεῖα Μαρία), Maria the Copt (Ar. *Māriyya al-Qubṭiyya*), or Maria the prophetess (Lat. *Maria prophetissa*) to name but a few – she was credited with different writings by Graeco-Egyptian, Byzantine, Arabic, and Latin alchemical authors, who also attributed various technical innovations to her. Zosimus of Panopolis (third to fourth centuries) counted the woman among the Jews who openly wrote about the alchemical art. He cites a *Treatise on Furnaces* (καμिनογραφία) ascribed to Maria,¹ which Zosimus extensively used as a reference work for the description of different alchemical devices: in particular, an alembic called *tribikos* (τρίβικος), namely a still with three reception vases (*bikoi*),² and the *kērotakis* (κηροτακίς), an instrument where metallic leaves were exposed to the vapors of dyeing substances.³ Byzantine manuscripts preserve illustrations of these pieces of equipment and the drawing of a *kērotakis* (see fig. 1) was interpreted by the French chemist Marcelin Berthelot as an early reference to the so-called *bain-marie*, even though this technical term never occurs in Byzantine alchemical treatises.⁴

Fig. 2.1 MS *Marcianus* gr. 299, fol. 195v as reproduced and interpreted by Berthelot

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¹ Zosimus, *First Book of the Final Account*, § 2 in André Festugière, *La révélation d'Hermès Trismégiste, vol. 1: L'astrologie et les sciences occultes* (Paris: Les Belles Lettres, 1944), p. 365. The same book – simply referred to as *On Furnaces* (Περὶ καμίνων) and *On Furnaces and Devices* (Περὶ καμίνων καὶ ὀργάνων) – is mentioned in the Zosimus' *On the Letter Omega*, §§ 1 and 17: see Michèle Mertens, *Zosime de Panopolis, Mémoires authentiques* (Paris: Les Belles Lettres, 1995), pp. 1 (with related note 12 on pp. 63-65) and 8.

² See Zosimus, *On the Tribikos and the Tube*, in Mertens, *Zosime de Panopolis*, pp. 14-15.

³ See Zosimus, *On Devices and Furnaces*, §§ 3 and 6 in Mertens, *Zosime de Panopolis*, pp. 24-25 (see also pp. CXXX-CLII).

⁴ See Marcelin Berthelot, Charles-Émile Ruelle, *Collection des anciens alchimistes grecs*, 3 vol. (Paris: G. Steinheil, 1887-1888), vol 1, p. 146.

This paper will focus on Maria the alchemist and her writings in the early modern period. A path through which sixteenth- and seventeenth-century scholars and practitioners came to know this figure is certainly the Arabo-Latin medieval tradition. Both Maria and the famous heating method commonly associated with her name – namely the *balneum Mariae* or, according to Ullmann, *ḥammām Māriya* in Arabic⁵ – are already prominent in medieval alchemical texts, which circulated, often in printed editions, during the early modern period. Arabo-Latin treatises such as the *Turba philosophorum* or the *Responsiones Aros philosophi ad Nephes regem* often refers to the authority of Maria,⁶ and the Latin translation of the Arabic work *Letter of Maria, Daughter of [the Queen of] Sheba, the Copt, to Aras (Risāla Māriya bint Sāba al-malik al-qibṭī ilā Aras)*⁷ was known under the title of *Practica Mariae prophetissae in artem alchemicam (Maria the Prophetess' Practice in the Alchemical Art)*. This text was often quoted and commented on by early modern alchemists, who tried to promote their own practices and procedural methods by interpreting the ancient words of a woman who ranked among the founders of the alchemical art and was often identified with the sister of the patriarch Moses. Such exegetical attempts can be recognized, for instance, in the works of authors such as George Ripley, Andreas Ortelius, and Isaac Newton, which will be discussed in the following pages. Their interpretations of Maria's *Practica* exemplify a both antiquarian and experimental attitude, which has been meaningfully described as "practical exegesis" in a seminal article by Jennifer Rampling.⁸ Moreover, along with her alchemical instructions, Maria's identity and the authenticity of her work were scrutinized by humanists, physicians, and alchemists, who, at some point, started uncovering the relics of Greek alchemical literature scattered in Byzantine manuscripts. As we shall

⁵ Manfred Ullmann, *Die Natur- und Geheimwissenschaften im Islam* (Leiden: Brill, 1972), p. 183. On this subject, see Lucia Raggetti's contribution in this volume.

⁶ See the *indexes* at the end of the most recent editions: Grégoire Lacaze, *Turba Philosophorum. Congrès pythagoricien sur l'art d'Hermès* (Leiden: Brill: 2018); Sylvain Matton, *Responsiones Aros philosophi ad Nephes regem de philosophia malis et improbis occulta et sapientibus manifesta. Avec un fac-similé du manuscrit arabe Chester Beatty 4121* (Paris: SÉHA, 2017).

⁷ *Risāla Māriya bint Sāba al-malik al-qibṭī ilā Aras*, see Ullmann, *Die Natur- und Geheimwissenschaften*, p. 181. The title *Risāla Māriya ilā Aras wa-su'āluhū wa-ḡawābuhā lahū*, "Letter of Mary to Aras, his question and her answer to him", is recorded in Fuat Sezgin, *Geschichte des arabischen Schrifttums, Band IV. Alchimie – Chemie – Botanik – Agrikultur bis ca. 430 H.* (Leiden: Brill, 1971), p. 72.

⁸ Jennifer M. Rampling, "Transmuting Sericon: Alchemy as 'Practical Exegesis' in Early Modern England," *Osiris*, 2014, 29: 19-34.

see, different streams of tradition were compared and combined, and this cultural process fostered a complex and polyphonic discussion on Maria and her alchemical achievements.

2. Interpreting Maria's Instructions: From Isaac Newton back to the Arabo-Latin Tradition

One might take Isaac Newton's massive writings on alchemy as a vantage point from which to survey the long-lasting historical process leading to the assimilation of the rich Arabo-Latin alchemical tradition in the early modern period.⁹ Newton ranged Maria the prophetess among the earliest alchemical writers, at least according to various lists of ancient practitioners that he compiled in Keynes Ms. 13 (King's College, Cambridge): in chronological order, Maria the prophetess (*Maria prophetissa*) is mentioned after Hermes in the first list of the manuscript (fol. 1r) as well as in two following lists devoted to "the most ancient (alchemical) authors".¹⁰ Newton even copied a Latin text attributed to Maria in his own hand. Indeed, Keynes Ms. 45 (Cambridge, King's College Library) transmits the *Practica Mariae prophetissae*,¹¹ a treatise that Newton could read in various printed copies kept in his library.

The first lines of Maria's *Practica* set the narrative framework of the entire text, namely a dialogue between Maria and the philosopher Aros:¹² Aros visited the woman, explicitly identified with Moses' sister, after hearing that she was able to whiten the "stone" (*lapis*, presumably the philosophers' stone) in only one day. Maria did confirm this reputation and replied that Hermes could even do the same just in one hour. A set of instructions follows in the dialogue. First, Maria lists the key ingredients: alum from Spain, white gum, and red gum, that is, sulphur, which is called *kibrik* in the text.¹³ The white and the red gums are to be joint with a true matrimony (Keynes Ms. 45, fol. 1r: *matrimonifica*

⁹ On Isaac Newton's alchemy, see William R. Newman, *Newton the Alchemist. Science, Enigma, and the Quest for Nature's "Secret Fire"* (Princeton and Oxford: Princeton University Press, 2019).

¹⁰ See Keynes Ms. 15, fol. 1r: *Authores vetustissimi*; fol. 2r: *Authores antiquissimi*. Both lists record Hermes' *Emerald Table*, Hermes' *Seven chapters*, and *Maria Prophetissa ad Aros*.

¹¹ For a full transcription of the manuscript (both a diplomatic and a normalized transcription), see *The Chymistry of Isaac Newton* website: <http://webapp1.dlib.indiana.edu/newton/mss/norm/ALCH00034> (last access 25/10/2020).

