

Criticizing Chrysopoeia? Alchemy, Chemistry, Academics, and Satire in the Northern Netherlands, 1650–1750

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Abstract: This essay argues that we should consider perceptions of and associations with alchemical language and practices in academic and artisanal as well as popular culture in the Netherlands in order to gain a better understanding of the supposed transformation of alchemy into chemistry in this region. A fresh view on the sites of Dutch chemistry around 1700 is provided, demonstrating that the unique sociopolitical and geological characteristics of the Low Countries meant that the process of the “disappearance” of alchemy was distinctly different from that in the neighboring German lands. Finally, the essay shows that, as Lawrence M. Principe has previously suggested, the rhetoric with which Herman Boerhaave and other Dutch academics rejected the “excesses of chemistry” was less empirically than morally and socially motivated.

Lawrence M. Principe has argued that the search for metallic transmutation, or chrysopoeia, was ordinarily viewed as synonymous with or a subset of chemistry in the late seventeenth century but was increasingly called “alchemy” in the early eighteenth century and banned fairly quickly from respectable chemistry during that period, although many established chemists continued to pursue it privately at least until the 1760s.¹ By the 1740s chrysopoeia was in most places considered a relic of the past. Although it is not unlikely that academics felt a need to denounce alchemy in order to establish chemistry as a respectable academic discipline, according to Principe there are no historical records that support the notion that the rapid decline of a centuries-old

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¹ Lawrence M. Principe, “Alchemy Restored,” *Isis*, 2011, 102:305–312, esp. p. 306; and Principe, “The End of Alchemy? The Repudiation and Persistence of Chrysopoeia at the Académie Royale des Sciences in the Eighteenth Century,” *Osiris*, 2014, N.S., 29:96–116.

endeavor was caused by research that showed metallic transmutation to be physically impossible, and he has suggested that transmutational alchemy was “vilified by declamation rather than disproved by demonstration.” As he points out, there was a distinct increase in vicious academic attacks on transmutational alchemy as fraudulent in the first half of the eighteenth century, and he suspects that such attacks were not so much theoretically or rationally supported as rhetorically, morally, and socially motivated.² Although a fair amount of research has been published on popular perceptions of and on the disappearance of transmutational alchemy, there is much unstudied material that pertains to the Dutch context. This forms a very important chapter in the eventual disappearance of chrysopoeia. Indeed, the Dutch context is especially relevant as a bridge between the German lands, where chrysopoeia maintained itself quite strongly to the middle of the eighteenth century, and France, where the disappearance of transmutational alchemy in the 1720s has been the subject of several studies and remains a controversial and problematic issue.³

Although John C. Powers has demonstrated that the Dutch professor Herman Boerhaave’s increasing skepticism about the possibility of metallic transmutation was at least partly founded on practical experimentation, I agree with Principe that the rhetoric with which Boerhaave and other Dutch academics rejected the “excesses of chemistry” hints not only at an empirical but also at a moral and social motivation. This essay explores the evidence for this hypothesis in the Dutch case and argues that whereas alchemy (or “chymistry”), although not entirely uncontroversial, was understood as a fairly accepted set of practices that included chrysopoeia in the second half of the seventeenth century, certain events in the early eighteenth-century Netherlands fed popular and academic skepticism about these practices.⁴ It therefore focuses on the perception of alchemy in various cultural realms and the wider context in which we find an increase in vicious attacks on alchemy in general and chrysopoeia in particular in the first half of the eighteenth century in the northern Netherlands, in both academic work and in popular texts such as satirical plays.

In order to gain a better understanding of the “perception of the art” of alchemy in the northern Netherlands around 1700, I will first discuss the presence and public perception of alchemists in the second half of the seventeenth century. Subsequently, I will use satirical plays, academic treatises and lectures, and newspaper articles to argue that the broad societal reception of alchemy in the region in this period was at least as important for the formation of chemistry as an academic discipline and the abandonment of the word “alchemy” as the chemical work and rhetoric of academics. Academic declamations on the usefulness of chemistry and the deceitfulness of alchemy should be read together with plays and books satirizing alchemy and understood in the context of traveling alchemists and the attention they received in the popular press.

² Principe, “End of Alchemy?” p. 312; and Lawrence M. Principe, *The Secrets of Alchemy* (Chicago: Univ. Chicago Press, 2013), pp. 84–89. Chrysopoeia did not disappear completely; see, e.g., Patricia Fara, “Marginalized Practices,” in *The Cambridge History of Science*, 6 vols., Vol. 4: *Eighteenth-Century Science*, ed. Roy Porter (Cambridge: Cambridge Univ. Press, 2003), pp. 485–508.

³ See, e.g., Bruce T. Moran, “Andreas Libavius and the Art of Chymia: Words, Works, Precepts, and Social Practices,” in *Bridging Traditions: Alchemy, Chemistry, and Paracelsian Practices in the Early Modern Era*, ed. Karen Hunger Parshall, Michael Thomson Walton, and Moran (Kirksville, Mo.: Truman State Univ. Press, 2015), pp. 59–78; Tara E. Nummedal, “Words and Works in the History of Alchemy,” *Isis*, 2011, 102:330–337; Nummedal, *Alchemy and Authority in the Holy Roman Empire* (Chicago: Univ. Chicago Press, 2007), pp. 5, 48–62, 179; and Principe, *Secrets of Alchemy*, Ch. 7.

⁴ John C. Powers, “From Alchemy to Chemistry,” in *Inventing Chemistry: Herman Boerhaave and the Reform of the Chemical Arts* (Chicago: Univ. Chicago Press, 2012), pp. 170–191. For the argument for using the term “chymistry” instead of “alchemy” see William R. Newman and Lawrence M. Principe, “Alchemy vs. Chemistry: The Etymological Origins of a Historiographic Mistake,” *Early Science and Medicine*, 1998, 3:32–65.

POPULAR PERCEPTIONS OF ALCHEMISTS IN THE NETHERLANDS,
CIRCA 1650–1700

In the course of the seventeenth century, alchemists appeared variously as wise men and as fools in both paintings and texts in the Low Countries. The coincidence that the Dutch “*al gemist*” (literally “missed everything” or “lost everything”) sounded exactly the same as “alchemist” was obviously an easy source of puns.⁵ Simultaneously, alchemical knowledge and procedures were everywhere—in glass, mirror, and earthenware production, in assaying, cooking, medicine, and pharmacy. Although there are persuasive arguments about the interchangeability of the terms “alchemy” and “chymistry” in English and French up to the eighteenth century, it appears that in Dutch the terms “ch[y/i/e]mie” and “ch[y/i/e]mist” were rarely used until the late seventeenth century, although synonyms for “alchemist” such as “*fijneerder*,” “*stofschyder*,” “*scheikondige*,” and “*metaalbrander*,” which could be translated as “refiner,” “divider of substances,” “dividing specialist,” and “metal burner,” were in use.⁶

Alchemy and alchemists, although often associated in the popular imagination with the (futile) quest to make gold, appear not to have been objects of intense scrutiny in the seventeenth-century Netherlands. At worst alchemists were considered wasteful and silly; at best they were held to be knowledgeable craftsmen. For example, in his hugely popular emblem book *Alcibiades’ Silenus* (1618) the famous Dutch poet Jacob Cats (1577–1660) used the alchemist to provide a moral lesson with the emblem “Fugat, non capit.” Under the title “Seekers of the Arts, Finders of the Beggar’s Purse,” Cats wrote:

The Alchymist (it’s true) has discovered many good things for us,
But who becomes rich, from the profits that he makes?
He blows, and rages all the time, though his dusty kitchen,
Even if it smoked day and night, gives nothing but dirty smells:
The man burns his pants, the woman blows away her bodice,
Someone else has the benefit, and he the empty wallet.⁷

Alchemists could be respected members of society, but advocating chrysopoeia, or the transmutation of metals, attracted ridicule and criticism. The German alchemist Johann Rudolph Glauber (1604–1670), who worked in Amsterdam in the 1640s and, after some additional wanderings, finally settled there in 1651, was widely known and respected, but his practices and published work were also criticized by contemporaries, even by colleagues. For example, in 1667 the Franeker alchemist Dominicum Risemium Dyckstal published a small pamphlet, under a pseudonym, in which he attacks what he calls Glauber’s bragging and misleading suggestions. Interestingly, Dyckstal does not use the terms “alchemy” or “alchemist”; instead, he uses the adjective “*chimische*” in the title and speaks of “*scheykondigen*” (literally, professional separators of substances).⁸ This shows that Dutch alchemists by 1667 already identified themselves as chemists

⁵ Karolien de Clippel, “Alchemist / Alge Mist: Het beeld van de alchemist in de zeventiende-eeuwse schilderkunst van de Lage Landen,” in *De wijze en de dwaas: De alchemist in woord en beeld*, ed. Davy Jacobs (Brugge: Van de Wiele, 2007), pp. 27–38.

