Dóra Bobory

The Alchemy of Everyday Life

The Curious Case of Boldizsár Batthyány (1542–1590)

Alchemische Labore. Alchemical Laboratories, Sarah Lang (Hg.), unter Mitarbeit von Michael Fröstl & Patrick Fiska, Graz 2023, S. 209–228, DOI: https://doi.org/10.25364/978390337404112

Dóra Bobory, dora.bobory@gmail.com

Zusammenfassung

Die Korrespondenz des ungarischen Adeligen Boldizsár Batthyány (1542–1590) erlaubt es uns, die Routen alchemischer Wissensvermittlung nachzuvollziehen sowie die Ressourcen – seien es seine Korrespondenten, Werkstätten, Handwerker:innen wie Händler:innen jeglicher Art – zu identifizieren, die er nutzen konnte, um zu akquirieren, was er im Labor benötigte: Wissen, Rohmaterial und Gerätschaften. Diese Nahaufnahme der Aktivitäten eines historischen Individuums erlaubt uns einen seltenen Einblick in das alltägliche Leben alchemistischer und chymischer Praktiker:innen seiner Zeit. Zudem vermittelt sie Einblicke in sowohl die praktischen Gründe als auch die Motivationen hinter alchemistischem Experimentieren.

Schlagwörter: Alchemie/Chymie in der Frühen Neuzeit, Experiment, Labore, Korrespondenz, Paracelsismus

Abstract

The missives of the Hungarian nobleman Boldizsár Batthyány (1542–1590) allow us to track the route(s) of alchemical knowledge, identify the resources – correspondents, workshops, artisans, craftsmen, merchants of all sorts – he could use to acquire the knowledge, raw material, and implements used in the laboratory. This close-up of this individual's activity offers a rare glimpse of the everyday life of practitioners in the period while also contributing to our general knowledge of the whys and ways of alchemical experimentation.

Keywords: early modern alchemy, experimentation, laboratories, correspondence, Paracelsianism

Introduction

Alchemists in the early modern period were elusive and often marginalised figures. While many considered themselves to be the guardians of ancient secrets beneficial to humanity, they might still be outsiders to institutional structures and disciplines, accused of undermining traditional medicine and being frauds. Others could be found among the ranks of goldsmiths, metallurgists, mining experts, apothecaries, physicians, and artisans of various types, while burghers or noblemen with no formal training in any art, craft or discipline could also try their hand at alchemical recipes or at interpreting alchemical texts, motivated by a desire for greater wealth, health and power. The Hungarian nobleman Boldizsár Batthyány (1542–1590) was one of many contemporaries who could not resist the pull of alchemy.[1] His correspondence[2] speaks of a lifelong engagement with alchemy from the moment he became financially independent until the very end of his life.[3] With examples drawn from my recent work on the edition of more than three hundred letters to and from Boldizsár Batthyány, I attempt to outline where his and his correspondents' interest in alchemy originated, illustrate what made alchemy such a popular pastime or enterprise in their time, and trace the transmission of alchemical knowledge and the material culture accompanying it.

Paths to Alchemy: Mining

While we have a relatively clear idea of the way in which alchemical knowledge was shared through Batthyány's network from the 1570s on, too little is known of his formative years for us to be able to determine the exact time and place he first encountered alchemy. Mining may have been one of the gateways to alchemy for Batthyány. When his great-uncle Ferenc died in 1566, it was up to Boldizsár, the sole male heir, to take over the management of the mines at Szalónak (Schlaining, Austria). That he took up this responsibility is clear from letters of his great-aunt Katalin, the widow of Ferenc I Batthyány, who in 1567 calls Boldizsár "the lord of iron mines,"[4] and remarks that, "it is obvious that Your Magnificence has a rich mine from the number of cartloads of iron we order from you."[5] Due to a lack of dedicated schools

1. For Batthyány's biography in English, see Bobory 2009.
2. Bobory 2019.
3. Didier Kahn, Bruce T. Moran, Tara Nummedal and Pamela H. Smith, to mention just a few, wrote extensively on "prince-practitioners" and the alchemists in their service. For a recent overview of alchemy at the court of Emperor Rudolf II, see Purš and Karpenko 2016.
4. Letter of Katalin Svetkovics to Boldizsár Batthyány on 23 January 1567 from Németújvár. Published in Terbe 2010, no. 46 (unless otherwise indicated, reference is given to the number of the letter in the edition).
5. Letter of Katalin Svetkovics to Boldizsár Batthyány on 6 November 1569 from Németújvár (in Hungarian), in Terbe 2010, no. 163.

until the eighteenth century, if they wanted to be successful, mine owners generally had to pick up the knowledge of probing and building mining works to excavate and process the ores for metals from their expert employees. The best experts came from German-speaking lands, and since they were greatly sought after and hard to find, they were held in high regard. Many early handbooks also appeared in German,[6] making it the *lingua franca* of mining and metallurgy, and this is reflected in the correspondence of Boldizsár Batthyány too. Quite in contrast to the technical terms of alchemy, which appear in Latin even in letters written in German.