¹² On this figure, who features in various Arabo-Latin alchemical dialogues, see Ullmann, *Die Natur- und Geheimwissenschaften*, p. 190-191; Sezgin, *Geschichte des arabischen Schrifttums*, pp. 68-69; Matton, *Responsiones Aros philosophi*, pp. V-XIV.

¹³ That is, the Arabic term *kibrit*, "sulphur". See Fabrian Käs, *Die Mineralien in der arabischen Pharmakognosie*, 2 vol. (Wiesbaden, Harrassowitz, 2010), vol. 2, pp. 917-924.

gummi scilicet album cum gummi scilicet rubeo, vero matrimonio) to make them like running water (*fac illa sicut aquam currentem*) and vitrify this water with the two *zubech*, a term that Newton transliterated in Hebrew script and translated either as “gum” or as “tincture”.¹⁴ One may wonder whether he agreed with Michael Maier (1568-1622), who believed that the original version of Maria’s *Practica* had been written in Hebrew.¹⁵

Maria stresses how practitioners were required to master the art of fire perfectly, since the success of the described procedures very much depended on the use of the right heating source. The fire was to be like “the measure of the heat of the sun in the month of June or July” (fol. 1v: *mensura caliditatis Solis in mense Junii vel Julii*).¹⁶ Such a control of the temperature was mandatory to manipulate the enigmatic ingredient that is introduced in the middle of the dialogue, namely a white herb which grows upon the small mountains (*herbam albam...crescentem super monticulis*). After insisting on this substance, Maria goes back to the already mentioned *kibrik* and *zubech*, which she identifies with two smokes of different colors. They are the roots of the art, the dyeing tincture, while the solid body that receives this tincture is referred to as “the heart of Saturn” (*cor Saturni*). The whole operation, Maria concludes, requires a particular type of vessel, that is called “the vessel of Hermes” (Keynes Ms. 45, fol. 2r):

Istud est vas Hermetis, quod Sophi occultaverunt, et non est vas ignorantium [id est vulgi], sed est mensura ignis tuis. [...]

Omnia docent Philosophi praeter vas Hermetis, quia illud est divinum, et de sapientia domini gentibus occultatum. Et illi qui illud ignorant, nesciunt regimen veritatis, propter vasis Hermetis ignorantiam.

¹⁴ See Keynes Ms. 35, fol. 1r and note 1 in *The Chymistry of Isaac Newton* website. One must note that the Arabic *zi’baq* refers to “mercury” (see Käs, *Die Mineralien*, vol. 2, pp. 692-696), as Newton himself recorded in the *Index chemicus* (Keynes Ms. 30/1, fol. 94r, s.v. *zibach*).

¹⁵ On Maier, see below, pp. 18-19. We must note that Maier’s alchemical writings range among the favourite sources of Newton: see Meagan S. Allen, “Revisiting Isaac Newton’s *Index Chemicus*: A Response to Richard S. Westfall,” *Ambix*, 2019, 66: 72-81, pp. 76-77.

¹⁶ English translation by Raphael Patai, *The Jewish Alchemists. A History and Source Book* (Princeton: Princeton University Press, 1994), p. 72.

This is the vessel of Hermes, which was hidden by the sages;¹⁷ it is not the vessel of unlearned people (that is, of common people), but the measure of your fire. [...]

The sages teach all these things rather than the vessel of Hermes, because this is divine, and, by the wisdom of the Lord, hidden from the people. And those who disregard it do not know the regimen of truth, because of their ignorance of the vessel of Hermes.¹⁸

After copying the *explicit* of this text, Newton adds a few references to the printed books that included Maria's work. He writes (Keynes MS. 45, fol. 2v): "Extat hoc opus in Theat. Chem. Vol. 5 & Vol. 6 p. 479 et Art. Aurif. vol. 1 et in Bibliotheca Gallica".

The reference to the *Auriferae artis* is clear. In fact, the first printed edition of Maria's *Practica* appeared in an important anthology of alchemical writings, the *Auriferae artis, quam Chemiam vocant, antiquissimi authores* (*The earliest authors of the aurific art that is called chemia*) printed by Pietro Perna in Basel in 1572. In 1593 the anthology was reprinted by Konrad Waldkirch, and a third edition in three volumes appeared in 1610. Newton had a copy of this last edition in his library.¹⁹

A few years afterwards, Maria's text was printed again in the fifth volume of the *Theatrum chemicum* (1622), in the long section entitled *Allegories of the wises about the book (of the) Turba: Twenty-nine sections*.²⁰ Section 27, in fact, includes the full text of Maria's *Practica*, which is not introduced by any particular title.²¹ Moreover, some passages taken from this dialogue were also printed in the sixth volume of the *Theatrum chemicum* (1661) at p. 479, as Newton recorded in the above-mentioned note in Keynes Ms. 45.²²

¹⁷ Both in the *Artis auriferae* and in the *Theatrum chemicum* (on these printed editions, see below), the Latin text reads: *Istud est vas Hermetis, quod Stoici occultaverunt, et non est vas nigromantium etc.* On this mention of the Stoics, see Sylvain Matton, "Alchimie et Stoicisme: à propos de récentes recherches," *Chrysopoeia*, 1992-1996, 5: 5-144, pp. 18-20.

¹⁸ English translation (slightly modified) by Patai, *The Jewish Alchemists*, pp. 73-74.

¹⁹ See item number H90 in John Harrison, *The Library of Isaac Newton* (Cambridge: CUP, 1978). In the 1610 edition, Maria's *Practica* is to be found in vol. 1, pp. 205-208. For an up-to-date description of Newton's library, see the *Newton Project* website (<http://www.newtonproject.ox.ac.uk/his-library/books-in-newtons-library>).

²⁰ *Theatrum chemicum*, vol. 5 (Straßburg, 1622), pp. 1-57: *Allegoriae sapientium supra librum Turbae: XXIX distinctiones*. On these allegories, see Julius Ruska, *Turba philosophorum. Ein Beitrag zur Geschichte der Alchemie* (Berlin: Julius Springer, 1931), pp. 328-333.

²¹ *Theatrum chemicum*, vol. 5, pp. 94-96.

²² Both the fifth and the sixth volumes certainly belonged to Newton's library: see item H1608 in Harrison, *The Library*.

We cannot exclude that Newton was interested in these excerpts because they include dense exegetical notes by Andreas Ortelius (1600-1657), who insisted on the main technical parts of Maria's dialogue.²³ Maria's description of the two smokes as well as of *kibrik* and *zubech* were interpreted by Ortelius as referring to two mercuries, namely silver's and gold's mercury, which he identified with the mercury of the moon and the mercury of the sun. Then Ortelius provided a detailed description of their treatments, which he explained by referring to Paracelsus. After being distilled and liquified, the mercuries are to be solidified with the addition of lime (*calx*), which would produce, after 12 days, coagulated "mercury of Saturn". All these processes must be carried on by means of the sun's heat, to which the second part of Ortelius' commentary is devoted. Maria's instruction of performing distillations in June and July were justified in astrological terms, since the operations had to be done when the sun is in Leo. Moreover, after commenting on the distinction between terrestrial (or inferior) and celestial (or superior) sun, Ortelius urged using burning mirrors, which could intensify the sun beams, irradiate the treated substances, and ignite the hot ashes used to heat a proper alchemical apparatus. According to the same method, Ortelius remarked, the alchemist Alexander von Suchten (c. 1520-1575) prepared his regulus of antimony.²⁴ Indeed, calcination of antimony by the sun's heat, which was intensified through burning-glasses, became a popular experiment in seventeenth-century chemistry, since the metal noticeably increases its weight after being reduced into ashes.²⁵ "Solar calcination" is recorded in various textbooks of chemistry, such as Lemery's *Cours de chymie* and Le Fèvre's *Traicté de chymie*, which also includes a picture to visualize the procedure.²⁶

Fig. 2.2. Solar calcination of antimony, Le Fèvre, *Traicté de la chymie* (Paris, 1660), p. 899.

²³ *Theatrum chemicum*, vol. 6 (Straßburg, 1661), pp. 480-486. A German and Latin mixed version of this commentary was already printed in *Epilogus et recapitulatio in Michaelis Sendivogii Poloni Novum Lumen Chymicum, opera et studio Ανδρός Όρθος Ήλιος* (Erfurt, 1624), pp. 130-149. This volume appeared as a separated appendix to the 1624 Erfurt edition of Sendivogius' alchemical writings, on which Ortelius wrote a commentary.