⁶ Newman and Principe, “Alchemy vs. Chemistry” (cit. n. 4). My argument about the occurrence of these terms is based on searches for them in seventeenth-century sources in <http://www.delpher.nl>. Chemistry is still called “*scheikunde*” in Dutch today.

⁷ “Den Alchymist (’tis waer) heeft ons veel goets ontdeckt, / Maer wie van hen wort rijk, van ’t voordeel dat hy treckt? / Hy blaest, en raest altijt, doch sijn bestoven keuken, / Al roockte dach en nacht, gheeft niet dan vijse reuken: / Den man verstoect sijn brouck, het wijf verblaest haer keurs, / Een ander heeft het nut, en hy de leghe beurs.” Jacob Cats, *Silenus alcibiadis, sive proteus* (Middelburg: Hans van der Hellen, 1618), p. 60.

⁸ D. E. R. A. D. Franequernum, *Oogh-water voor den averrechtschen chimischen wechwijser D. Johan Rudolph Glauber: Waar in het grote werck der wijzen, van het Begin tot het eynde toe, kortelijck, doch duydelijck, naacktelijck, ja handtastelijck beschreven*

rather than alchemists. However, Dutch critiques of alchemy appear to have been relatively mild and inconsequential, especially compared to the intense scrutiny and persecution of alchemists in the German countries in the same period.⁹

While chemical pharmacy had been studied in German universities since the sixteenth century, alchemy initially received little attention within the newly established Dutch universities in the seventeenth century. However, this changed with the Leiden professor of medicine Franciscus de le Boë Sylvius (1614–1672), who established a chemical laboratory at Leiden University in order to gain a better understanding of the chemical principles of medicine.¹⁰ Outside the academic world, chemically prepared medicines became increasingly popular in the seventeenth century, and many Dutch cities established a medical-pharmaceutical college, a board that regulated the preparation, sale, and distribution of medicines by physicians and apothecaries in order to ensure quality and reliability.¹¹

Yet while the Holy Roman Empire, and particularly the German lands, saw a great number of traveling alchemists as well as courtly patronage of alchemists in this period, the lack of a mining industry and court culture in the northern Netherlands meant that alchemists were probably fewer and had a very different position in society.¹² Although moneymaking should not be underestimated as a motivational factor for early modern alchemists, geopolitical factors and social structures had a great deal to do with their position and perception.¹³ This is best illustrated in the work of Goossen van Vreeswijck (ca. 1626–after 1689).

UNDERSTANDING ALCHEMY IN THE DUTCH CONTEXT: GOOSSEN VAN VREESWIJCK

The work of Van Vreeswijck gives us a fairly reliable impression of popular perceptions of alchemists in the Netherlands in the last decades of the seventeenth century and some insight into the complex relations between seventeenth-century alchemy, chemistry, and medicine. Remarkably, for someone from a region with little mining activity, Van Vreeswijck was a *bergwerker*—literally translated, a “mountain worker”: a miner or, rather, a mining specialist. Mining in the Low Countries was limited to the southern regions of Limburg and Wallonia, where limestone and coal were mined until the twentieth century. Luckily, Van Vreeswijck was an adventurous and well-connected man; he worked in the Low Countries, in the German lands, in Sweden, in England for King William the Third, and even in regions now in Surinam and Canada. Over a span

wert (Groningen: Jan Collen, 1667), pp. 16–17, 23, 40. See also D. A. Wittop Koning, “J. R. Glauber en zijn Pharmacoepoa Spagyrica,” *Pharmaceutisch Weekblad*, 1950, 85(15/16):273–308.

⁹ Nummedal, *Alchemy and Authority in the Holy Roman Empire* (cit. n. 3), pp. 1–4, 147–176.

¹⁰ Bruce T. Moran, *Chemical Pharmacy Enters the University: Johannes Hartmann and the Didactic Care of Chymiatry in the Early Seventeenth Century* (Madison, Wis.: American Institute of the History of Pharmacy, 1991). On Sylvius see Evan Ragland, “Chymistry and Taste in the Seventeenth Century: Franciscus Dele Boë Sylvius as a Chymical Physician between Galenism and Cartesianism,” *Ambix*, 2012, 59:1–21; Harm Beukers, “Mechanistische principes bij Franciscus dele Boë, Sylvius,” *Tijdschrift voor de Geschiedenis van de Geneeskunde, Natuurwetenschappen, Wiskunde en Techniek*, 1980, 3:28–36; and Willem Otterspeer, *Groepsportret met dame: De vesting van macht: De Leidse Universiteit 1673–1775* (Amsterdam: Bakker, 2002), pp. 134–136.

¹¹ A Collegium Medico Pharmaceuticum was established in The Hague in 1629, in Amsterdam in 1638, in Vlissingen in 1647, and in Delft in 1682. See H. A. Bosman-Jelgersma, *Vijf eeuwen Delftse apothekers* (Amsterdam: Meesters, 1979), pp. 104–105; and Marieke M. A. Hendriksen, “Anatomical Mercury: Changing Understandings of Quicksilver, Blood, and the Lymphatic System, 1650–1800,” *Journal of the History of Medicine and Allied Sciences*, 2015, 70:516–548.

¹² Pamela H. Smith, *The Business of Alchemy: Science and Culture in the Holy Roman Empire* (Princeton, N.J.: Princeton Univ. Press, 1994), pp. 146–161. Andre Wakefield has argued that fiscal structures strongly influenced the kind of knowledge produced in early modern Germany, but in the Dutch case sociopolitical structures and geology seem to have been more important. See Andre Wakefield, *The Disordered Police State: German Cameralism as Science and Practice* (Chicago: Univ. Chicago Press, 2009), p. 24.

¹³ Carl Wennerlind, *Casualties of Credit: The English Financial Revolution (1620–1720)* (Cambridge, Mass.: Harvard Univ. Press, 2011), pp. 44–79.

of nineteen years he published nine books in Dutch on mining and alchemy—a unique body of work that has thus far received little attention from historians of chemistry.

The existing literature on Van Vreeswijck and his work is sparse, dated, and almost exclusively in Dutch. These few publications tend to consider Van Vreeswijck's books as two separate bodies of work: a mining and an alchemical corpus.¹⁴ I argue that they form an integrated whole, as Van Vreeswijck's alchemical activities cannot be separated from his knowledge and skills as a master miner. Read as a professional corpus interspersed with biographical elements, Van Vreeswijck's work gives us unique insight into the life, practices, and ideas of a man who identified as a mining specialist and whose excursions into transmutational alchemy and medicine arose from his profession.

Van Vreeswijck's books have typical alchemical titles, such as *The Red Lion, or the Salt of the Philosophers* (1672), *The Silver River, or the King's Fountain* (1684), and *The Rose and the Lily of the Kings* (1689). Although the books do indeed describe alchemical processes, the use of cryptonyms, or “*Decknamen*,” is limited, and recipes are interspersed with accounts of the author's travels and practical advice on how to set up a mine. Van Vreeswijck also occasionally makes statements about the success—of lack thereof—of his alchemical pursuits and the contemporary reception of alchemists. For example, in his 1674 book *The Green Lion* he describes how alchemists are perceived by many, and in his introduction he uses the term “chymist” to distinguish those knowledgeable about metals and minerals from “alchemists” who try to make gold from “single substances”:

An Alchemyst is seen by many decent People as a scabby Sheep; and [even] a drunk, a whoremonger, a gamester and such, as more honorable than an Alchemyst today; while everyone is scared of beastly Alchemysts who want to make Gold, which only God is allowed to do. . . . These words do not apply to sensible, wise, and honest Chymists and Philosophers; but only to those, who seek to make Gold from single substances like sulfur, mercury, and salt, which is against Nature, and totally idle. Those who, in contrast, are worth mentioning, are the ones who know to prepare the Metals and Minerals in such a way that they can serve in Medicine, and can be beneficial in other business.¹⁵

In the same book, Van Vreeswijck recounts how he worked together with the alchemist Dierik van Cal, who had shown him how he could transmute iron first into lead and subsequently into gold by adding a “red carbuncle stone.” Van Cal believed this to be the philosopher's stone and a universal medicine. However, when Van Vreeswijck attempted to create gold after Van Cal on his deathbed had begged him to continue practicing the art, he could not reproduce the process.