Batthyány employed Martin Rösler, originally from Danzig, who was introduced to him as a token of goodwill by his mine-neighbour, Hermann Ygl,[7] to manage his Szalónak mines. Rösler, who became owner of a third of Batthyány's mining company, had a great network of professional contacts and hired a carpenter whom he knew from his time in Bohemia to build a great forge for Batthyány in 1573.[8] The Hungarian lord sincerely mourned the loss of Rösler, who died the same year[9], presumably due to dropsy.[10] Another employee at Szalónak, Jacob Richter, also came to Batthyány through Ygl, who was keen on currying favour with the Hungarian lord, trying to convince him to make him an associate in his mining company in the late Rösler's place.[11] Richter must have been much younger than Rösler was, and perhaps a little hot-headed. When he got into a fight with, and accidentally killed, a fellow miner, Hans Kiettl, it was probably his expertise that saved him from long imprisonment. Richter pleaded with Batthyány to set him free, and even Rösler mentioned the incident in a letter, condemning what Richter did, killing such a good man and a knowledgeable miner on top of that.[12] Rösler added, however, that he left the matter to Batthyány's discretion, and the nobleman decided to vouch for his impulsive employee. We find Jacob Richter back at work soon after the grisly affair; in fact, he continued to divide his time between Batthyány and Ygl until he fell out with the latter, presumably over a mining company matter, so much so that an imperial committee was sent to settle the controversy between them.[13]

Letters of Wolf Schaller, a *familiaris* of Batthyány's, from 1572 reveal that production in the iron mines of Szalónak often dwindled: either they did not find enough ore in the shafts, or the water level was too low for them to operate the forge properly and

6. See Darmstaedter 1926
7. Bobory 2019, no. 23
8. Bobory 2019, no. 51. See also the letter of Martin Rösler to Jacob Richter in Schlaining after 1 February 1573 in which he mentions the carpenter from Brünn once again. A transcription of this letter is published in Prickler 2007, 171.
9. Felician von Herberstein commiserates with Batthyány over the loss of Rösler. Bobory 2019, no. 54.
10. Bobory 2019, no. 51
11. Bobory 2019, no. 53
12. Bobory 2019, no. 26
13. Bobory 2019, no. 108

smelt iron or copper.[14] Whatever the extent of his familiarity with mining technology, Boldizsár Batthyány was certainly considered to be an expert by his contemporaries. Miklós Pálffy, the vice-captain of Győr, received unsolicited advice from Batthyány regarding some copper balls that he had found in the castle of Vöröskő, which he acquired through his marriage to Maria Fugger, a descendant of the Kirchberg branch of the family, once highly influential leaseholders of most Upper Hungarian mines. Batthyány believed that Pálffy should have the balls assayed, as he was quite convinced that they were not cannon balls, copper being too soft a metal to efficiently destroy stone walls with, but rather a way to store metals extracted from ores. He thought that apart from copper they could have had silver in them too.[15] Another contemporary, Ferenc Nádadsy, the so-called Black Bey, a fearsome military commander of the Long Turkish War, sent a sample of metal to Batthyány to have it assayed and give his opinion of the quality of copper that he had found on his land.[16] Mine owners and leaseholders were faced with the exhaustion of veins closer to the surface, consequently, new shafts had to be built deeper and deeper underground, which required new technologies of drainage and means of securing miners' safety in the tunnels. Obsolete assaying techniques needed improvement to save on equipment and extract noble metals with a greater efficiency. Some solutions to problems of productivity and thrift were offered by wandering experts. The latter visited the mining regions of Central Europe in order to survey the technology employed in them. They would then propose their own methods and usually apply for a patent and a dividend of the profits that the mine owners would make through them.[17]

One of the crucial points in assaying was the use of solvents to separate gold from silver. In order to make *aqua fortis*[18] and *aqua regia*[19], a good-quality vitriol[20] was an important ingredient, and some of the primarily Italian experts touring the mining towns of Upper Hungary offered to make a better, stronger vitriol that could be reused.[21] Some would promote the use of metal alembics instead of glass vessels, arguing for their durability in contrast to the more fragile glassware.[22] Batthyány's

14. Letters of Wolf Schaller to Boldizsár Batthyány from 1572 in Hungarian, National Archives of Hungary, P 1314, no. 40 652, 40 653, 40 656–40 658.

15. Bobory 2019, no. 279

16. Letter of Ferenc Nádasdy to Boldizsár Batthyány from Csepreg on 23 June 1574, National Archives of Hungary, P 1314, no. 31 945.

17. The source material is in the Österreichisches Staatsarchiv, Finanz- und Hofkammerarchiv, Altes Münz- und Bergwesen Ungarn, W 3685, 3686, 3692, 3694.

18. Nitric acid, capable of dissolving silver but not gold.

19. A mixture of nitric and hydrochloric acids, the only solvent known at the time that could dissolve gold.

20. A term used to collectively indicate various sulphates: copper sulphate was blue, iron sulphate was green, and zinc sulphate was a white liquid On vitriol, see Karpenko and Norris 2002.

21. Österreichisches Staatsarchiv, Finanz- und Hofkammerarchiv, Altes Münz- und Bergwesen Ungarn, W 3685, fol. 268–271

22. Österreichisches Staatsarchiv, Finanz- und Hofkammerarchiv, Altes Münz- und Bergwesen Ungarn,

friend Herberstein once wrote to him about "a wonderful man" whom he had met in Goldberg in Carinthia who claimed to have smelted 30 hundredweight of iron in a single day near the Italian border. The expert also claimed to be able to produce a more flexible, better-quality iron than others. Herberstein was keen to share this treasure with Batthyány and introduce the man to the Hungarian lord. He also gave an account of two Italians who visited the *Bergmeister* of Goldegg, who after having observed the operation of the mines concluded that they could triple the yield of noble metals from the same ores and amalgams compared to experts using traditional methods.[23] It appears that Herberstein – just as the authorities in the Hungarian mining towns did on several occasions – found the new technologies impressive enough and was hoping that the Archduke of Habsburg would share his enthusiasm, allowing the new methods to be applied widely in his mines. On another occasion, he tried to dissuade Batthyány from using the large Italian furnaces, since his ore was soft and those blast furnaces worked best for hard ores.[24] Productivity was crucial, and those who could or would not modernise technology faced difficult decisions: in 1589, Hans Lasanz, master of the Graz mint, wrote bitterly about the local government's decision to shut down the Laffenthal mine in Carinthia. According to him, this still yielded a nice profit, and its closure would have been a great loss to the hundreds of workers employed there and to the entire region.[25]