²⁴ On Suchten's alchemy of antimony, see William R. Newman and Lawrence M. Principe, *Alchemy Tried in the Fire: Starkey, Boyle, and the Fate of Helmontian Chymistry* (Chicago and London: The University of Chicago Press, 2002), pp. 50-56.

²⁵ See Henry Guelarc, *Lavoisier. The Background and Origin of His First Experiments on Combustion in 1772* (Ithaca, New York: Cornell University Press, 1961), pp. 114-120.

²⁶ See Nicaise Le Fèvre, *Traicté de la chymie*, vol. 2 (Paris, 1660), pp. 899-902; Nicolas Lemery, *Cours de chymie* (Paris, 1687⁶), p. 252.

Maria's *Practica* and its commentaries did not only circulate in Latin collections. A French translation of the dialogue was printed in the second volume of Nicolas Salomon's *Bibliothèque des philosophes [chimiques]*, which in all likelihood corresponds to the *Bibliotheca Gallica* quoted by Newton in the final note of Keynes Ms. 45.²⁷ As we shall see, Salomon also added textual notes to his own translation of Maria's work and discussed Maria's chronology in his introduction (*Préface*) to the second volume of the anthology.²⁸ However, neither in the introduction nor in the notes to the Latin text he commented on the technical instructions given in the treatise. He only considered the *bain-marie* in the list of alchemical terms that closes the first volume of the *Bibliothèque*.²⁹ Here Salomon provided a short explanation of the *bain marin* (lit. "sea bath"), a double boiler in which the outer vessel contained hot water used to heat the inner container. Particularly suitable for distillation (in which case, the inner container would be an alembic), it was also referred to as *le vicaire du ventre du cheval*, since horse's manure could be used to fill the outer vessel. Salomon further specified that this device was also called *Bain Marie*, from the name of Maria the prophetess, Moses' sister. Without questioning this identification – which he explicitly rejected in his *Préface*³⁰ – Salomon simply added that unlearned apothecaries misread this name and wrote *bain marin* instead.

The term *balneum Mariae* attracted the attention of Newton as well. The expression is recorded in his *Index chemicus*, a rich handwritten vocabulary of alchemical terms, which also functions as a subject-index, since each entry is complemented by a series of references to alchemical primary sources:³¹ almost 2.000 references taken from at least 1000 authors have been detected by analyzing the 46

²⁷ According to Harrison's catalogue, Newton only possessed the first volume of this work (see item H221), whose full title reads: *Bibliothèque des philosophes [chymiques], ou recueil des œuvres des auteurs les plus approuvez qui ont écrit sur la pierre philosophale. Tome premier. (...) Par le sieur S.D.E.M.* (Paris, 1672). The French translation of Maria's *Practica*, however, was included in the second volume published in 1678 (pp. 82-87). Only in Jean Maugin de Richebourg's expanded edition of the *Bibliothèque* (1740), the treatise was moved to the first volume. On the French physician Nicolas Salomon, see Jean-Marc Mandosio, "Nicolas Salomon et sa *Bibliothèque des philosophes [chimiques]* (1672-1678)", *Chrysopoeia*, 2000-2003, 7: 343-378.

²⁸ See Salomon, *Bibliothèque des philosophes [chymiques]*, vol. 2 (Paris, 1678), preface (2nd part), section entitled *Dialogue de Marie et d'Aros sur le magistère de Hermès* (page numbers are not indicated in the preface).

²⁹ See the last twenty pages (that are not numbered) in the first volume of the *Bibliothèque des philosophes [chymiques]*.

³⁰ See below, pp. 18-19.

³¹ The digital edition of this text, from which the following quotations are taken, is available at *The Chymistry of Isaac Newton* website: <http://webapp1.dlib.indiana.edu/newton/mss/norm/ALCH00200> (last access 02/11/2020).

longest entries of the *Index*.³² Maria's *Practica* must certainly be counted among these sources and at least 5 out of the 11 entries which mention Maria's name comes from the Arabo-Latin dialogue. Newton recorded, for instance, "white and red gum", "mystical vessel that is the measure of the fire", "the herb under the mountains", and he explained the expression "Triptolemus' snakes" as a reference to the vessel of Hermes mentioned at the end of Maria's *Practica*.³³ It comes as no surprise that one of the entries is devoted to the *Balneum Mariae*, which Newton presented as a synonym of *Balneum Solis et Lunae* ("Sun's and Moon's bath"). The following four references are listed for the term (Keynes MS. 30/1, fol. 15r): "Balneum Mariae idem, Artef. p. 3; 12. Maier Embl. p 100, 101. Instruct patr. ad Fil. p. 191. Hydropyrogr. p. 1".

Three quoted sources correspond to early modern alchemical treatises, namely Maier's *Symbola aureae mensae* and two anonymous writings entitled respectively *Hydropyrographum hermeticum* (*Hermetic Fire-Water Text*) and *Instructio patris ad filium de arbore solari* (*The Father's Teaching to his Son about the Golden Tree*).³⁴ The last work, in a chapter devoted to the cooking of mercury and of the seed of gold, lists "the bain-marie, where an egg can be cooked" as an example of very light fire.³⁵ Along with these treatises, Newton also mentioned the medieval alchemist Artephius, abbreviated as 'Artef. p. 3'. Despite the variety of works attributed to this enigmatic figure,³⁶ we can safely identify Newton's reference with Artephius' *De arte occulta et lapide philosophorum liber secretus* (*Secret Book on the Occult Art and the Philosophers' Stone*). This Latin text was first printed in Amsterdam in 1678, while French and English versions already circulated in earlier printed books.³⁷ Newton transcribed two full copies of this text, both in English (Keynes Ms. 14) and in Latin. The last one is transmitted in a small booklet which has been bound with other bundles of alchemical extracts and now constitutes

³² Richard S. Westfall, "Isaac Newton's *Index Chemicus*," *Ambix*, 1975, 22: 174-185, p. 178.

³³ See Keynes Ms. 30/1, fol. 31r: *Dracones Triptolemi (...) suntque illud vas quod Maria dicit non esse ignorantium sed regimen ignis tui*. See also fol. 41v: *Gummi album et rubrum*, for which *Maria prophetissa* is mentioned as a source, with no reference to a specific text; fol. 42v: *Herba super monticulis, aurum vivum. (...) Maria*; fol. 88r: *Vas mysticum, mensura ignis tui, Maria*.

³⁴ On Maier's text, see below. On the other two sources, see Newman, *Newton the Alchemist*, pp. 206-207 and 292-293.

³⁵ The anonymous *Instructio* was printed in *Theatrum Chemicum*, vol. 6, pp. 163-194; see p. 191: *Balneum Mariae, in quo ova coqui possunt*.

³⁶ See Sébastien Moureau, "A Note on Artephius," published as an appendix in "*Elixir atque Fermentum: New Investigations about the Link between Pseudo-Avicenna's alchemical 'De anima' and Roger Bacon: Alchemical and Medical Doctrines*," *Traditio*, 2013, 68: 277-325, pp. 324-325.

³⁷ See John Ferguson, *Bibliotheca Chemica: A Catalogue of the Alchemical, Chemical and Pharmaceutical Books in the Collection of the Late James Young of Kelly and Durris* (Glasgow: James MacLehose and Sons, 1906), vol. 1, p. 51.