¹⁴ W. P. Jorissen, “Een chemicus in het gevolg van Willem III bij diens landing in Torbay in 1688,” *Chemisch Weekblad*, 1915, 47(4):836; Jorissen, “Nog eens Goossen van Vreeswijck,” *ibid.*, 1915, 47(2):28–30; C. E. P. M. Raedts, “Goossen van Vreeswijck, een Nederlandse Bergmeester van grote betekenis,” *Studies over de Sociaal-Economische Geschiedenis van Limburg*, 1962, 7:41–89; G. Doyer van Cleeff, “De leer der alchymisten,” *Album der Natuur*, 1887, pp. 365–381, 411–435; Goossen van Vreeswijck, *Alle de werken van Goossen van Vreeswyck, een 17-de eeuwse bergmeester en alchymist*, ed. F. A. H. Peeters (Tilburg: Peeters, 1982); H. A. M. Snelders, *De geschiedenis van de scheikunde in Nederland*, Vol. 1: *Van alchemie tot chemie en chemische industrie rond 1900* (Delft: Delftse Univ. Pers, 1993), pp. 17–19; and Bernhard F. Scholz, “Alchemy, Metallurgy, and Emblematology in the Works of the Seventeenth-Century Dutch ‘Bergmeester’ Goossen van Vreeswijck (1626–after 1689),” in *Emblems and Alchemy*, 13 vols., Vol. 3, ed. Stanton J. Linden and Allison Adams (Glasgow: Glasgow Emblem Studies, 1998), pp. 3–24.

¹⁵ Goossen van Vreeswijck, *De groene leeuw, of het licht der filosofhen; vertoonende alle koninklijke handelingen in het openen en ontsluiten der metalen, mineralen, vegetabilische en animalische saken, het onderkennen van hare natuur en souden, seer dienstig tot vele heerlijke medicynen, tot verscheidene schoone verwen en tincturen, en meer andere nutte voortreffelijke werken der konst, uit eigen ondervinding gunstig voorgesteld* (Amsterdam: J. J. van Waesberge, 1674), p. 39. Van Vreeswijck uses the Dutch terms “*Alchymisten*” and “*Chymisten*” in this passage.

This fragment also offers insight into the position of alchemists in society—Van Vreeswijck recounts that Van Cal's activities got him in trouble with university-trained medical doctors, who believed his stone to be antimonial glass. Moreover, his activities caused tensions in the neighborhood: “[Van Cal's] neighbors, [who] complained about him, that he would set their houses on fire by night: and if the Lords wanted to forbid him doing this, he fired even more day and night, closing off his door and windows, for two years, in the middle of the city of Nimegen; and they were not opened before he died.”¹⁶ From the rest of his account it becomes clear that alchemists, whether honest or fraudulent, were not popular neighbors. Van Cal died in isolation, with only Van Vreeswijck and Van Vreeswijck's wife for company.

In his third book, *The Golden Lion* (1671, reprinted in 1675), it appears that after an expedition to the West Indies during which he lost his three young children Van Vreeswijck worked rather unsuccessfully as an alchemist in Nijmegen, in the east of the Netherlands, where he lost his interest in alchemical practices. He wrote:

In the years of 1667 and 1668 I had as many as seven Ovens in the city of Nijmegen, and worked there day and night to bring my flasks and glasses to pieces, but gained nothing from it but ashes and dirt . . . now I can do works much better without ovens and flasks, as from all kinds of materials, like [salpeter, salt, vitriol, stone salt, calcinated wine stone, sulfur, sal ammoniac, arsenic, antimony, distilled vinegar, lime, gold, silver, copper, iron, tin, lead, and mercury], and furthermore from all the common minerals that I studied, and have not found the truth in, no matter in which way I treated them; either by distilling, calcination, and subliming, which is nothing more than a waste of time and money.

We will probably never know whether the dire circumstances in which his friend and colleague perished or his lack of success as an alchemist caused Van Vreeswijck to publish books on mining and metallurgy, but it appears that from 1674 onward it became increasingly important to him to distinguish himself from fraudulent alchemists; in his next book, *The Golden Sun* (1675), he repeats his warnings about the “villains and fraudsters” who have given alchemy the name of “gold art” (“*Goudkonst*”).¹⁷

Meanwhile, Van Vreeswijck's work had apparently become rather popular and his own interests more medical. In *The Light of the Moon, or the Glare of the Sun* (1678), the author warns printers and booksellers not to reproduce his work without his permission. Van Vreeswijck's work had always had a Paracelsian flavor to it; in all his books he refers repeatedly to the master and his work, particularly his salt-sulfur-mercury theory. In *The Silver River, or the King's Fountain* (1684), he describes the processes for creating vitriolic salts and concludes: “If you know what to do with this salt in medicine, you will search no other herb to cure the worms, which occur in all human bodies, caused by bad humors; because this salt will purge the impure from the

¹⁶ *Ibid.*, pp. 149–150. Van Cal's “carbuncle stone,” which Van Vreeswijck described as “very heavy, like gold itself, and transparent, like a ruby,” was indeed probably antimonial glass. See Principe, *Secrets of Alchemy* (cit. n. 2), pp. 90, 142–143. On the hierarchy that distinguished university-trained physicians and other health-care workers see Roy Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity from Antiquity to the Present* (London: Fontana, 1999), pp. 116–117; and Faith Wallis, *Medieval Medicine: A Reader* (Toronto: Univ. Toronto Press, 2010), p. 361.

¹⁷ Goossen van Vreeswijk, *De goude leeuw, of den asijn der wijzen: Wear in ontallyke heerlyke konsten en nutte verborgentheden ontdekt worden: Als de anima uit alle metalen en mineralen te trekken; vele ongemeene medicynen, schildergout, brandewynen uit koom sonder viese smaek, uitstekend blancketsel, kostelyke gesteenten, . . . te maken: Alles met eigen handen gewrocht, en met vele kopere platen aen den dach gegeven* (Amsterdam: Janssonius van Waesberge, 1671), preface, p. 3; and Van Vreeswijck, *Vervolg van 't cabinet der mineralen, of de goude son der filosofhen; waer in alle bewerckingen der metalen en mineralen, met de gereedschappen daer toe dienende, hare openingen, verwen, en tincturen, nevens verscheide heerlijke medcijnen, en andere seer nutte konsten, uit eigen ondervinding aen 't licht gegeven* (Amsterdam: J. J. van Waesberge, 1675), dedication, p. ii.

body.”¹⁸ Possibly Van Vreeswijck developed these ideas in discussions with a number of little-known physicians, minor noblemen, and other amateurs, who wrote panegyrics for him and to one of whom he dedicated one of these later books.¹⁹ Another possibility is that Van Vreeswijck studied medical literature and practiced medicine illegally, incorporating his practical findings back into his textual accounts—such a “feedback loop” was common among early modern alchemists, as Jennifer Rampling has demonstrated. In *The Continuation of the Golden Lion, in which are discovered, the Medicines of the Philosophers* (ca. 1686), Van Vreeswijck rejects “the cloak of wandering minds, whose clothes have sprouted from the herbal shops,” arguing that the only true medicines are mineral and that doctors should make their own medicines rather than relying on apothecaries. He also heaps criticism on academic medicine: “In the Schools of these Physicians the souls of the Dead remain locked; and Art is always exchanged for Erudition there. They are more comfortable watching the plays of the Mad, than working with their hands in charcoal, to make their Medicines through Art.”²⁰

At the time Van Vreeswijck wrote this, Leiden University was still the only university in the Low Countries with a chemical laboratory—Utrecht University would follow in 1695. Moreover, academics published little on chemistry, and what they did publish was written in Latin. This lack of academic chemistry implies that the popular perception of chemistry and chemists was shaped predominantly by the activities and printed work of figures like Van Vreeswijck, who wrote in the vernacular, rather than by academics.²¹ However, between roughly 1680 and 1730 chemistry became an indispensable topic of study in medical faculties, and alchemy was increasingly vilified in both literary and academic circles. Was there a connection between the developments in these seemingly distinct realms?

A NEW CENTURY: ACADEMIC CHEMISTRY, ROGUE ALCHEMISTS, AND SATIRE

In popular Dutch culture around 1700, alchemists were often portrayed as fraudsters and quacks who pretended to hold the secret to the philosopher’s stone and lured the general public with promises of gold making and longevity, the latter often depending on the ingestion of dangerous, metal-based medicines. (See Figure 1.) Political-satirical magazines appeared under titles such as *Arlequin Distelateur* [Harlequin Distiller] and *Arlequin Alchemist* [Harlequin Alchemist]. The

¹⁸ Goossen van Vreeswijck, *Het licht der mane, of glans der some, waerin gehandelt, wort van de verborgentheden der overmatuyrlijke dingen, bewerkingen der mineraelsche medicijnen, van hare souten, verwen, &c. item van de ware materie der Oude wijsen, als mede van de slag-roeden, kooren Brandewijnen ende meer andere konsten, ende metallische labores uyt liefde mede gedeelt* (Rotterdam: Barent van Santbergen, 1678); and Van Vreeswijck, *Silvere rivier, ofte konings fontein: Waar-in ontdekt worden veele notable medicijnen der oude filosofhen; ook van ’t sout en sulphur der metalen, ende wat voor krachten der medicijnen daar-in verborgen zijn; als mede het leven en de dood van de metalen en mineralen, haar verwen en tinctuur* (The Hague: Pieter Haagen, 1684), p. 131.