New methods did not only concern mining, and many would try to trade in secrets of the alchemical art. Lasanz wrote to Batthyány about an Italian who claimed to know how to make the Philosophers' Stone and wished to go and see the Hungarian lord, but Lasanz remained sceptical.[26] Corvinus reported on a vicar who declared that he could transmute silver into gold with cementation, and asserted that the vicar's transmuted gold was deemed to be of good quality by goldsmiths. To follow up on this fabulous claim, Corvinus decided to take a closer look and visited the priest in his house in Znojmo, but the personal visit disappointed him, and he concluded that the vicar was no more than a sophist, one who had read a bit of literature on alchemy and deceived himself and others into thinking he could perform a genuine transmutation.[27] The correspondence of Hans Lasanz and Boldizsár Batthyány was regular and quite intense from 1576 until the latter's death, and reveals what a crucial role the master of the Graz mint – who presumably came to Batthyány with the recommendation of Herberstein, one of the supervisors of the mint – had in the Hungarian nobleman's network. It may seem that initially Batthyány had no workshop set up at the Szalónak

W 3686, fol. 883–890

23. Bobory 2019, no. 103
24. Bobory 2019, no. 122
25. Bobory 2019, no. 282
26. Bobory 2019, no. 293
27. Bobory 2019, no. 153 and 156

mines for assay, or there might have been another reason why he chose to send his raw metals to Graz to Lasanz. In his letters, the master of the mint describes the process of refining and assaying, and he sends detailed invoices, which give us a good idea of the amount and type of noble metals that he produced for Batthyány. On one occasion, his assay of the ore Batthyány had sent him from the "old mine" had a little copper in it;[28] on another, repeated assays could not show more than a trace of any metal in the ore that he had received from Hungary.[29] From his notes and invoices, which were often accompanied by those of the *Wardein*, we can see that apart from iron, Batthyány had a fair amount of copper, silver and gold in his mines, too.

Gold was just as much of a desideratum for anyone involved in mining as it was for the alchemists, and contemporary actors may not have seen a huge divide between the two fields. From a practical point of view, alchemy was false only when it did not yield the expected results. From the books of Tara Nummedal we know that alchemists had to enter very practical and strict contracts with the German aristocrats who employed them for transmutation projects just as any other contractor would have: contracts in which they bore almost all the responsibility of the potential failure to fulfil their commitments. The spectacular failure of some of them ended in widely publicised executions, which seem to have been prompted by the aristocrats' need to wash away the shame and overwrite the embarrassment that their apparent gullibility may have caused them.[30]

As a mine owner, Boldizsár Batthyány had been approached by experts, self-styled or otherwise, trading in secret new methods to improve yield. Some of these methods were the same ones that alchemists would use when working with metals, since they also needed good-quality vitriol to prepare strong solvents to ultimately produce the finest gold possible. Pragmatism and practical aims were not exclusive to mining experts or metallurgists, and much of the alchemical work required just as much hands-on laboratory work as refining metals would.

What, then, distinguished alchemists from mining experts and metallurgists? As was pointed out earlier, the difference between them may have only been perceived through their success: if their method worked, it produced tangible results and there would be no need to call them names; if their method did not work, they easily slipped into a grey zone where fraudulent claims and failure were located. Felician von Herberstein's advice to his friend Batthyány, namely that he should not trust alchemists, who have a tendency to cross certain boundaries, is telling with regard to contemporary attitudes.[31] Interestingly, when Batthyány's correspondents

28. Bobory 2019, no. 207
29. Bobory 2019, no. 266
30. See Nummedal 2007 and Nummedal 2019
31. Bobory 2019, no. 42

wish to remain neutral or positive when referring to practitioners of chymistry, they use terms such as *chimicus, chymicus, chymista*, or *Chimist*, while *Alchimist* is only used once in the context of Herberstein's remark above. It was often believed that the Arabic prefix *al-* changed more than just the form of the word, bestowing on it something of the mystical too.[32] While *chymia* and *alchimia*, or rather *chymista* and *Alchimist*, were used distinctively to describe different categories of practitioners, they do not provide clear ideas of where the difference between them really lay.

It is not hard to imagine that Boldizsár Batthyány heard about the fantastic claims of the alchemical art through his involvement with mining technology and consultation with friends such as Herberstein who were similarly engaged. We happen to have a good hint as to where Herberstein learned about alchemy from the eulogy written by his court priest, David Reuss.[33] Reuss writes that the young Felician studied philosophy and medicine at the University of Padua, while also immersing himself in the secrets of nature (*in occultis naturalibus*). It is indeed noteworthy that Padua was one of the first universities with a distillatory house established next to its botanical garden.[34] Herberstein must have been a great influence on Batthyány and a good source of alchemical knowledge.