Ms. Var. 259 (Jerusalem, National Library of Israel).³⁸ The second booklet, which counts 8 folia, contains Artephius' Latin text (fol. 2.1r-2.8v), which mentions the *balneum Mariae* as the name of a dyeing water of sulphur.³⁹ Moreover, the third booklet in the same manuscript (fol. 3.1r-3.4v) transmits the English translation of *Le livre des figures hiéroglyphiques* by Nicolas Flamel.⁴⁰ A section of chapter 2 lists the term *balneum Mariae* among the names given to a triple vessel or "vessel of earth", which Newton tried to depict in a little drawing at the margin of the manuscript (fol. 3.1v). This drawing slightly differs from the picture available in the printed edition of the text and seems to better capture some details of how the vessel is described in the text:

(Ms. Var. 259, fol. 3.1v) This Vessell of earth is called a tripple vessell, having a stage or flower in the midst on which is a boule < or > platter of ashes holding the glasse filld with the scum of the redd sea & the fat of the mercuriall wind which thou seest painted in form of a penner & inkhorn. This vessel the envious call an Athanor, sive, dung, Balneo Mariae Furnace, sphaere, the Green Lyon etc.⁴¹

Fig. 2.3. Triple vessel in Newton's handwritten copy of Flamel's Exposition of *the Hieroglyphical Figures* (Ms. Var. 259), fol. 3.1v.

The association between "dung" and the *Balneum mariae* appeared in various late medieval and Renaissance alchemical writings. For instance, within the vast *corpus* of alchemical treatises ascribed to Arnaldus de Villa Nova, the *Cathena aurea* (*Golden chain*) seems to equate "horse manure" and the *bain-marie* as sources of moist heat. The treatise is an early fifteenth-century alchemical vision, which re-uses the biblical language of prophecy to explain the central role played by mercury in the making

³⁸ See Isaac Newton, "MS. Var. 259", in *The Chymistry of Isaac Newton*. Ed. 2013. Retrieved October 31, 2020 from: <http://purl.dlib.indiana.edu/iudl/newton/ALCH00063>.

³⁹ Ms. Var. 256, fol. 2.3r.

⁴⁰ An English translation of the treatise by a certain Eirenaeus Orandus was published in London, 1624: *Nicholas Flamel, His Exposition of the Hieroglyphical Figures (...) faithfully and religiously done into English out of the French Copy, by Eirenaeus Orandus, quiest, Vera veris enodanus*.

⁴¹ Digital edition in *The Chymistry of Isaac Newton* website (see above, n. 38). Newton's version is shorter than the description provided in the 1624 printed book of Flamel's *Exposition of the Hieroglyphical Figures* (p. 19).

of the philosophers' stone.⁴² The author saw an old wise man holding a book with seven seals, each one revealing a secret step in the treatment of mercury. Even though the work already circulated in manuscripts under the title of *Visio Marie* (*Maria's vision*) and was reshaped into a French poem entitled *Le Sept Visions de Marie la Prophetesse*,⁴³ the only explicit reference to Maria is found in the description of the first seal:

*vidi in prima parte catenae aureae, id est primae operationis, sigillum libris argenteis scriptum, id est Mercurium dicentem: "in calido et humido pone me et ex illis pasce me, quoniam debilis sum". Super hoc interrogatus senex, quid haec scriptura significat, respondit istam scripturam clavem et primam operationem lapidis esse, quae dicitur Philosophorum putrefactio, sive digestio totius lapidis philosophi, in primam materiam soluti per suum tempus, puta per 40. dies, in igne calido et humido, in fimo equi, vel in balneo Mariae philosophico.*⁴⁴

I saw in the first part of the golden chain, that is, of the first operation, the seal written with silver letters, that is, mercury saying: "put me in a moist heat and let me graze in this condition, since I am weak." The old man, being asked on the meaning of this inscription, answered that this inscription is the key and the first treatment of the stone, which is given the name of "philosophers' putrefaction" or "digestion of the all philosophers' stone", dissolved in the first matter for a given time, let's say 40 days, with a hot and humid fire in horse manure or in Maria's philosophical bath.

Another reference to the *balneum Mariae* occurs in the seminal treatise usually known as the *Rosarium philosophorum* (end of the fifteenth century). The work, which counts Arnaldus de Villa Nova's homonymous writing among its sources,⁴⁵ was first printed in the second volume of the alchemical anthology known as *De alchimia opuscula complura veterum philosophorum* (Frankfurt, 1550).⁴⁶ The *Rosarium* is a doxographical work, where the opinions of various alchemists are reported

⁴² Antoine Calvet, *Les œuvres alchimiques attribuées à Arnald de Villeneuve. Grand œuvre, médecine et prophétie au Moyen-Âge* (Paris – Milan: S.É.H.A – Archè, 2011), pp. 250-252.

⁴³ See Calvet, *Les œuvres alchimiques attribuées à Arnald de Villeneuve*, p. 250; Didier Kahn, "Les sept visions de Marie la prophétesse sur l'œuvre de la pierre des philosophes," *Chrysopoeia*, 1998, 2: 369-384.

⁴⁴ Calvet, *Les œuvres alchimiques attribuées à Arnald de Villeneuve*, p. 550.

⁴⁵ Calvet, *Arnald de Villeneuve*, pp. 130-1.

⁴⁶ The first volume includes, among others, alchemical works by Ps.-Avicenna, Ps.-Lull and Ps.-Aristotle. The first edition of this collective work, published by the tireless printer of alchemical anthologies Johannes Petreius (1497-1550) in Nuremberg, 1541, had a different choice of treatises (Ps.-Geber, Roger Bacon. Khalid ibn Yazid, Hermes).

on different matters. In a section ascribed to the Arabo-Latin author Geber, the *bain-marie* (*balneum Mariae*) is used to coagulate mercury, which is putrefied in “a moist heat, that is horse manure” (*in calido et humido, id est in fimo equino*).⁴⁷ The instruction is similar to what we already read in the *Cathena aurea*, even though the *balneum Mariae* is here linked to coagulation. In fact, the author explains that only horse manure produces a fire suitable for putrefaction, whereas the fire of the *bain-marie* (*ignis balnei Marie*) is too weak for this operation.⁴⁸ Conversely, this ‘weakness’, so to speak, was praised in Giovanni Aurelio Augurello’s allegorical poem on the making of gold (1515), which mentions the *balneum Mariae* as a source of gentle and moist heat, suitable for treating primary substances, such as sulphur and mercury, and making them germinate like seeds.⁴⁹

Along with the heating method associated with her name, various instructions taken from Maria’s *Practica* are mentioned and discussed in fifteenth-century alchemical literature. For instance, the *Rosarium* includes a verbatim quotation on the use of Arabic gum; in a section of the large compendium usually known as *Bosome Book*, George Ripley (c. 1415-1490) interpreted the dissolution of the “earth of Saturn” in two *Zaibeths* as a reference to the dissolution of *sericon* in mineral and vegetal waters.⁵⁰

3. Maria the Prophetess and the Byzantine Alchemical Tradition

In most passages discussed so far, Maria is given the rank of prophetess (*prophetissa* in Latin) and identified with the sister of Moses. The above-mentioned *Rosarium philosophorum*, for instance, introduces Maria as an *auctoritas* in the list of alchemists (*artifices*) that opens the treatise: *Adam, Noe, Idrid (...) Moyses et soror eius Maria* (“Moses and his sister Maria”) etc.⁵¹ Maria appears after

⁴⁷ Joachim Telle, *Rosarium philosophorum. Ein alchemistisches Florilegium des Spätmittelalters*, 2 vol. (Berlin: Akademie Verlag, 1992), vol. 1, p. 23

⁴⁸ Telle, *Rosarium*, vol. 1, p. 26.

⁴⁹ Augurello, *Chrysopoeia*, book 2, vv. 401-408; critical edition in Matteo Soranzo, *Giovanni Aurelio Augurello (1441-1524) and Renaissance Alchemy* (Leiden: Brill, 2020), pp. 222-223.

⁵⁰ Jennifer M. Rampling, “The Catalogue of the Ripley Corpus: Alchemical Writings Attributed to George Ripley,” *Ambix*, 2010, 57: 125-201 (pp. 141-144). On the metallic substance called *sericon* and its role in the production of the vegetable stone, see Rampling, “Transmuting Sericon”. Another reference to Maria’s text can also be found in the *Accurtations of Raymond*: see Jennifer M. Rampling, “Establishing the Canon: George Ripley and his Alchemical Sources,” *Ambix*, 2008, 55: 189-208 (pp. 201-204).

⁵¹ Telle, *Rosarium*, vol. 1, p. 2.