¹⁹ E.g., in *Het licht der mane* there is a panegyric by the Lord of Liessel, and *Silvere rivier* contains a dedication to a Johannes Jonolyn, a Utrecht M.D., and a brief panegyric by an Adriaan van der Vin, probably a Middelburg bookseller.

²⁰ Jennifer Rampling, “Alchemy as ‘Practical Exegesis’ in Early Modern England,” *Osiris*, 2014, N.S., 29:19–34; and Goossen van Vreeswijck, *Vervolg van de goude leeuw, waer in is ontdekt, de medecijne der filosofhen; de toebereiding van den steen IGNIS, in welken de schat der schatten verborgen sit: met een verhandeling van de schepping der eerste menschen, &c.* (Middelburg: Johannes Meertens, ca. 1686), preface, pp. 2–3, 21–22, 30–31, 21 (criticism of academic medicine).

²¹ It is possible that Van Vreeswijck was consciously placing himself in the tradition of writing about alchemy in the vernacular—Paracelsus, whom he so admired, had argued that one could learn and teach better in one’s mother tongue, and the Dutch alchemist Johann Baptista van Helmont (1579–1644) and his son Franciscus Mercurius van Helmont (1614–1698), a contemporary of Van Vreeswijck, had argued for the use of the vernacular in alchemical treatises. See Sietske Fransen, “Johan Baptista van Helmont und die Sprache der Alchemie im 17. Jahrhundert,” in *Goldenes Wissen die Alchemie—Substanzen, Synthesen, Symbolik*, ed. Petra Feuerstein-Herz and Stefan Laube (Wolfenbüttel: Herzog August Bibliothek, 2014), pp. 111–120, esp. p. 114; and Fransen, “Überlegungen zu Sprache in den Vorwörtern des *Ortus Medicinæ* von Johann Baptista und Franciscus Mercurius van Helmont,” *Morgen-Glantz: Zeitschrift der Christian Knorr von Rosenroth-Gesellschaft*, 2017, 27:201–218.



Figure 1. Follower of Jan Steen, *The Alchemists*, ca. 1700. Oil on panel, 55.7 × 45 cm. Rijksmuseum Twenthe, inventory number 0341.

medieval and early modern traditions of satirizing alchemy in English literature and, more generally, the satirizing, poeticizing, spiritualizing, popularizing, and romanticizing of alchemy in European literature have been studied in quite some detail, but little attention has been paid to Dutch literary approaches to alchemy.²²

This is striking, since between 1680 and 1742 at least three comedies appeared in print in the northern Netherlands in which alchemists of the laboratory-keeping, medicine-selling kind

²² For the magazines see Wilhelm Swaanenburg, *Arlequin distelateur of de overgehaalde nouvelles* (Amsterdam: Weduwe A. van Aaltwyk, 1726); and Anonymous, *Arlequin alchemist, componerende, uit zyn labertorium een warrent kluwetje, van duizent differente couleuren, daar hy door de verwartheid, zelf geen eind aan vind* (Amsterdam: Weduwe J. van Egmont en Zoon, 1742). For treatments of alchemy in literature see Stanton J. Linden, *Darke Hieroglyphicks: Alchemy in English Literature from Chaucer to the Restoration* (Lexington: Univ. Press Kentucky, 1996), pp. 296–297; and Theodore Ziolkowski, *The Alchemist in Literature: From Dante to the Present* (Oxford: Oxford Univ. Press, 2015), pp. 36–39.

were ridiculed.²³ The negative image of the alchemist in the popular imagination was so strong that during the collapse of the stock bubbles in 1720 the traders were compared to *Lapis-zoekers*, seekers after the philosopher's stone, in a satirical poem.²⁴ (See Figure 2.) Meanwhile, between 1718 and 1734 no fewer than four public lectures criticizing and even ridiculing alchemy were given at Leiden University. A closer reading of these texts and an analysis of the context in which they appeared shows that this was no coincidence.

The first play, the farce *The Converted Alchemist or Cheated Fraudster*, was initially published in 1680—so even before Van Vreeswijk's final books appeared—and reprinted in 1714, both times in Amsterdam. The author, David Lingelbach (1641–before 1687), was a surgeon and a prolific member of the literary society Nil Volentibus ad Arduum.²⁵ An introductory text by fellow society member Ysbrand Vincent (1641–1718) added to the 1714 edition states that many famous and wise men have lost their homes and possessions because “the damps from their flasks intoxicated their brains.” Vincent points to “Hoogduitschland,” the German lands, as the source of this foolishness. Remarkably, one of the main characters in the play, Jonker Goudschalk (literally “Goldroeg”), is described in the 1680 edition simply as “an alchemist,” whereas by the 1714 edition he has become “a German, a fraudster, and pretending to be an experienced alchemist.”²⁶ This postmortem editing of character description is rather curious, as Lingelbach himself was the son of a German immigrant.²⁷ This is not the place for an extensive sociopolitical analysis, but it appears that there was a fundamental shift in the perception of German immigrants in the Netherlands in the thirty-four years that elapsed between the two editions of the play.²⁸

Although the nationality of the main character was made explicit in the second edition, the story line remained the same otherwise. In the first few pages, the daughter of a widower complains that her father has rented the house next to that of Goudschalk and has become obsessed with making gold—he squanders her deceased mother's money, has filled the entire house with his laboratory equipment, and no longer eats or sleeps. The similarity with Van Vreeswijk's description of his alchemist neighbor Van Cal's final years is remarkable. Some of the subtler

²³ Anonymous, *Arlequin alchemist*. The plays in question are David Lingelbach, *De bekeerde alchemist of bedroogen bedrieger: Kluchtspel* (Amsterdam: Albert Magnus, 1680); Lingelbach, *De bekeerde alchemist of bedroogen bedrieger: Kluchtspel* (Amsterdam: Erven J. Lescaije, 1714); Gijsbert Tijssens, *Doctor Hans gepromoveert tot de narrekap van Esculapius, op het uilebord van Mercurius: Blyspel* (1727), <http://tempo.idcpublishers.info.proxy-ub.rug.nl/protected/adobepdf/H-2500-16735D/16735D.pdf>; and Jacob Campo Weyerman, *Den Maagdenburgsche alchemist, of den gewaanden Baron van Syberg ontmaskert: Blyspel* (Utrecht: Juriaan van Paddenburg en Anselmus Muntendam, 1733).

²⁴ “Contrarolleur van de gelukkige en rampzalige lapis-zoekers, 1720,” http://www.dbnl.org/tekst/_taf002tafe01_01/_taf002tafe01_01_0124.php.

²⁵ Mr. Ruys, “David Lingelbach,” in *Nieuw Nederlandsch biografisch woordenboek*, ed. P. C. Molhuysen and P. J. Blok, 10 vols., Vol. 2 (Leiden: A. W. Sijthoff's Uitgevers-Maatschappij, 1912), pp. 821–822. The works of the members of Nil Volentibus ad Arduum were long reviled by literary theorists but since the 1990s have gained more appreciation as examples of the influence of French classicism on Dutch literature. See, e.g., K. M. Lindhout, “Frans-classicisme in *De bekeerde alchemist*,” *Literatuur*, 1990, 7:83–90.

²⁶ “Jonker Goudschalk, een Duitscher, bedrieger, en zich uitgeevende voor een ervaren Alchemist”: Ysbrand Vincent, “Aan de dichtlievende lezer,” in Lingelbach, *De bekeerde alchemist of bedroogen bedrieger* (1714) (cit. n. 23) (emphasis added).

²⁷ Ruys, “David Lingelbach” (cit. n. 25). Mike A. Zuber has noted the heightened association of alchemy with Germany and sorcery in the 1714 edition in his blog: “A Sound Dutch Beating for Fraudulent German Alchemy,” in *Praeludia Microcosmia: Occasional Notes on Chymistry, Theosophy, and Religious Dissent in the Early-Modern Period*, 31 Mar. 2014, <https://praeludiamicrocosmica.wordpress.com/2014/03/31/a-sound-dutch-beating-for-fraudulent-german-alchemy/>.

²⁸ German immigrants, fleeing war and religious persecution or working for the Dutch East India Company, were common in the Netherlands for much of the seventeenth and eighteenth centuries, and there seems to be no good reason for this apparently sudden scapegoating of Germans. However, Vincent, who was a rich paper trader with strong business connections in Antwerp, may have been discontented with the results of the Treaty of Utrecht (1713), which effectively put the southern Netherlands under Austrian (German-speaking) rule. See Maurits Sabbe, “Ysbrand Vincent en zijn Antwerpsche vrienden,” *Verslagen en Mededelingen van de Koninklijke Vlaamse Academie voor Taal- en Letterkunde*, 1924, pp. 499–551.