Batthyány's correspondence with another mining entrepreneur and fellow nobleman also encourages us to rethink the old dichotomy of unscientific alchemy on the one hand and scientific mining and metallurgy on the other. While deeply engaged with down-to-earth mining matters, Kristóf Kubinyi was also not dismissive about the so-called vegetable gold (*aurum vegetabile*), the stuff of legends, gold that grew on or from plants, most notably on the grapes of the Tokaj wine region of Hungary.[35] He claims to have acquired such gold himself and to have had a ring made of it for his wife. Upon Batthyány's request, Kubinyi launches a search for more of that special gold that he believes grows on certain plants. He complains that the peasants who are most likely to come across that gold-bearing plant do not know how to harvest it, and accidentally destroy it. Kubinyi also writes about potable gold (*aurum potabile*), a precious remedy that contains the best, medicinal qualities of gold.[36]

32. Newman and Principe 1998
33. Reuss 1595. Excerpts from the text were published in Bobory 2005.
34. See, for instance, Pereira 1997, 281.
35. The story was retold by Paracelsus as well, but it sprang from a philological error. On this, see Monok 2017.
36. Bobory 2019, no. 18

Paths to Alchemy: Health Issues

His personal involvement in mining and metallurgy may have given Boldizsár Batthyány an important impetus to extend his enquiries into the field of alchemy, but there is another area of his private life that certainly justified such explorations. Batthyány may have been a powerful man in many respects, one able to lead his armies when it was necessary to protect the borders of his lands and push back Ottoman advances, but he could be just as powerless as the next man when afflicted by some of the common diseases of his time. From some of them, he simply tried to hide, avoiding infected areas: once he complained to the botanist Carolus Clusius that he had been keeping away from his main residences and had retired to Dobra for over six months to keep safe, and he was at the end of his tether, wishing to finally go h ome.[37] Batthyány and his contemporaries watched with apprehension as the latest epidemic broke out, and they tried different tricks to avoid it or keep it at bay. Herberstein suggested that Batthyány acquire a *bezoar* from the bishop, as it was an excellent antidote to the plague,[38] while Pistalotius successfully applied *alexipharmacon* to his servant struck down by the same disease, adding that he also believed *euphorbium* to be a good cure against it.[39]

Various fevers, gout, ulcers, and wounds that would not heal caused Batthyány a lot of pain and kept him from duties and pastimes alike, sometimes for weeks or months on end. If a young and strong man was not immune to disease, even less so were the children in his family. In the early modern period, medical experience was given a much broader extension, and different types of experience were valued: while a degree and a licence were required for a physician to practise, people would also trust the matrons in the family. These women were the keepers of recipes from previous generations and from one another.[40] They could make herbal waters and some basic medicines too. The Batthyány archives are very rich in documents that highlight the practice of setting up diagnosis remotely, offering advice and even sending medicine based on symptoms described in letters. While most of the time this practice did not do any harm and could even help the patient, there were occasions – as in the case of Batthyány's infant children who died in the course of a few days in 1574[41] – when it may have wasted time. From what we can read in the letters, it is likely that the children were killed by the epidemic of dysentery that swept through Western Hungary and Vienna in the spring of 1574.

37. Bobory 2019, no. 208
38. Bobory 2019, no. 28
39. Bobory 2019, no. 165
40. Sherman calls the collection of documents by women readers "matriarchive." See, Sherman 2008, 53.
41. Bobory 2019, no. 87 and 89

Batthyány did not spare any expense to help a relative, the adolescent Count Kristóf Zrínyi (in Croatian Zrinski), who seems to have suffered from a hernia and epilepsy. Kristóf was the youngest son of Miklós Zrínyi, the hero of Sziget, who was the ward of his older brother György. Many of the letters suggest that Boldizsár Batthyány felt responsible for the wellbeing of this teenager, and not only looked for a tutor for him,[42] but also did his best to find a cure for his condition. He sent Nicolaus Pistalotius on a trip to Italy to try and find a *ceratano*, a peripatetic healer who had cured another acquaintance of epilepsy earlier,[43] and wished to bring an old lady to Hungary who could heal the sick boy by laying on her hands.[44] These were heroic and costly efforts to help someone: seemlingly with little success, since soon after a period intense with the search for a cure, the young Zrínyi is not mentioned again.

Some basic tenets of Paracelsus and his followers – that a careful distillation may remove the toxicity of every substance whether it be plants, metals or minerals and the distillate applied safely within the human body to restore its balance – resurface in the correspondence of Boldizsár Batthyány. His interest in the works of Paracelsus is attested by the titles in the reconstructed catalogue of his library, part of which is now in the Franciscan monastery in Güssing. He had a copy of the most popular pieces of the Paracelsian corpus, such as the *Archidoxa* and *Große Wundartzney*, and works by followers and critics of Paracelsus.[45] In 1571, Hermann Ygl, the leaseholder of the neighbouring Bernstein mines, wishes Batthyány "a constant fruitful Paracelsian art."[46] A year later, Herberstein refers to the Paracelsian *tria principia* when describing the beautiful colours accompanying the transformations of the material. In the same letter, the Styrian nobleman also warns Batthyány not to trust alchemists, who have a tendency to cross certain boundaries – of faith or decency, we may assume–, but rather to remain true to himself, and he quotes the Paracelsian motto *Alterius non sit qui suus esse potest*. For the preparation of *anima ex auro*, he suggests that Batthyány refer to the *Große Wundartzney* to achieve a medicine somewhat superior to those made by apothecaries.[47] He probably means that medicines made by distillation are better than those that the apothecaries prepare at their workshops in the traditional ways, through pulverising, mixing and cooking ingredients. In perfect harmony with Paracelsian ideas that justified the use of antimony and arsenic as internal medicine, Herberstein argues that most substances are harmless if reduced to the greatest purity.[48]