Moses and is presented as his sister, in accordance with the information provided by Maria's *Practica*. As already seen, the influence of this Arabo-Latin text certainly extended into the sixteenth century. The name of Maria is quoted in a long list of alchemical authors compiled by the Italian alchemist Giovanni Battista Nazari in his *Il metamorfosi metallico et humano* (*Metallic and Human Metamorphosis*), a series of alchemical dreams printed in Brescia in 1564. In the second dream, Nazari saw a complex building with many niches, each containing a statue to which a book was tied with a silver chain. Nazari recorded all the titles he could read – mainly titles of medieval alchemical writings – among which one finds: *Artus rex*, *Conversatio philosophorum*, *Phoenix ad Martium regem Arragonensem*, *Mariae prophetissae*, etc.⁵²

In 1572, an expanded edition of Nazari's treatise was published in Brescia under the title *Della trasmutatione metallica sogni tre* (*Three Dreams on the Metallic Transmutation*). In this version, Nazari re-arranged alphabetically the list of alchemical titles that he saw in his second dream.⁵³ In this new list, now part of Nazari's third dream, the name of *Maria prophetissa* is no longer readable under the letter M; one finds instead *Mariae Iudeae epistola, vel dialogus et pratica* (*Maria the Jewess' Letter, or Dialogue and Practice*), which is followed by other titles, such as *Michaelis Pselli de conficiendo auro* (*Michael Psellos, On the Making of Gold*).⁵⁴ The mention of the Byzantine scholar Michael Psellos (eleventh century), who wrote a short alchemical treatise on the making of gold, might point to a certain familiarity of Nazari with the manuscript collections of Graeco-Egyptian and Byzantine writings.

The new title *Mariae Iudeae epistola* makes explicit reference to the 'Jewishness' of Maria, which was already pointed out by Hermolao Barbaro (1454-1493), one of the first Renaissance scholars who certainly had a first-hand knowledge of the Greek alchemical literature only available in Byzantine

⁵² *Il metamorfosi metallico e humano di Gio. Bat. Naz. Bre.* (Brescia, 1564), p. 26, 2nd column. Didier Kahn has recently discovered a similar list, rearranged in alphabetical order, in Ms. Ital. 929 of the Bibliothèque Nationale de France (sixteenth century), as part of the anonymous treatise *Trilogio della trasmutatione de' metalli, tra il Filosofo, il Theorico et il Pratico* (c. 1564). At fol. 162v (column a), under the letter M, the following titles are recorded: *Morieni tractatus*, *Miscendes philosophus*, *Merlini allegoria*, *Marie prophetisse*, *Magnesie liber*, etc. See Didier Kahn, "Aristotélisme et alchimie dans l'anonyme *Trilogio della trasmutatione de' metalli*", in *Alchimie et philosophie à la Renaissance*, edited by Jean-Claude Margolin and Sylvain Matton (Paris: Vrin, 1993), pp. 223- 252 (249).

⁵³ See, for instance, Frank Greiner, "L'initiation alchimique de Giovan Battista Nazari," *Bulletin de l'Association d'étude sur l'humanisme, la réforme et la renaissance*, 1995, 47: 9-35.

⁵⁴ *Della tramutazione metallica sogni tre, di Gio. Battista Nazari Bresciano* (Brescia, 1599), p. 141.

manuscripts.⁵⁵ In his commentary on Dioscorides' *De materia medica* (published posthumous in 1516), Barbaro referred to many Graeco-Egyptian and early-Byzantine authors of alchemical treatises (Ostanes, Zosimus, Democritus, etc.) and mentioned three women who distinguished themselves as experts in the field:⁵⁶

Iam feminae tres, Cleopatra, Virgo Taphnutia, quae minus probatur, et Iudeae gentis Maria, quam plurimi secuntur.

There are also three women, Cleopatra, the virgin Taphnutia, who is less esteemed, and Maria the Jewess, who had many followers.

This threefold list was then reproduced by Agricola in the preface to his *De re metallica* and by Robertus Vallensis in his booklet *De pulveris (...) materia et compositione* (*On the Matter... and Composition of the Powder*).⁵⁷ This last work was printed after Vallensis' *De antiquitate et veritate artis chemicae* (*On the Antiquity and Truth of the Alchemical art*), which was first published in Paris in 1561: here, Maria is listed among the Arabic authors who wrote on alchemy and no information seems to have been extracted from the three Byzantine alchemical manuscripts kept in Paris, which Vallensis did mention as witnesses of Zosimus' and Blemmides' alchemical work.⁵⁸

As we have already seen, in his writings Zosimus of Panopolis counted Maria among the Jews who wrote on alchemical instruments.⁵⁹ The woman features in other Greek treatises as well. For instance, in his *Ninth Lecture on the Making of Gold*, the Byzantine alchemist Stephanus of Alexandria (seventh

⁵⁵ On the reception of the Greek alchemical corpus in the Renaissance, see Sylvain Matton, "L'influence de l'humanisme sur la tradition alchimique," *Micrologus*, 1995, 3: 279-345, in particular, pp. 309-341.

⁵⁶ In *Dioscoridem corollarii libri quinque* (Venice, 1516), Book V, DCCCCCLIX, s.v. 'sulphur', fol. 100v. See Matton, "L'influence de l'humanisme", p. 323.

⁵⁷ Georg Agricola, *De re metallica* (Basil, 1556), fol. a3r; *De veritate et antiquitate artis chemicae et pulveris sive medicinae philosophorum vel auri potabilis materia et compositione (...) testimonia et theoremata, ex variis auctoribus (...) per Robertum Vallensem selecta* (Leiden: apud F. Raphelengium, 1563), p. 41. See Matton, "L'influence de l'humanisme", pp. 327 and 336-337.

⁵⁸ *De veritate et antiquitate artis chemicae* (Leiden, 1563), p. 27. See also Barbara Obrist, "Views on History in Medieval Alchemical Writings," *Ambix*, 2009, 56: 226-238 (pp. 227-228).

⁵⁹ See above, p. 2.

century CE) mentions Maria along with “the Jewish writings” (Ἰουδαϊκαὶ γραφαί) on alchemy.⁶⁰ The whole *corpus* of the Greek alchemical treatises transmitted in Byzantine manuscripts was never printed in the Renaissance, either in its original language or in Latin translation. The Calabrian scholar Domenico Pizzimenti published a partial Latin translation in Padua (1573), which only contained the alchemical writings by Pseudo-Democritus, Sinesius, Pelagius, and Stephanus of Alexandria along with Psellus’ *Letter on the Making of Gold*, which was listed by Nazari among the alchemical titles of his third dream.⁶¹ Even though important sources on Maria, such as Zosimus’ writings, were not translated by Pizzimenti, his translation did include the above-mentioned *Ninth Lecture* of Stephanus, where Maria is quoted along with the Jewish writings (*Ioudaicas scripturas* in Pizzimenti’s rendering).⁶²

Greek alchemical literature, either in translation or through manuscripts, provided new pieces of information, which could complement and, sometimes, rectify what had been already extracted from the Arabo-Latin tradition. In his philological enquiry into the *Corpus Hermeticum*, Isaac Casaubon (1559-1614) also mentioned Hermes’ and Maria’s chemical works (*Hermetis et Mariae Chymica*) among the writings that were believed to disclose the earliest Egyptian wisdom, which even predated Moses’ teaching.⁶³ He saw these writings in a Byzantine alchemical manuscript in Paris, where he also read Maria’s name: *ibidem citantur Μαριάμ καὶ Ἰουδαϊκαὶ γραφαί, Mariam et scripta Iudaica*, “in the same (manuscript) one finds the quotation *Mariàm καὶ Ἰουδαϊκαὶ graphaί*, i.e. Mariam and the Jewish writings.”⁶⁴ The quotation is taken from the above-mentioned passage of Stephanos of Alexandria, who is not explicitly named by Casaubon. Being quite skeptical about this mention, he only added a terse linguistic remark: Mariam is either Moses’ sister or Jesus’ mother, who is the only woman bearing this name in the New Testament; all the other women (with a similar name) are called

⁶⁰ See Maria K. Papathanassiou, *Stephanos von Alexandria und sein alchemistisches Werk* (Athens: Cosmosware, 2017), p. 216.