Figure 2. Anonymous print, caricature comparing stock traders to seekers after the philosopher's stone. Rijksmuseum, object number RP-P-OB-83.547, <http://hdl.handle.net/10934/RM0001.COLLECT.477497>.

satirical references suggest that Lingelbach himself was familiar with basic alchemical processes and *Decknamen*. For example, one of the characters speaks of a substance that is made visible through “women’s work and child’s play”; “child’s play [*ludus puerorum*] and women’s work [*opus mulierum*]” was a common alchemical aphorism that was interpreted in many different ways. It referred generically to the making of the philosopher’s stone after the correct ingredients are sealed in a flask and subjected to extended heating.²⁹ A remark on the same page appears to refer both to the transmutation of philosophical mercury and to the production of vermilion—a mercury compound that was produced in great amounts in Amsterdam between 1600 and 1850 and caused many cases of mercury poisoning: “This is the fire that always burns evenly / Never stronger, never weaker / And melts, turns and rots her Mercury, one can ridicule it / When it is done thoroughly / It becomes the color of dried blood.”³⁰

Eventually, the alchemist Goudschalk is deceived by the other characters and the father returns to his senses. The numerous references to alchemical terms and processes show that although there was a lot of skepticism about transmutational alchemy and claims for a universal medicine or longevity, many people in the upper classes at whom this play was aimed were also fairly familiar with alchemical practices and claims and the associated vocabulary—otherwise the humor would have been lost on them.³¹

Superstition, extreme ideas, and miraculous claims were still associated with alchemy in the Netherlands in the first decades of the eighteenth century, as becomes clear from a 1727 comedy. In this play about “Doctor Hans,” a “cobbler with a doctoral degree,” we find familiar themes of infidelity, quackery in the form of mercury cures and piss prophecy, and ridiculing of university degrees. The author, the penny-a-line writer Gijsbert Tijssens (1693–1732), was part of an Amsterdam circle of satirists.³² Even the name of the publisher and the city receive satirical treatment on the title page, according to which the booklet was published “in the Monkey town of Galen, on the corner of Hobo Lane, under the press of shoe lasts and wool combs.” Although it was most likely published in Amsterdam, where Tijssens lived and the play was set, “Monkey town of Galen” may refer to Harderwijk. The university in this Dutch city had a slightly dubious reputation, as many students enrolled there only toward the end of their studies and graduated within days.³³

²⁹ Lingelbach, *De bekeerde alchemist of bedroogen bedrieger* (1714) (cit. n. 23), pp. 2–5, 12. On these processes see Frank van Lamoen, “Vijf handschriften van Burghard de Groot M.D. (1661/62–1744),” *Jaarverslagen Koninklijk Oudheidkundig Genootschap*, 1991, pp. 73–82, esp. p. 78. K. M. Lindhout, “‘Daar in zal goud zyn, wat men ziet’: De alchemistische bronnen voor David Lingelbachs *De bekeerde alchemist* (1680),” *Spiegel der Letteren*, 1990, 32:309–325, has argued that “women’s work and child play” was used frequently to refer to alchemical practice in seventeenth-century literature (see p. 311).

³⁰ “Dit is ’t vuur dat altyd in een stand / Nooit sterker, en nooit flauwer brandt / En haar Merkuur, men mag ’t bespotten, versmelt, omdraaijen doet, en rotten / Zo lang tot het dan deur en deur / Wordt als geronnen bloed van kleur.” Lindhout, “‘Daar in zal goud zyn, wat men ziet,’” p. 313. On the production of vermilion in Amsterdam see Snelders, *De geschiedenis van de scheikunde in Nederland*, Vol. 1 (cit. n. 14), pp. 41–42.

³¹ Lindhout, “‘Daar in zal goud zyn, wat men ziet,’” argues persuasively that Lingelbach probably used works by Glauber and Van Vreeswijck as the sources for the alchemical references in his play.

³² http://www.dbnl.org/tekst/_med009199601_01/_med009199601_01_0012.php.

³³ According to a popular contemporary rhyme, “Harderwijk is een stad van negotie, verkoopt blauwe bessen, harde bokkens, en brieven van promotie” (“Harderwijk is a city of trade; blue berries, hard bloater, and doctoral degrees are sold there”). The rhyme probably first appeared in print in the 1724 edition of *Pans fluytje*, a collection of satirical verse aimed at Dutch students of which at least five editions with various subtitles came out between 1665 and 1724. The quip referred to the fact that it was considerably cheaper to take the doctoral exam in Harderwijk than in Leiden. However, the reputation of Harderwijk’s university among academics was actually not that bad: respected scholars like Boerhaave and Linnaeus also obtained their degrees there. Anonymous, *Pans fluytje ofte heydens banket, blaazende loopjes met hoopjes, en stukjes* (Amsterdam: Siwerd Vroegthuis, 1724), p. 73; and Wilco van den Brink, “Pan’s fluytje: Vraagtekens bij een dubieuze bestseller,” <https://www.kb.nl/themas/gedrukte-boeken-tot-1800/pans-fluytje-vraagtekens-bij-een-dubieuze-bestseller>.

The shoe lasts and wool combs are a reference to the use of the piss prophet's diagnostic object—urine—in the production of shoes and wool.³⁴

The “Doctor Hans” of the title does not make his appearance on the stage until the second act, where he is described as follows:

Doctor Hans is seated on a wagon, forged from all metals, pulled by crows, ravens, bats, and birds of that sort. Around his wagon walk the seven planets, their hair connected with a rope. He is dressed in a professor's gown; Novelty stands behind him, crowning him with the fool's cap of delusional erudition; in his right hand he holds his idol Mercury, and in his left the incomprehensible book of learning of Jacques Böhm. Death steers his wagon. While Truth flees to True Scholarship, who looks at him and all his works with a reversed spyglass, the . . . mystic demagogues kneel for his chariot of wool-combing medicine.³⁵

The “incomprehensible book of learning of Jacques Böhm” is a reference to the work of the German cobbler, Christian mystic, and theologian Jakob Böhme (1575–1624), whose writing was influenced by Neoplatonists and alchemical writers such as Paracelsus. In brief, the entire iconography of the scene ridicules metallic transmutation, hermetic and mystical writing, mercury cures, and piss prophecy—but also the limits of scholarly learning. “True Scholarship,” after all, uses a spyglass—invented only in the previous century and the basis for a scientific instrument, the telescope—the wrong way around, thus blinding itself, rather than seeing sharply what is right in front of it.³⁶ Of course, writers like Lingelbach and Tijssens made use of theatrical means such as exaggeration and jest, but their work was certainly inspired by real-life characters—as the case of the “Baron” shows.

As the second edition of Lingelbach's play already suggested, traveling “alchemists,” particularly from the German lands, were a source of wonder, entertainment, and distress in the northern Netherlands in the first decades of the eighteenth century. The best-documented case is that of the so-called Baron van Syberg in the 1730s.³⁷ In the 1720s Johann Heinrich von Syborg (commonly spelled “Syberg” or “Seyberg” in Dutch sources), the son of a Magdenburg burgomaster, began his fraudulent practices in Germany—he promised to unearth treasures and to make portable gold, which bestowed longevity. In 1731 he made his appearance in the Republic, posing as an alchemist and possessor of the philosopher's stone. Syberg left a trail of debt, heartbroken women and men, and disappointed and embarrassed investors and patients.³⁸ Yet he operated

³⁴ On the history of uroscopy, the visual assessment of urine to diagnose disease, see Michael Stolberg, *Uroscopy in Early Modern Europe* (Farnham: Ashgate, 2015).

³⁵ “Doctor Hans zittende op een wagen, uit alle metalen t'zaam'gesmeed die getrokken word door Kraaijen, Ravens, Vleermuizen, en diergeyke soort van gevolgelte. Rontom zyn Wagen lopen de zeven Planeten, in 't haer met een snoer aan elkander vast gemaakt. Hy is gekleed met een Professoor's rok; de Nieuwigheid staat agter hem, die hem den Narmkap der Waangeleerdheid opzet; in zyn regte hand heeft hy zyn afgod Mercurius, en in zyn linker het onverstaanelyk boek der geleerdheid van Jaques Bhöm. De Dood ment zyn Wagen. Terwyl de Waarheid haar toevugt tot de regte Geleerdheid neemt, die hem, en alle zyn werken overdwars met een Verreyker aanziet, knielen Bregtje, Schynfyn, Zemeltje, en andere Mystike Geesdryvers voor zyn triomfkoets der wolkammende Geneeskunde.” Tijssens, *Doctor Hans gepromoveert* (cit. n. 23), p. 20.

³⁶ Lawrence M. Principe and Andrew Weeks, “Jacob Boehme's Divine Substance Salitter: Its Nature, Origin, and Relationship to Seventeenth Century Scientific Theories,” *British Journal for the History of Science*, 1989, 22:53–61, esp. p. 54; and Tijssens, *Doctor Hans gepromoveert*, pp. 21, 24–25, 41, 51, 54–57.