42. Bobory 2019, no. 83, 90 and 91
43. Bobory 2019, no. 90, 91 and 97
44. Bobory 2019, no. 97
45. See Bobory 2009, Appendix C
46. Bobory 2019, no. 23
47. Bobory 2019, no. 42
48. Bobory 2019, no. 47

Elias Corvinus displays a good knowledge of Paracelsus and "the Abbot of Treviso" when discussing a process involving vinegar and its residues. In the same letter, he clearly states that he has read through many writings of Paracelsus who offers various methods to produce the Philosophers' Stone. Corvinus concludes that in order to move forward with their experiments a good *aqua fortis* is indispensable.[49] He also refers to the grades of the alchemical work described by the Swiss doctor and medical reformer, who accords *putrefactio* a special place among them.[50] In 1585, the Viennese poet collates the opinions of Paracelsus, Alanus and Morienus on the subject of *mercurius,* and praises the mineral of lead, which Paracelsus preferred to any other mineral and, according to Corvinus, with good reason.[51]

One of the most distinctively Paracelsian medicines is the *tinctura corallorum* made of red sea corals prescribed by early modern physicians for diarrhoea and other issues in the abdomen. Johannes Homelius recommends taking this tincture more than once and sends some to Batthyány along with dissolved pearls.[52] Medicines made of strong solvents and corrosive substances are also promoted by Paracelsians, and Batthyány's correspondents are no exceptions. Herberstein has a high opinion of *oleum sulfuris* (a weak sulphuric acid) and *oleum vitrioli* (concentrated sulphuric acid), but he strongly discourages Batthyány from taking both at the same time, as taken together they can damage the body. He emphasises that they must be of the purest type also, and achieving such purity requires long expert work.[53]

Even if Paracelsian ideas about disease and healing penetrated medicine on a non-academic level as well, their novelty lived side by side with the established medical tradition typified by Hippocrates and Galen. Pistalotius, Homelius and Herberstein often refer to humours as a possible cause of disease, and explain symptoms in the framework of humoral pathology. Herberstein suggests that Batthyány's illness is caused by an excess of bile, and he cannot be fully cured until the bile is expelled from his body. To do this, he recommends rose preparations, one with alcohol, and another type with whey.[54] Pistalotius explains Batthyány's son Ferenc's diarrhoea by a weakness of his stomach that did not allow him to digest food properly, turning it into the wrong type of humour.[55] Homelius finds a connection between humours and the weather: he believes that Batthyány fell ill due to the composition of the air, which made his humours warm and moist.[56] It thus seems that not only the quantity

49. Bobory 2019, no. 118
50. Bobory 2019, no. 164
51. Bobory 2019, no. 211
52. Bobory 2019, no. 228
53. Bobory 2019, no. 47
54. Bobory 2019, no. 47
55. Bobory 2019, no. 61
56. Bobory 2019, no. 232

of a humour but also its quality was thought to create symptoms. Both physicians approve of the use of venesection and purgatives to let the excess humours leave their patients' bodies, and they both consider diet to be central to the healing process.

Paracelsian ideas were also embraced by another correspondent, Johannes Homelius Secundus, whose father, likewise called Johannes, appears to have been a host of the Swiss doctor while he was exploring the eastern territories of the Habsburg Monarchy in the mid-1520s.[57] He may have grown up with his father's stories and appreciation of Paracelsus and embraced the new ideas as a consequence. Batthyány and some of his correspondents were readers of Paracelsian works, appropriated some of his ideas and tried integrating them into the traditional medicine with which they grew up. The realities of everyday life, a host of potentially deadly diseases crippling people and the lack of efficient anaesthesia, spurred them to look for new solutions, new drugs, and that is what Paracelsus and his followers offered, taking advantage of the rising popularity of distillation methods.

"*Nova nulla habeo*" – Fountainheads of Alchemical Knowledge

"I have no news" – thus do some of Batthyány's correspondents start their letters, only to then launch into a catalogue of names, places and events of which they have intelligence. Their thirst for information, especially on matters political, seems to have been insatiable, and often compelled them to beg for news, revealing the value of information and the dynamics of transfer in early modern networks. It was through letters that Batthyány acquired at least some of the alchemical knowledge that he accumulated over the years, and he heavily relied on his acquaintances to provide him with references, books, and the material necessities pertaining to alchemical experimentation. From some of his letters it is quite clear that Elias Corvinus thoroughly researched various questions that the two of them had encountered while experimenting, making occasional use of Batthyány's collection.[58] Batthyány started collecting books systematically from at least 1571, primarily using the expert services of Jean Aubry, a book seller originating from France but setting up shop in Frankfurt after the St. Bartholomew's Day Massacre, and later in Vienna, Prague and Basle.[59] The very first book bill by Aubry - with whom Batthyány corresponded in French often sharing political news -, is thematic: out of twelve titles, ten are on chymical subjects, including works by Gerard Dorn, Raimundus Lullus, Morienus Romanus

57. On Paracelsus' visit in the territory of today's Slovenia, see Poznik 1985 and Glesinger 1958. Huser mentions Homelius as someone from whom he received manuscripts. See Kühlmann 2004, 413.
58. Bobory 2019, no. 105
59. On Jean Aubry, see Evans 1975, esp. 35–37. On the business venture of Aubry and Claude de Marne in Basle, see Bietenholz 1971, 78–79.