⁶¹ *Democritus abderita de arte magna sive de rebus naturalibus. Nec non Synesii, & Pelagii, & Stephani Alexandrini, & Michaelis Pselli in eundem commentaria. Domenico Pizimentio Vibonensi interprete* (Padua, 1573). We must note that Pizzimenti already published his Latin translation of Psellus’ *Letter* in 1572.

⁶² *Democritus abderita de arte magna*, p. 59.

⁶³ *Isaaci Casauboni De rebus sacris et ecclesiasticis exercitationes XVI* (London, 1614), p. 52. See Matton, “L’influence de l’humanisme”, p. 327. On Casaubon’s investigation, see Anthony Grafton, “Protestant versus Prophet: Isaac Casaubon on Hermes Trismegistus,” *Journal of the Warburg and Courtauld Institutes*, 1983, 46: 78-93.

⁶⁴ *Isaaci Casauboni De rebus sacris*, p. 56.

Maria.⁶⁵ Then, Casaubon focused his investigation on the *Corpus Hermeticum*, i.e., the most important collection of Hermetic writings at his time. Indeed, his exposure of this collection as a late forgery could be easily extended to the galaxy of pseudo-ancient texts that orbited around it.⁶⁶

A similar conclusion on the dating of Greek alchemical texts was reached by Joseph Justus Scaliger (1540-1609) in his philological work on Manilius' *Astronomicon*: Greeks and Romans came to know alchemy in a late period, since the earliest reference to this art only occurs in Firmicus Maternus' astrological work.⁶⁷ While no mention of Maria occurs in this discussion, she is referred to in Scaliger's major work *Thesaurus Temporum*, where he tried to reconstruct the original Greek text of Eusebius' *Chronology*, only known in Latin translation. Among the many quotations taken from Syncellus, Scaliger also included the passage where "Maria, a Hebrew woman of learning" (Μαρία τις Ἑβραία σοφή) and Democritus appear as students of the magus Ostanes in the temple of Memphis.⁶⁸ However, in his brief exegetical notes, Scaliger tentatively attributed this passage to the late-antique historian Panodorus of Alexandria, in lines with what he already argued about alchemy's chronology. As for Maria, he openly admitted to ignore any other work on this woman.⁶⁹

Scaliger's and Casaubon's studies were used by seventeenth-century physicians, alchemists and philologists to support different, in some cases even contrasting, views. Pierre-Daniel Huet (1630-1721) criticized Scaliger's position and used Syncellus' passages to prove the antiquity of alchemy.⁷⁰ Pietro Servio, who taught medicine in Rome (where he died in 1648), paradoxically mentioned Casaubon' writings to prove that alchemy predated Hippocrates and Galen, who would have even demonstrated

⁶⁵ *Isaaci Casauboni De rebus sacris*, p. 56: *Mariam autem est vel soror Mosis, vel gloriosissima Virgo Deipara. Nam in Novo Testamento sola sic dicitur; quaevis reliquarum Μαρία.*

⁶⁶ See Claudio Moreschini, *Hermes Christianus. The Intermingling of Hermetic Piety and Christian Thought* (Turnhout: Brepols, 2011), p. 278.

⁶⁷ See Scaliger's commentary on Manilius' book 4.248 in *M. Manili Astronomicon libri quique, Iosephus Scaliger Iul. Caes. F. Recensuit, ac pristino ordine suo restituit. Eiusdem Ios. Scaligeri Commentarius in eosdem libros et Castigationum explicationes* (Paris, 1579), section *Commentarius et castigationes in lib. IIII. Manili*, pp. 218-219.

⁶⁸ Scaliger's *Thesaurus temporum* (Leiden, 1601) includes various works with separated foliation; see *Τῶν χρονικῶν κανόνων παντοδαπῆς ἱστορίας Εὐσηβίου τοῦ Παμφίλου τὰ σωζόμενα*, p. 43. The Greek passage of Syncellus' *Chronography* is edited in Alden A. Mosshammer, *Georgii Syncelli Ecloga chronographica* (Leipzig: Teubner, 1984), p. 297; English translation in William Adler and Paul Tuffin, *The Chronography of George Synkellos. A Byzantine Chronicle of Universal History from the Creation* (Oxford: OUP, 2002), p. 298.

⁶⁹ Scaliger, *Thesaurus temporum*; section *Iosephi Scaligeri Iulii Caesaris filii, in Graeca παντοδαπῆς ἱστορίας Eusebii, quae supersunt, notae*, p. 258.

⁷⁰ See Sylvain Matton, "Pierre-Daniel Huet et l'alchimie," *Chrysopoeia*, 2000-2003, 7: 379-394.

some knowledge of this art in their writings. In his exegesis of Estêvão Rodrigues de Castro's essay devoted to the medical uses of whey, Servio maintained that alchemy was already practiced by Moses and uncritically reported how Casaubon saw a work by Maria, Moses' sister, at the *Regia Bibliotheca* in Paris.⁷¹ Conversely, this information was questioned in Jean Bernier's *Essais de medecine* (1689). After visiting the library to check the actual content of the manuscript, he reported to have only found a short excerpt on the philosopher's stone attributed to the wisest Maria.⁷² Since her name occurred along with many alchemists who worked in the first centuries CE, Maria cannot be identified with Moses's sister and must have lived after Cleopatra, who is also mentioned in the Paris alchemical collection.

A similar interpretation of Casaubon's reference to Maria was proposed by the alchemist Daniel Sennert (1572-1637), who also dismissed the alchemical expertise often attributed to Moses:⁷³ he tentatively referred the mention of Mariam and the Jewish writings in the Paris manuscript to the treatise *Practica Mariae prophetissae sororis Mosis*, which Sennert knew as transmitted along with the *Turba philosophorum*. It therefore belonged to the Arabo-Latin tradition and was to be counted among the late works attributed to ancient figures.⁷⁴ Likewise, in his *De Hermetica medicina* (*On Hermetic medicine*), Hermann Corning (1606-1681) relied on Casaubon's condemnation of the *Hermetica* as a forgery to debunk the alleged antiquity of alchemy and iatrochemistry.⁷⁵ Accordingly, he maintained that a certain Maria the Jewess (*Maria quaedam Iudaica*) mentioned by Greek sources must date to a late period and substantiated his conclusion by quoting the passage from Syncellus'

⁷¹ See Persius Trevius (i.e. Servio's pseudonym), *Ad librum de sero lactis Stephani Roderici Castrensis Lusitani declamationes* (Rome, 1634), chap. XVII (*Hermeticae artis antiquitas: An Hippocrati et Galeno cognita, quomodo cognita*), pp. 82-83. The treatise was written in response to *D. Stefani Roderici Castrensis (...) de sero lactis* (Florence, 1631), where De Castro denied that distillation was known to Galen and Hippocrates, being it only practiced by Arabic alchemists and physicians: see chap. XI (*Destillatio an antiquis fuerit cognita*), pp. 66-70.

⁷² See Jean Bernier, *Essais de medecine* (Paris: Simon Langronne, 1689), pp. 223-224 (text quoted in Matton, "L'influence de l'humanisme", p. 327). Bernier might have seen the short collection of alchemical sayings *Περὶ τοῦ λίθου τῆς φιλοσοφίας*, *On the Philosopher's Stone*, in MS *Parisinus* gr.2327 (foll. 136^v-138^v), where a marginal note (fol. 136^v) adds the title *Λόγος τῆς σοφοτάτης (sic) Μαρίας περὶ τοῦ λίθου τῆς φιλοσοφίας*, *Discourse by the Wisest Maria On the Philosopher's Stone*. Greek text edited in Berthelot-Ruelle, *Collection des anciens alchimistes grecs*, vol. 2, pp. 198-201.

⁷³ On this point, see below, p. 18.

⁷⁴ Daniel Sennert, *De chymicorum cum Aristotelicis et Galenicis consensu ac dissensu, Liber I* (Wittenberg, 1619) pp. 47-48.

⁷⁵ See Grafton, "Protestant versus Prophet", pp. 88-89; Antonio Clericuzio, "«The White Beard of Chemistry». Alchemy, Paracelsianism and the *Prisca Sapientia*," *Bruniana & Campanelliana*, 2008, 14: 107-116.