³⁷ See, e.g., Jacob Campo Weyerman, *De levens byzonderheden van Johan Hendrik, Baron van Syberg*, ed. André Hanou and Hanna Stouten (Deventer: Sub Rosa, 1984); Maria van Vliet and Frank van Lamoen, *Syberg: De Zoetermeerse alchemist* (Zoetermeer: Astra, 2010); and Rietje van Vliet, “Alchemistische praktijken in Zoetermeer; de geschiedenis van de beruchte goudmaker, Baron van Syberg,” *'t Seghen Waert: Kwartaalblad van de Vereniging Historisch Genootschap Oud Soetermeer*, 2011, 30:3–35.

³⁸ Peter Altena, “Literatuur als mogelijk bedrog: Over de levens byzonderheden, van Johan Hendrik, Baron van Syberg (1733) van Jacob Campo Weyerman,” in *Feit en fictie in misdaadliteratuur (±1650–±1850)* (Amsterdam: Werkgroep Strafrechtsgeschiedenis

independently and was never formally prosecuted; like other German alchemists working in the Low Countries, he does not appear to have had a rich patron—something that might be explained by the fact that the region lacked both active mines and a wealthy political elite interested in investing in alchemical activities. Syberg's appearance in the Republic and the subsequent reports about his activities in popular media and literature did, however, coincide with renewed academic declamations about the place and excesses and errors of chemistry.

BOERHAAVE'S CHEMISTRY AND THE ACADEMIC RENUNCIATION OF ALCHEMY

These publications suggest that the strain between alchemists and the rest of society was increasingly felt in the first decades of the eighteenth century. In the course of the seventeenth century, chemistry had been introduced at universities as a subordinate subject, like botany, that was taught in faculties of medicine to educate physicians about remedies and their preparation. Principe has already briefly discussed some of the rhetorical attacks on transmutational alchemy at Leiden University in this period, and my analysis shows that Herman Boerhaave (1668–1738), lecturer and, later, professor of medicine, botany, and chemistry, is likely to have been the driving force behind these declamations.³⁹

In his inaugural lecture of 1718, Boerhaave discusses how chemistry should be purged of its errors. The nature of this piece determined much of the rhetoric—the lecture was aimed at a general academic audience, and many auditors knew little about chemistry. Moreover, in the rhetorical tradition history was used as what Cicero called a *magister vitae*—to teach life lessons. The central argument of the oration is that chemistry has erred but that it has corrected its own errors. Boerhaave discusses what he considers to be the worst of these errors—not so much the commonly perceived problem that chemistry obtains few results and wastes property but, rather, that its practitioners display ignorance and profane religion by interpreting the Scriptures as alchemical allegories; they are also prone to superstition, generalizing, expressing extreme iatrochemical ideas, and making miraculous claims, particularly regarding antimony and life elixirs.⁴⁰

Around the time Syberg appeared in the Netherlands, Boerhaave started to delegate tasks—in February 1729 he had requested and been granted honorable discharge as professor of botany and chemistry, maintaining only his chair in medicine. The curators of the university asked Boerhaave to suggest a worthy successor, but it would be two years before a new professor of chemistry was appointed. Eventually, in November 1730, Hieronymus David Gaubius, or Jerome Gaub (1705–1780), was chosen from nine names suggested by Boerhaave. This son of a Heidelberg cloth merchant had studied in Harderwijk and Leiden, defended a thesis on physiology in Leiden in 1725, and practiced as a physician in Amsterdam. The facts that Gaub's name was the fifth on Boerhaave's list and that he was appointed as praelector rather than professor strongly suggest that he was not the first choice.⁴¹ It is thus no surprise that the young praelector used

van de Vrije Univ. Amsterdam, 1985), pp. 5–23, esp. pp. 7–8; and Johann Christian Wolff, *De gewaende baron, en bedrieglyke goudmaker ontmaskert; of, het leven en de gepleegde bedriegeryen van Johan Henrik van Syburg* (Utrecht: Willem Kroon, 1732).

³⁹ Principe, "Alchemy Restored" (cit. n. 1), pp. 305–306. On the introduction of chemistry into the universities as a subordinate subject in the course of the seventeenth century see Moran, *Chemical Pharmacy Enters the University* (cit. n. 10), pp. 1–10; and E. Kegel-Brinkgreve and A. M. Luijendijk-Elshout, *Boerhaave's Orations* (Leiden: Brill, 1983), p. 182.

⁴⁰ Herman Boerhaave, *Hermani Boerhaave sermo academicus de chemia suos errores expurgante, quem habuit, quum chemiae professionem in academiâ lugduno-batavâ auspicaretur* (Leiden: Petrus van der Aa, 1718); Kegel-Brinkgreve and Luijendijk-Elshout, *Boerhaave's Orations*, pp. 178–187; and Rina Knoeff, *Herman Boerhaave (1668–1738): Calvinist Chemist and Physician* (Amsterdam: Edita, 2002), pp. 115, 138.

⁴¹ Sophia Wilhelmina Hamers-Van Duynen, *Hieronymus David Gaubius, 1705–1780: Zijn correspondentie met Antonio Nunes Ribeiro Sanches en andere tijdschriften* (Assen: Van Gorcum, 1978), pp. 5–18. Before Gaub, Boerhaave listed Georgius Joannes

his inaugural lecture of May 1731 to honor the man to whom he owed his new job, stressing his greatness and confirming his ideas.

The lecture aimed to demonstrate that chemistry deserves a place among the academic sciences, and in it Gaub continues Boerhaave's argument of more than a decade earlier.⁴² He attacks the pseudo-chemists, the illiterates and frauds who have given the science a bad reputation, before arguing that true chemistry, practiced according to the rules of science—recording experiments and comparing their outcomes—improves human understanding and medicine. Ironically, some of the regents and notables attending the inaugural lecture may themselves have been confronted with the pseudo-chemist Syberg and his practices soon thereafter: in late 1731 and the first months of 1732, Syberg managed to gain something of a reputation as a healer in diplomatic circles in The Hague, a mere twenty kilometers from Leiden. By May 1732 various newspapers had mentioned him, first reporting his successes as a healer; but soon his reputation as a fraudster overtook him, in part because of a translated German libel that reported his earlier crimes in Germany. By late 1732 he had moved to Prussia by royal invitation, only to be unmasked there too.⁴³

In the same year Boerhaave's authoritative chemical textbook, the *Elementa chemiae*, was published. Spurious editions had appeared as early as 1724 and were so popular that they were even translated into English. Rina Knoeff and John Powers have already demonstrated that Boerhaave was fascinated by the idea of metallic transmutation, but his lifelong chemical experiments, especially with mercury, made him increasingly skeptical about its feasibility, although he never rejected the possibility altogether.⁴⁴ His complex relationship with alchemy is also reflected in the *Elementa chemiae*. In the first volume of the book he discusses the theory of chemistry, and he lists alchemy in the chapter on "The Usefulness of Chemistry in the Mechanical Arts," after glassmaking, metallurgy, dyeing, brewing, and cooking. Here it is instantly clear that Boerhaave did not define alchemy narrowly as metallic transmutation. In the first paragraph he remarks that he had "not met any writers on natural philosophy, who treat the nature of bodies, and the manner of changing them, so profoundly, or explain'd them so clearly as those called alchemists." Moreover, he states that only some alchemists hold the opinion that a mercurial matter is the origin of all metals and can be converted into gold and silver. He ends the section with some words of warning: "Credulity is hurtful, so is incredulity—the business therefore of a wise man is to try all things, hold fast what is approv'd, never limit the power of God, nor assign bounds to nature."⁴⁵

Boerhaave's ambivalence about alchemy and its traditions also becomes clear throughout the experiments he describes in the *Elementa chemiae*, in which he both uses and ridicules hermetic language. For example, in a description of the process of the "regeneration of nitre," Boerhaave stated that "alkali appears a kind of unimpregnated or female body, to be impregnated by an acid,

Alberti, Adriaan van Royen, his nephew Herman Kaau, and Samuel du Rij. The first was suspected of being a secret Catholic, the second already held an appointment as professor of botany, Kaau probably refused because he wanted to continue his father's practice, and Du Rij already had a flourishing practice. *Ibid.*, pp. 22–23.

⁴² Hieronymus David Gaubius, *Oratio qua ostenditur chemiam artibus academicis jure esse inserendam* (Leiden: Conrad Wishoff, 1731).

⁴³ Weyerman, *De levens byzonderheden van Johan Hendrik, Baron van Syberg*, ed. Hanou and Stouten (cit. n. 37), pp. 6–7; and Altena, "Literatuur als mogelijk bedrog" (cit. n. 38), pp. 10–11 (move to Prussia).

⁴⁴ Knoeff, *Herman Boerhaave* (cit. n. 40), p. 116; and Powers, *Inventing Chemistry* (cit. n. 4), pp. 82–83, 59–61, 178–189. On Boerhaave as a chemist and the publication history of his chemical lessons see G. A. Lindeboom, *Herman Boerhaave: The Man and His Work*, ed. Mart van Lieburg, 2nd ed. (Rotterdam: Erasmus, 2007), pp. 201–228.