and Petrus Severinus, but also Thomas Erastus.[60] Also interesting is the suggestion from Aubry's attached letter that Batthyány asked for specific books to buy on the same topic, such as the *Coelum philosophorum*, presumably the one by Philipp Ulstad, and *De alchemia libri duo*, possibly the work of Giovanni Braccesco. Aubry also repeatedly asks Batthyány for his discretion, as, by imperial decree, it was explicitly forbidden to deliver certain books to Hungary, and he could get in trouble if found out.[61]

Readings – "words" – were crucial to understanding the tenets of alchemy and finding recipes and methods of preparation of substances, but "works", the trial-and-error side of experimenting could not be bypassed and would eventually teach the alchemist more than readings.[62] In a letter from 1585, Corvinus expresses his frustration at not grasping what the *mercurius* of lead is, and adds that they had experimented with it a thousand times and still "did not succeed in dissolving the body."[63] Indeed, one of the main preoccupations of Batthyány and his fellow alchemical practitioners was figuring out what *mercurius* was. The term was used widely to refer to a variety of substances and also a principle, and early modern alchemists had just as many difficulties identifying these with concrete substances or concepts as we do now. There were the more obvious cases of *mercurius currens* or *vivus*, the Latin name of quicksilver, and *mercurius* as one of the two or three principles forming all metals – even though we should also remember the "mercury alone" theory of Geber – but others such as *mercurius philosophicus* or *philosophorum* gave alchemists then – and historians today – more of a headache.

Others may have been clear to practitioners at the time but have lost their original meaning over the past centuries. One of the most reliable ways of trying to identify substances today is by replicating them. Historians with chemical skills and chemists trained in historical research do just that, with very revealing and instructive results – there are even whole projects dedicated to such pursuits.[64] The greatest lesson that these replicated experiments teach us is that alchemical recipes were often written by people with first-hand laboratory experience and were not – as suggested earlier – symbolic renderings of fuzzy ideas completely detached from practice.

60. Bobory 2019, no. 30
61. Bobory 2019, no. 92
62. On the dichotomy of "words" and "works" see Nummedal 2011.
63. Bobory 2019, no. 211
64. See, for instance, Principe 2013, plates 1 and 3–6, the *Making and Knowing* Project (makingandknowing.org), and the *Distillatio* blog (distillatio.wordpress.com).

Sourcing Implements and Materials

Batthyány's lands were well positioned for acquiring goods of various sorts; his vicinity to Vienna, Pozsony (Pressburg/Bratislava), Graz and even Venice brought most of his necessities within reach. Through his vast network of acquaintances and considerable finances, he could buy items of luxury such as gilded wall tapestry, oysters, jewels, pearls, and fine Italian fabrics. Batthyány could and would also try to bring people with expertise to his land, such as he did with a woman healer whom he tried to cajole into coming to Hungary from Italy.[65] When it came to his alchemical needs, he would turn to the same resources, and primarily to Corvinus, who lived and worked in Vienna and was well connected in his own right. The latter Catholic poet, who held various offices in Austria,[66] was the one who would walk into the merchant Rasperger's shop and arrange for some gold to be moulded or put in an order of glass vessels, retorts and mortars.[67] Rasperger, whose first name is not known from the letters, may well have been one of the merchants specialising in alchemical ware and perhaps pursuing experiments himself, judging by Corvinus' remark that Rasperger could not provide him with a laboratory assistant because "he always works alone."[68] Corvinus reports that the Viennese man from whom he used to acquire glass vessels does not make them anymore, so he will try to buy some through a certain Alexander, perhaps a merchant himself.[69] Corvinus provides a vivid image of Viennese urban life when he describes his difficulties in acquiring some earthenware: he complains that the potter to whom he used to turn for such implements has died and the young potters in town are unreliable, wasting a lot of his time with their lies.[70] This suggests that even in a big city such as Vienna, seat of the Habsburg emperors, there were only a few artisans who recognised a growing market related to alchemical experimentation and were willing to make vessels customised for alchemists. While experimentation intensified, the industry to cater to its needs was slow to pick up the pace. Some appliances, most typically the furnaces, had to be made on the spot where the laboratory was set up. It was once again Herberstein to whom they could turn for a mason who knew how to build a round furnace.[71] Buildings and works such as stamp-mills and forges were usually built by specialised experts, sometimes brought in for the job from abroad. This was the case with the carpenter who came from Bohemia to help build the iron forge at Szalónak. Once

65. Bobory 2019, no. 97
66. Corvinus was appointed *Regimentsrat* in 1581, and became the superintendent of hospitals the following year, and he was the head of the Chancellery from 1592. See Starzer 1897, 428.
67. Bobory 2019, no. 136
68. Bobory 2019, no. 221
69. Bobory 2019, no. 136
70. Bobory 2019, no. 209
71. Bobory 2019, no. 116

again, these experts constituted a great asset, so it is not surprising that Hermann Ygl once pleaded with Batthyány to set his potter free, who had been imprisoned for a misdeed, because the latter was sorely needed at the mines.[72]