Chronography edited by Scaliger.⁷⁶ Even Olaus Borrichius – who defended the antiquity of Hermes and his alchemical teaching against Conring’s attack⁷⁷ – hesitated to acknowledge the authenticity of Maria’s excerpt transmitted in the Paris manuscript. In his work *On the Origin and Development of Chemistry*, he listed various women who knew alchemy, such as the Egyptian goddess Isis, Cleopatra in Egypt, and “a certain Maria in Palestine”; but he immediately specified in brackets: “I was shown a work by her (i.e. Maria) in Paris, even though it might be spurious”.⁷⁸

Women’s contribution to alchemy is also stressed by Nicolas Salomon in the above-mentioned introduction to his *Bibliothèque des philosophes [chimiques]*. In his opinion, the figure of Maria exemplifies how women too mastered the alchemical art, even though Salomon seems to ignore the names of other female alchemists, such as Cleopatra and Taphnouthia. Indeed, he considered Maria as the only woman who stood out among ancient ‘philosophers’, i.e., alchemists. For this reason – he continues – the uniqueness of the text *Practica Mariae prophetissae* testifies to the difficulties that women could encounter when practicing alchemy. They certainly have all the intellectual capacities to understand the art, but they would lack the patience necessary to carry out its extremely long and time-consuming procedures.

Then, Salomon acknowledged the antiquity of Maria’s treatise. However, he questioned her identification with Moses’ sister as well as the alchemical expertise that many attributed to the patriarch. Indeed, Salomon disagreed with those who interpreted the biblical episode of the golden calf (*Exodus* 32:20) as a demonstration of Moses’ alchemical mastery.⁷⁹ By referring to Daniel Sennert’s interpretation of the biblical passage,⁸⁰ Salomon argued that Moses simply melted the golden calf and neither calcined nor reduced it into a kind of potable gold by means of an alchemical acid – a

⁷⁶ *Hermanni Conringii De Hermetica medicina libri duo* (Helmstadt: H. Muller, 1669), pp. 29-31.

⁷⁷ See Robert Halleux, “La controverse sur les origines de la chimie, de Paracelse à Borrichius,” in *Acta Conventus Neo-Latini Turonensis*, edited by Jean-Claude Margolin (Paris: Vrin, 1980), vol. 2, pp. 807-819.

⁷⁸ Olaus Borrichius, *De ortu et progressu chemiae dissertatio* (Copenhagen, 1668), p. 51: ... *in Palaestina Maria quaedam cuius scriptum Parisiis mihi ostensum, quamquam forsan supposititium*.

⁷⁹ See Patai, *The Jewish Alchemists*, pp. 30-40; Didier Kahn, “Généalogie de l’alchimie et interprétation alchimique de la Bible au XVI^e siècle: *Qui fuerint primi inventores hujus artis*,” *Archives d’histoire doctrinale et littéraire du Moyen Âge*, 2017, 84: 313-347.

⁸⁰ See Sennert, *De chymicorum cum Aristotelicis et Galenicis consensu ac dissensu*, pp. 46-47, where Sennert refers to the interpretation of the golden calf proposed by the Franciscan biblical exegetes Nicholas of Lyra (1270-1349). This section belongs to chap. 3 (*De inventoribus et cultoribus chymiae*), where Sennert discusses figures and episodes of ancient alchemy, such as Adam, Hermes, Democritus, and the golden fleece.

substance that was only discovered around the year one thousand, Salomon pointed out. Maria's work, he concluded, represented the Latin translation of an Arabic alchemical text, whose author might be earlier than the monk Morienus, who was believed to have taught alchemy to the Omayyad prince Ḥālid ibn Yazīd. Maria might be identified, Salomon tentatively proposed, with a certain Madera mentioned in a fifteenth-century alchemical book attributed to Bernard Trevisan, as we shall see at the end of this paper.⁸¹

A certain Madera or Medera had been already mentioned by the German alchemist and physician Michael Maier, who held a more nuanced position on the questions of Maria's chronology and the authenticity of her work. He devoted an entire chapter of his *Symbola aureae mensae* (1617) to the figure of Maria, who could not be identified with a pure fictional character.⁸² He argued that the *Dialogue of Maria and Aros* (i.e., the *Practica Mariae Prophetissae*) had been originally written in Hebrew, even though only the Latin translation was known. Most part of the chapter discusses the question whether Maria was the sister of Moses. Maier did not exclude this hypothesis, since a divine inspiration was needed to accomplish her alchemical work. In her quest for the philosophers' stone, she might have relied on Moses' alchemical expertise, which Maier never questioned, but rather confirmed on the basis of various Biblical passages. However, he admitted that there was no compelling evidence to prove the identification of Maria the alchemist with Moses' sister, so that Maria might have been a different Jewess woman. In any case, the treatise *Practica Mariae Prophetissae*, which Maier briefly summarized, testifies to her great alchemical mastery and shows how women could excel in this art. Maria, indeed, was not alone, since she must be counted – Maier concluded – among other women who succeeded in this art:⁸³

⁸¹ On the fictional figure of Bernard Trevisan and the treatise attributed to him, see Didier Kahn, "Recherches sur le livre attribué au prétendu Bernard le Trévisan (fin du XVe siècle)," in *Alchimia e medicina nel Medioevo*, edited by Chiara Crisciani, Agostino Paravicini Bagliani (Firenze: SISMEL – Edizioni del Galluzzo, 2003), pp. 265-336.

⁸² Michael Maier, *Symbola aureae mensae duodecim nationum (...) auctore Michaelae Maiero Comite* (Frankfurt a. M.: L. Jennis, 1617), p. 64.

⁸³ *Symbola aureae mensae duodecim nationum (...) auctore Michaelae Maiero Comite* (Frankfurt a. M., 1617), pp. 56-64. See Patai, *The Jewish Alchemists*, pp. 76-78.

Hermolaus Barbarus Scriptor magnae autoritatis, quamvis non Chymicus, Corollar. In Dioscorid. I.5.c.115, narrat tres foeminas lapidem philosophicum composuisse, Cleopatram, Taphnoutiam et Iudeae gentis Mariam, cuius liber passim circumfertur. His et quarta annumeranda est, Medera, cuius meminit Bernhardus Comes, cum dicit, quod Aros docuit eam arte Nephandim fratrem suum, et Saturnus Luncabur, atque sororem eius Mederam.

Hermolaus Barbarus, a very authoritative writer, even without being an alchemist, in his *Corollarii in Dioscorides* (I.5.c.115), says that three women have produced the philosophers' stone, namely Cleopatra, Taphnoutia and Maria, whose book is widely known. A fourth woman must be added to these, Medera, who is mentioned by Bernard comes, when he says: Aros taught this art to his brother Nephandis, and Saturnus Luncabur (?), and to his sister Medera.

4. Concluding Remarks

Maier's list features names that had been extracted by Hermolaus Barbarus from Byzantine alchemical manuscripts. This list, however, is enlarged with a new name taken from a fifteenth-century French alchemical book attributed to Bernard Trevisan, which Maier quoted in the Latin translation published by Gerard Dorn in 1583.⁸⁴

Medera represents a very enigmatic figure, who adds a further question mark in an already stratified and complex picture.⁸⁵ She seems to be linked to the philosopher Aros, to whom Maria's *Practica* is also addressed. As already seen, Nicolas Salomon tentatively proposed to identify the two female alchemists. Maier's pupil Daniel Stolz von Stolzenberg (1600-1660), in his *Hortulus hermeticus* (1627), devoted two separated emblems and poems to *Medera, foemina alchimystica* ("Medera, a female alchemist") and to *Maria Hebraea Moysis Soror* ("Maria the Jewess, Moses' sister"). Interestingly, the

⁸⁴ Trevisanus *De chimico miraculo, quod lapidem philosophiae appellant (...)* per Gerardum Dorneum (Basel, 1593), p. 5. This translation has been also reprinted in the *Theatrum Chemicum*, vol. 1 ((Straßburg, 1602), pp. 773-803. An earlier Latin translation was published by Guglielmo Gratarolo in 1567 (*Comitis antiqui Trevirensis philosophi expertissimi, περί χημείας opus historicum et dogmaticum*), but this version does not mention the name of Medera (p. 10). According to the recent edition by Didier Kahn, in the French original text of Trevisan's book we read the name 'Madera': see Kahn, "Recherches sur le livre attribué au prétendu Bernard le Trévisan," p. 329.