⁴⁵ Page numbers and quotations here are from the English edition. Herman Boerhaave, "The Usefulness of Chemistry in the Mechanical Arts," in *Elementa chemiae* (London: T. Longman, 1732), 2 vols., Vol. 1, pp. 178–205, esp. pp. 200–204; for the quotations see pp. 200, 204.

which acts as the male with respect thereto, and generates its own kind, or preserves its species.” The impregnation and procreation metaphors can be found elsewhere too.⁴⁶ Yet occasionally Boerhaave rejects a too-literal interpretation of similar hermetic descriptions of alchemical processes—for example, when he states that the material resulting from a process called “vegetating nitre,” which resembles “a kind of actual little branching plant,” has led some chemists to form “so many fables” of the resuscitation of plants from their own ashes. However, he also explains and justifies hermetic descriptions—for example, when he explains that “the particular volatility of sal-ammoniac, which is able to sublime a metal, naturally so fixed, and so hard to melt, as iron,” is the reason that “the philosophers have called this salt the rapacious bird, the white eagle, and the key that unlocks the body of metals.”⁴⁷

At times, Boerhaave assumes that his readers are acquainted with alchemical terminology, such as when he refers to a substance being made “in the moist way.”⁴⁸ Yet although he uses language that at times sounds distinctly alchemical or hermetic to our ears, he is highly critical with regard to the transmutation of metals. His experiments led him to consider the possibility that what others may have understood as transmutation could simply be a case of thoroughly mixed substances being separated through a chemical process. For example, when listing a process in which lead and vegetable oil are mixed, he concludes: “we are often ignorant whether metals are concealed in certain bodies or not; how wonderfully they may be disguised, and how often they may proceed from matter not thought to contain them; when they have been often falsely supposed to be obtained from them by transmutation. All these particulars admonish us to be cautious of the impositions of the fraudulent alchemists.” Similarly, in his discussion of an experiment creating mercury amalgams, Boerhaave wrote: “Metals, made into an amalgam, may be mixed, confounded, and secretly concealed among one another. I believe that alchemy depends on this solution of metals by mercury.” Although he acknowledged the creation of metal amalgams as foundational for gilding, he scoffed that “the fraudulent alchemists often secretly conceal gold or silver”—that is, they mix it with mercury. This kind of deception is easy to unmask, however: “if a little of this mercury be put into an iron ladle, and held over the fire, the mercury flying away, and leaving the metal behind, discloses the cheat.”⁴⁹ So Boerhaave refuted alchemy as the fraudulent transmutation or amalgamation of metals and ridiculed literal interpretations of hermetic descriptions of chemical processes, yet he also expected his readers to have a basic understanding of alchemical language, delved into alchemical works, and occasionally explained and defended hermetic descriptions.

The *Elementa chemiae* was the result of years of chemical experiments and lectures by Boerhaave. By the time it appeared he was sixty-four years old, but he would devote much of the last years of his life to experiments on mercury, trying to check claims about the possibility of metallic transmutation.⁵⁰

⁴⁶ Boerhaave, *Elementa chemiae*, Vol. 1, pp. 201, 249–250, on p. 250. See also *ibid.*, Vol. 2, Pt. 3, p. 287: “Containing the Processes, or the Operations of the Art, Section III: Chemical Operations upon Minerals.”

⁴⁷ *Ibid.*, Vol. 2, pp. 252–253, 283–284.

⁴⁸ *Ibid.*, e.g., p. 290. The moist way stipulates the use of watery solvents to dissolve gold in preparation for making the philosopher’s stone, while the dry way maintains that the Philosophical Mercury is a metallic solvent prepared from common mercury, “the water which does not wet the hands.” The moist way, wet way, or *via humida* hailed back to Basil Valentine, while the *via sicca* was practiced by alchemists following pseudo-Geber, the so-called Mercurialist school. See Lawrence M. Principe, *The Aspiring Adept: Robert Boyle and His Alchemical Quest: Including Boyle’s “Lost” Dialogue on the Transmutation of Metals* (Princeton, N.J.: Princeton Univ. Press, 1998), p. 153.

⁴⁹ Boerhaave, *Elementa chemiae*, Vol. 2, pp. 291, 315.

⁵⁰ Herman Boerhaave, *De mercurio experimenta* (Utrecht: Jurriaan van Paddenburg, 1735).

THE 1730s: A FINAL UPSURGE OF ALCHEMICAL INTRIGUE
AND ACADEMIC RHETORIC

Meanwhile, the most notorious self-styled alchemist of the Low Countries was still at large, as a small notice that appeared in the *Leydse Courant* on 22 April 1733 indicates: “There is a message that the notorious Baron Syberg was in Strasbourg at the beginning of this month, and claimed to be able to make the universal medicine from gold, but the Governor made him leave the city and even the Alsace region straight away, after which the arch deceiver made his way to Switzerland.” (See Figure 3.) Although Syberg spent less than two years in the Low Countries, his memory lived on much longer. This was largely due to the work of Jacob Campo Weyerman (1677–1747), a prolific writer of satirical magazines, plays, and painters’ biographies. The men allegedly met briefly when Syberg lived in the Dutch town of Zoetermeer in 1732, and when Syberg’s reputation had soured and he was out of sight in 1733 Weyerman published a book in which Syberg was ridiculed. The “Baron” remained a source of inspiration for Weyerman: a 1733 satire and a 1737 series of satirical magazines are dedicated to Syberg, and in 1739 Weyerman made fun of the alchemical theories on which Syberg based his promises.⁵¹

Weyerman’s book gives an interesting impression of how alchemists were portrayed in 1730s Dutch popular culture.⁵² It opens with a sarcastic dedication to “all hermetic physicians,” in which he states that “so honourable as a meritorious physician is, so disgraceful is a cheating Paracelsian, a vaunting quack, a seller of wind.” Syberg is portrayed as a cheating, stealing, gluttonous drunk, overweight and gaudily dressed. Yet Weyerman also included a paragraph on the “small chimist workhouse” Syberg had in the garden of his Zoetermeer mansion, where, he claimed, Syberg had shown him a distilling oven containing a flask with “metallic water” and perfectly white pearls. With “terrible bragging,” Syberg told Weyerman that the pearls had been low-quality Scottish pearls and that his metallic water had perfected them. He claimed that he could turn all kinds of false pearls into the finest Oriental pearls and that he was capable of transforming simple crystal into precious “carbuncle stones.”⁵³

In 1734, the year after Weyerman’s book on Syberg appeared, Gaub was promoted to professor of chemistry, and on this occasion he gave another inaugural lecture, this one on the vain expectations of prolonged life promised by chemists. Following the structure of a typical classical oration, Gaub attempted to persuade his audience by using logical arguments and discussing the counterarguments of imagined opponents. One of the key elements, as the title of the work suggests, was that the new professor argued that the alchemists’ promise of prolonged life was fraudulent. Yet not once does Gaub refer to the contemporary fraudsters who gave alchemy and chemistry a bad reputation: the opponents he invokes are Paracelsus (1493/1494–1541) and Jan Baptiste van Helmont (1577–1644). Although elements of their work were indeed heavily criticized, Boerhaave and his followers studied many of their claims very seriously. Gaub’s focus

⁵¹ *Leidsche Courant*, 22 Apr. 1733; Jacob Campo Weyerman, *De levens byzonderheden, van Johan Hendrik, Baron van Syberg, Heer van Ermelingshoven en Bonckersbek, &c.* (Utrecht: Jacobus van Lanckom, 1733); Weyerman, *Den Maagdenburgsche alchemist* (cit. n. 23); Weyerman, “Opdrag,” in *Den kluyzenaar in een vrolyk humeur* (Utrecht: Anselmus Muntendam, 1733); and Weyerman, *De steen der wijzen, bewaartheyt uyt de heilige schrift, en uyt de grondbeginsels der aloude wysgeeren* (Utrecht: Johannes Esvelt, 1739), p. 48. See also Van Vliet, “Alchemistische praktijken in Zoetermeer” (cit. n. 37), pp. 7–8.

⁵² See Weyerman, *De levens byzonderheden van Johan Hendrik, Baron van Syberg*, ed. Hanou and Stouten (cit. n. 37), pp. 43–50. It is hard to tell how reliable Weyerman’s book, which recounts his meeting with Syberg and a visit to his alchemical laboratory, is: Weyerman himself was not exactly famous for his love of the truth, and he ended his life in jail, convicted of libel and blackmail. In a literary analysis from the 1980s it is described as somewhere between a picaresque novel and a criminal bibliography: Altena, “Literatuur als mogelijk bedrog” (cit. n. 38), pp. 5–23.