Once the alchemist had alembics, furnaces, tongs, bellows and other necessities, he still had to source the materials he wished to transform by fire, solvents or otherwise. Central Europe is blessed with many rich mining areas, mountains full of silver, gold, copper, lead, quicksilver and iron, so acquiring these would not be too difficult. Other minerals, such as the mystical red gold(en) ore ("rot gold Erz"), which Agricola translated into Latin as *argentum rude rubrum*,[73] and was probably pyrargyrite or red silver, were much harder to purchase. Batthyány used his contacts – this time his former court apothecary and alchemist Hans Neander – to buy him some from Germany, where Hans was visiting his father in Ilfeld at the foot of the Harz mountains. Neander writes that in Andersberg they could produce 150–190 mark silver from half a zentner of red gold ore, sometimes even more.[74] On another occasion, it was Johannes Homelius who begged Batthyány to send him such a mineral from Hungary.[75] Hungary was famous not only for its gold but also for its high-quality vitriol, and Batthyány is known to have produced some himself. Following his instructions, Batthyány'sassistants Hieronymus Franchus[76] and Leopold Hofstädter[77] distilled vitriol for him. Herberstein suggested that they perform an experiment with vitriol to make copper from iron,[78] and offered to reveal a good method for purifying it.[79] Homelius discloses his own method of making vitriol, adding that it should be kept a secret by Batthyány, since vitriol is a miraculous substance with many wonderful properties.[80]

Helping Hands

Boldizsár Batthyány had been regularly searching for assistants to work in his own laboratory from as early as 1572, confirming that his orders for books on alchemy were not isolated from a practical interest in the subject. Corvinus complains that suitable assistants are very hard to find.[81] Assistants helping in alchemical laboratories and artisanal workshops were often young boys (referred to as *pueri* in the

72. Bobory 2019, no. 53
73. Agricola 1950, 108
74. Bobory 2019, no. 267
75. Bobory 2019, no. 249
76. Bobory 2019, no. 75
77. Bobory 2019, no. 120 and 121
78. Bobory 2019, no. 42
79. Bobory 2019, no. 47
80. Bobory 2019, no. 228
81. Bobory 2019, no. 37

correspondence of Batthyány), apprentices set to learn a trade. Corvinus notes that their assistant learns new things every day but is not very clever,[82] and his opinion seems to be shared by Batthyány, who finds the boy ignorant.[83] The poet suggests that they look for another laboratory assistant who has long experience in the matter that they are researching, so that he may teach the youth as his *famulus*. In 1576, Corvinus expresses his hope to be able to send a suitable assistant from Styria to Batthyány's residence and offers his own goldsmith to help the Hungarian lord out in the meantime.

Laboratory work in any case required constant supervision to avoid such situations as the one in 1582 when Corvinus complains that their assistant did nothing, giving himself over entirely to drinking and sleeping.[84] He mentions a Stefano by name and we also learn of a Hans who worked for Batthyány. Corvinus and Batthyány must have agreed that Hans could have benefited from the company of someone better versed in the process of *resuscitatio*, and they found that someone in his father. Corvinus tried to arrange for Hans' father to come to Batthyány's castle to pass his knowledge on to his son, but the father was imprisoned in Sopron (Ödenburg) after firing a rusty catapult that killed three people. Corvinus suggested that Batthyány intervene on behalf of the man to be released so that he could teach his son his lore. Unfortunately, we do not know whether Batthyány used his influence to free the man, just as he presumably did with his mine manager Jacob Richter, but the mere idea is telling with regard to the exigency of alchemical experts. Hans Lasanz also busied himself with finding suitable assistants for Batthyány, and we may even learn that for two of them, Hans Khrainer and Wolf Schroll, Batthyány had to pay three florins and six kreuzer to cover their food and "Besseung irer Khlaider."[85]

The need for assistants did not entail sharing all knowledge with them. It is rather characteristic of Johannes Homelius, for instance, to worry about secrets falling into the hands of the unworthy, a category that includes his own assistant. In 1586, Homelius warns Batthyány not to disclose the names of the types of weights to his assistant, "lest pearls will end up under the pig's feet."[86] Corvinus expresses a similar concern when he writes that he cannot send another laboratory assistant as "those men are all cut from the same cloth" and the secret experiments should not be shared with them.[87] There appears to have been a clear hierarchy in the laboratory. Assistants and other hands were clearly not considered to be on the same level as the patron who commissioned the work and his men charged with its supervision. Only

82. Bobory 2019, no. 102
83. Bobory 2019, no. 105
84. Bobory 2019, no. 190
85. Bobory 2019, no. 294
86. Bobory 2019, no. 214
87. Bobory 2019, no. 233

as much of the secrets were disclosed to them as was strictly necessary for them to perform the next step, not enough to enable them to oversee the entire process.

Conclusions

Snippets from the correspondence of the Hungarian nobleman Boldizsár Batthyány allow us to witness details of the everyday life of alchemical practitioners in the second half of the sixteenth century in East-Central Europe. Batthyány's correspondence reveals some of the directions he may have taken to arrive at alchemy: his experiences as a mine owner, his personal health issues, the medical problems of members of his family, and the influence of acquaintances with similar interests. Letters also hint at the role that readings played as auxiliaries to practical laboratory work, and reveal where and how Batthyány and his correspondents bought their books and how they processed, interpreted and discussed what they read.

Batthyány was not completely free: he was bound by his family's standing, and had to take on responsibilities that he may have preferred to avoid. He was not alone in being in the grip of expectations when he would rather have chosen a life of research to study nature in its many wonderful manifestations. Herberstein often complains of the long, boring and melancholy *Landtage* where nothing really ever happens[88] and he toys with the idea of hiding at home to work in his laboratory instead.[89] Corvinus also dreams about getting rid of his offices and dedicating himself entirely to experimentation.[90] Mandatory appearances at the Hungarian Diet and various high-profile events such as coronations, weddings and funerals, the day-to-day management of the estates and the mines, and being on the alert for possible military forays and expeditions, not to mention corresponding with hundreds of people about sundry matters such as lawsuits and requests of all kinds, left very little time for anything else. It only shows the devotion of Batthyány who still carved out the space needed to pursue his passions, even at the price of neglecting some of his duties. As if human factors were not enough, the everyday lives of people in the early modern period were also affected – not unlike the situation today – by climate events such as floods, drought, hail, and a myriad of diseases, some potentially deadly, such as dysentery and plague, or the incapacitating gout. To some of these problems alchemy seemed to offer a viable solution, and health was one area that Batthyány believed could be improved with the help of alchemical medicine. When the Philosophers' Stone is mentioned in their correspondence, it seems to occur in the context of healing and not that of *chrysopoeia*, and Corvinus firmly believes that