⁸⁵ As recently pointed out by Kahn, one of the sources of Trevisan's alchemical book was a gloss to the fourteenth-century treatise *Textus alchimie*. This note (*Qui fuerint primi inventores hujus artis*), however, does not report the name of Medera/Madera. See Kahn, "Généalogie de l'alchimie," p. 346.

first verses of Medera' poem mention "the vessels of Hermes" (*Hermetis vascula*), which are also referred to in the saying that encircles Medera's emblem: *qui nescit regimen Veritatis, ignorat vas Hermetis*, "those who disregard the regimen of truth do not know the vessel of Hermes" (see fig. 4).⁸⁶ This sentence clearly rephrases a quote from Maria's *Practica*⁸⁷ and seems to tighten the relationship between the two women.

Fig. 2.4. Daniel Stolz von Stolzenberg, *Hortulus Hermeticus* (Frankfurt, 1637), p. 9: Emblems dedicated to Hermes, Adfar, Cleopatra and Medera.

Maier's, Solomon's, and Stolz's remarks exemplify how early modern alchemists combined information taken from Greek, Arabo-Latin, and more recent sources, in various attempts to reconstruct the origins of their discipline. When considered through the twists and turns of this expansive textual tradition, Maria featured as a key-figure in different early modern 'histories' of alchemy and, at the same time, her *Practica* kept many practitioners busy at least until Newton, who still continued to copy and interpret the text. If Maria's name has remained firmly attached to the heating method that is still called *bain-marie*, her identity and chronology were often reshaped across the centuries. As Moses' sister, she was often evoked in various discussions on the alchemical exegesis of the Bible and the role that patriarchs played in the discovery and development of the art. At the same time, philologists scrutinized the scattered excerpts and information included in Byzantine sources, while physicians, iatro-chemists and alchemists often relied on this work to argue either against or in favor of the remote origins of alchemy. This historical and textual inquiries allowed early modern scholars to redesign the chronological and geographical boundaries of the alchemical art and to root their own theories and practices into this reconstructed past, namely that past which produced the 'ancient' alchemical literature that they never stopped to reinterpret and recontextualize.

⁸⁶ *Hortulus hermeticus flosculus philosophorum cupro incisus confomatus et brevissimis versiculis explicatus* (...) Autore Daniele Stolcio de Stolzenberg (Frankfurt, 1637), pp. 8-13 The poem reads (p. 8): *Medera foemina alchymistica. Quisquis Alithiae non novit Regna beata, nescit is Hermetis vascula mira Senis.*

⁸⁷ See above, p. 2.

répondant à la page 540. Les figures qui se trouvent dans ce dernier ouvrage tome I, au bas de la planche 5, p. 938, en haut de la planche 6 à gauche, ainsi qu'au milieu de la planche 14, paraissent avoir une destination analogue. Je citerai encore les dessins qui se trouvent aux folios 179 verso, 180, 181, du vieux et beau manuscrit latin 7156, sur parchemin, de la Bibliothèque nationale de Paris. Dans le manuscrit latin de la même Bibliothèque 7162, folio 64, on voit la figure d'un bain de sable (*arena*). Dans le manuscrit latin 7161 (fol. 58 et fol. 113 verso) existe la figure d'un appareil à digestion, sur son fourneau. Tous ces appareils correspondent à la suite d'une même tradition technique.

Observons ici que les appareils cylindriques pourvus de la *kérotakis* n'ont été employés que par les plus anciens alchimistes. Ils sont figurés seulement dans le manuscrit de Saint-Marc et dans les copies qui en dérivent ; mais ils n'existent ni dans le manuscrit 2325, ni dans le manuscrit 2275, ni dans le manuscrit 2327.

Figure 22. — Cette figure (manuscrit de Saint-Marc, fol. 195 verso) est

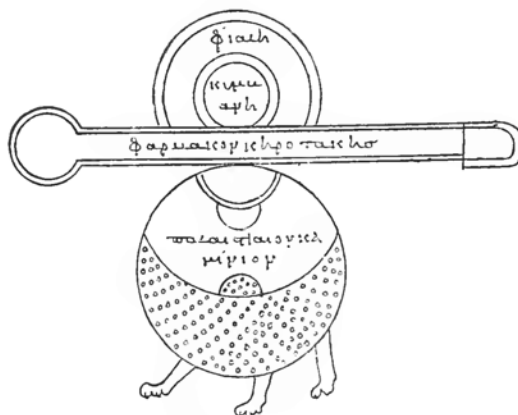


FIGURE 22. — Bain-marie à kérotakis. — Réduit aux 2/3.

aussi un appareil à digestion, appareil sphérique et porté sur trois pieds. Au-dessous de la kérotakis et des vases à condensation supérieurs, il y existe

Fig. 2.1 MS *Marcianus* gr. 299, fol. 195v as reproduced and interpreted by Berthelot



Fig. 2.2. Solar calcination of antimony, Le Fèvre, *Traicté de la chymie* (Paris, 1660), p. 899.

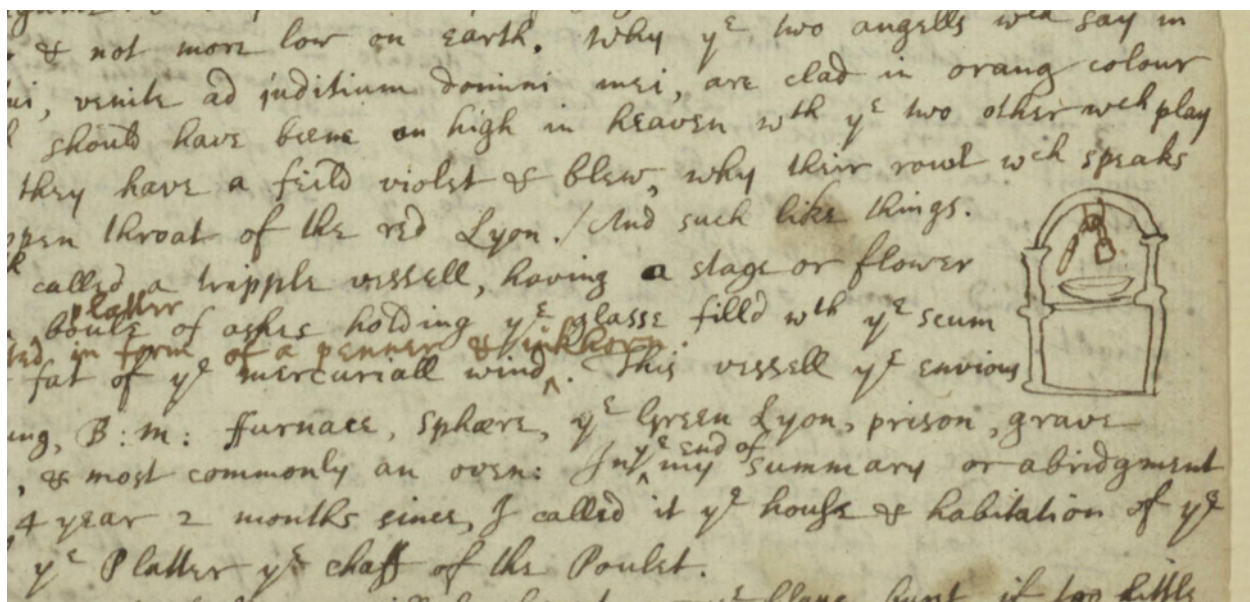


Fig. 2.3. Triple vessel in Newton's handwritten copy of Flamel's Exposition of the Hieroglyphical Figures (Ms. Var. 259), fol. 3.iv.



Fig. 2.4. Daniel Stolz von Stolzenberg, *Hortulus Hermeticus* (Frankfurt, 1637), p. 9: Emblems dedicated to Hermes, Adfar, Cleopatra and Medera.