⁵³ Weyerman, *De levens byzonderheden van Johan Hendrik, Baron van Syberg*, ed. Hanou and Stouten, pp. 8, 272–274. “Carbuncle stones” referred to precious red stones in general.

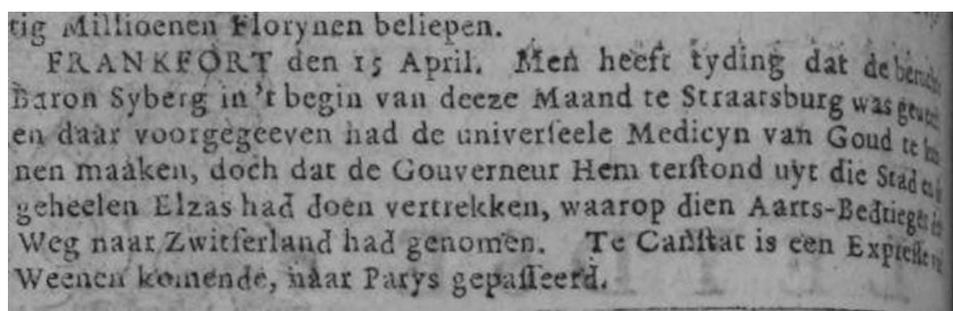


Figure 3. News item in the *Leidsche Courant*, 22 April 1733. Source: www.delpher.nl.

can be explained by the fact that it was not—in contrast to our day—considered appropriate to discuss events in contemporary popular culture in an academic oration.⁵⁴ However, by framing his critique of alchemical claims about making gold and the prolongation of life historically and academically, he could indirectly criticize current affairs as well.

The fact that writers like Weyerman kept the image of fraudulent alchemists like Syberg alive in the public imagination indicated that the rhetorical academic crusade against the excesses of chemistry was not yet finished either. In 1737, the same year in which Weyerman published a series of magazine articles ridiculing Syberg's victims, Boerhaave's nephew Abraham Kaau (1715–1758) gave a public lecture at Leiden University titled *Declamatio academia de gaudiis alchemistarum*. Kaau was the son of Jacob Kaau, a physician, and Margriet Boerhaave, Herman Boerhaave's sister. In 1733 he enrolled as a student at Leiden University and studied with his uncle. Three years later he went deaf overnight, so when he gave his lecture, for which he received a prize from the university's board of governors in the form of a medal, he was unable to hear himself speak.⁵⁵

The first page of the printed lecture contains a disclaimer that seems to suggest that someone helped him to write and improve it—this person may of course have been his uncle and mentor.⁵⁶ As the title—*On the Delights of the Alchemists*—suggests, the lecture is satirical in tone, written in an unusual short-sentence style that does not resemble the usual academic works of the time. Repeatedly, cynical outbursts interrupt the text—for example, “This is the Stone, this is the Philosopher's Stone! This is the father of the sun, the moon is born from this mother!”⁵⁷ Kaau also made fun of the alchemists' promise of longevity: “Grey hairs fall out, the hair becomes youthful, teeth are renewed, worn nails are reborn.”⁵⁸ However, the main points of the argument strongly resemble those made by Boerhaave in his 1718 lecture and in Gaub's orations of 1731

⁵⁴ Hieronymus David Gaubius, *Oratio de vana vitae longae, a chemicis promissae, expectatione* (Leiden: Isaac Severinus, 1734). I thank Ruben E. Verwaal for his help in translating Gaub's oration and for sharing his insights about its contents.

⁵⁵ Bram Oldenhuis Arwert, “Abraham en Herman Kaau Boerhaave: Hoe een erfenis ze aan de medische top van Rusland bracht” (M.A. thesis, Univ. Groningen, 2001); and Irina Sjtjedrova, “Abraham Kaau-Boerhaave: Bladzijden uit de biografie van een academicus,” in *Noord- en Zuid-Nederlanders in Rusland 1703–2003*, ed. E. Waagemans, J. S. A. M. Koningsbrugge, and Nadja Louwerse (Groningen: INOS, 2004), pp. 293–312.

⁵⁶ “Hoc in votis erat, ut judicarent Auditores, an carenti facultate hauriendi praecepta a Sapientibus auri accommodatae instillanda, vox superesset aliis animi sensa insinuando idonea. Hoc obtento laetus abissem. Sed benevolentia, nec opinanti, plausus dedit. Imo auditam benigne Orationem velle se & perlegere testati sunt Veri, quorum jussa sequidebeo. Prodit ergo, non sponte mea. Utinam haud ita jam displiceat, ut hujus me deinde poeniteat obsequii!” Abraham Kaau Boerhaave, *Declamatio academia de gaudiis alchemistarum* (Leiden, 1737), p. 1.

⁵⁷ “Lapis hic, Philosophorum hic Lapis! Patre hic sole, Luna hic natur Matre!” *Ibid.*, p. 7.

⁵⁸ “Cani cadunt, fubeunt juvenilis capilli; dentes renovantur; lapsis succedunt renati unguis.” *Ibid.*, p. 15.

and 1734. Chemists industriously study mysterious secrets and bring new knowledge to light through their hard work; they are curious, scrutinize everything thoroughly, and find the same law inscribed everywhere. Alchemists, meanwhile, refute the work of chemists, try to keep their business a secret, and are only seeking to enrich themselves by promises of making gold and a universal panacea or life elixir.⁵⁹

CONCLUSION

The year 1737 marks the abrupt end of the publication of satirical plays and academic declamations against transmutational alchemy in the Netherlands. Herman Boerhaave died in 1738. His nephew graduated in the same year, ran an apothecary shop for a few years, and became professor of anatomy and physiology at the Academy of Sciences in St. Petersburg in 1746.⁶⁰ Gaub would continue to lecture in chemistry until 1764, but his publications focused on medicine, and he does not seem to have expressed himself about chemistry in public again. Weyerman stopped publishing on Syberg after 1737, and as the alchemist's trail had already gone cold after he left the Low Countries in 1733 he soon fell into oblivion. Undoubtedly other traveling alchemists frequented Dutch towns and cities after Syberg disappeared, but it seems that none of them were as convincing and successful as the "Baron." To what extent the popular and academic satire discussed here contributed to the apparent extinction of the kind of alchemist that promised to make gold and life-lengthening elixirs in the Low Countries can never be established with absolute certainty.

However, these works do shed new light on Principe's suggestion that transmutational alchemy was "vilified by declamation rather than disproved by demonstration." In the Low Countries, academic and literary declamations were indeed used to vilify alchemy, exactly because alchemy had acquired a bad reputation thanks to the obscure language and false claims of figures like Syberg. Ridicule and rhetoric were simply much more suitable weapons in the war against chrysopoeia and the universal panacea than chemical demonstrations or legal prosecution. This was a battle of eloquence rather than one of proofs. The distinct increase in vicious academic attacks on transmutational alchemy as fraudulent in the first half of the eighteenth century should be seen in conjunction with current affairs in the Netherlands, which were also reflected in popular plays and publications. Whereas fraudulent alchemists were prosecuted and stood trial in the Habsburg Empire around 1600, they were vilified in popular literature and academic declamations in the Low Countries a century later. The excesses of alchemy, evident to everyone, inspired both academics and popular writers; their treatments were fueled by larger-than-life characters like Van Cal and, later, Syberg, who managed to mislead not only the lower classes but also the regents and the nobility in a country with a limited alchemical tradition. In this sense, the vilification of transmutational alchemy in the Netherlands was indeed rhetorically, morally, and socially motivated.

Whereas alchemists like Van Vreeswijck in the seventeenth century were sometimes disliked and mistrusted because of their false claims and the inconvenience their activities caused their neighbors, it appears that many were also respected and sometimes sought after for their skills and knowledge in fields like mining and metallurgy; failed alchemical experiments and gullible clients were also a source of entertainment. In contrast to the situation in the Habsburg Empire and, specifically, the German lands, where alchemical practice was deeply intertwined with court culture and the mining industry, the specific geological and sociopolitical structure of the Low

⁵⁹ *Ibid.*, pp. 6, 13.

⁶⁰ Sijtsjedrova, "Abraham Kaau-Boerhaave" (cit. n. 55), pp. 307–308.

Countries meant that alchemy and alchemists were generally viewed with a mixture of interest and skepticism but were hardly ever the source of deep suspicion or harsh persecution.

Although not entirely uncontroversial, alchemy was initially understood as a more or less accepted set of practices, yet as chemistry became an academic discipline and the Netherlands increasingly confronted fraudulent self-styled German alchemists such as Syberg, who was a villain without any truly useful skills, rhetoric was increasingly used to denounce alchemy both in academic and in literary circles. The trail of destruction Syberg left behind was in a sense a demonstration of the excesses of alchemy, albeit not the kind of academic demonstration that Principe had in mind when he suggested that transmutational alchemy was vilified by declamation rather than demonstration in the first half of the eighteenth century.