88. Bobory 2019, no. 40
89. Bobory 2019, no. 63
90. Bobory 2019, no. 190 and 211

"if we want to chase away gout, we ought to work: the devil cannot be chased away any other way but with the stone."[91] That is the central focus of Batthyány's own readings and research alike, one that kept him actively searching until the end of his life.

Dóra Bobory holds a PhD in History from the Central European University. Her research interests include the history of alchemy, astrology, autobiography writing and collecting in the early modern period. She recently completed a degree in Museum and Heritage Practice at Victoria University of Wellington. Her biography of Boldizsár Batthyány (*The Sword and the Crucible. Count Boldizsár Batthyány and Natural Philosophy in Sixteenth-Century Hungary*) was published in 2009, and her edition of 305 letters from the count's correspondence with an extensive apparatus (*The Correspondence of Boldizsár Batthyány. The Everyday Life of an Early Modern Alchemist*) appeared in 2019.

91. Bobory 2019, no. 199

Bibliography

[1] Agricola, Georgius. 1950. *De re metallica. Translated from the First Latin Edition of 1556 by Herbert Clark Hoover and Lou Henry Hoover.* NY: Dover Publications.

[2] Bietenholz, Peter G. 1971. *Basle and France in the Sixteenth Century. The Basle Humanists and Printers in Their Contacts with Francophone Culture.* Droz.

[3] Bobory, Dóra, ed. 2019. *The Correspondence of Boldizsár Batthyány. The Everyday Life of an Early Modern Alchemist.* Kronosz–PEN Club.

[4] Bobory, Dóra. 2009. *The Sword and the Crucible. Count Boldizsár Batthyány and Natural Philosophy in Sixteenth-Century Hungary.* Cambridge: Cambridge Scholars Publishing.

[5] Bobory, Dóra. 2005. "Felician von Herberstein (1540–1590) stájer főúr rövid életrajza és magyar kapcsolatai David Reuss gyászbeszéde alapján" (The Biography of the Styrian Count Felician von Herberstein and his Connections to Hungary on the Basis of the Funeral Oration Written by David Reuss). *Lymbus*: 5–26.

[6] Darmstaedter, Ernst. 1926. "Berg-, Probier-, und Kunstbüchlein." *Münchener Beiträge zur Geschichte und Literatur der Naturwissenschaften und Medizin* 2–3: 101–206.

[7] Evans, R. J. W. 1975. "The Wechel Presses: Humanism and Calvinism in Central Europe." *Past & Present,* Supplement 2: 1–74.

[8] Glesinger, Lavoslav. 1958. "Paracelsus in Slovenija," *Zavod za zgodovino medicine medicinske fakultete v Zagrebu* 27: 440–445.

[9] Karpenko, Vladimír, and John A. Norris. 2002. "Vitriol in the History of Chemistry." *Chem. Listy* 96: 997–1005.

[10] Kühlmann, Wilhelm, and Joachim Telle, eds. 2004. *Corpus Paracelsisticum. Vol. 2, Der Frühparacelsismus*, vol. 2. Tübingen: Max Niemeyer Verlag.

[11] Monok, István. 2017. "Paracelsus és a tokaji bor. Egy néprajzzá váló filológiai tévedés" (Paracelsus and the Tokaj Wine. A Philological Error Finding its Way into Ethnography). *Annales Musei Agriensis*: 77–80.

[12] Newman, William R., and Lawrence M. Principe. 1998. "Alchemy versus Chemistry: The Etymological Origins of a Historiographic Mistake." *Early Science and Medicine* 3, no. 1: 32–65.

[13] Nummedal, Tara. 2007. *Alchemy and Authority in the Holy Roman Empire.* Chicago: The University of Chicago Press.

[14] Nummedal, Tara. 2011. "Words and Works in the History of Alchemy." *Isis* 2011, no. 2: 330–337.

[15] Nummedal, Tara. 2019. *Anna Zieglerin and the Lion's Blood. Alchemy and the End Times in Reformation Germany.* Philadelphia: University of Pennsylvania Press.

[16] Pereira, Michela. 1997. "Utilis segreti. Strumenti per lambiccare e acque distillate nei 'Discorsi'." In *Pietro Andrea Mattioli. Siena 1501 – Trento 1578. La vita e le opere con l'identificazione delle piante*, edited by Sara Ferri, 281–303. Quattroemme.

[17] Prickler, Harald. 2007. "Beziehungen zwischen dem südburgenländischen Bergbau und den 'Oberländern' in der Frühen Neuzeit." *Burgenländische Heimatblätter* 69, no. 3: 128–173.

[18] Poznik, Aleksander. 1985. "Osnovne Paracelsusove teze in njegovo bivanje v Ptuju." *Zbornik za zgodovino naravoslovja in tehnike* 8: 115–125.

[19] Principe, Lawrence M. 2013. *The Secrets of Alchemy.* Chicago: The University of Chicago Press.

[20] Purš, Ivo, and Vladimír Karpenko, eds. 2016. *Alchemy and Rudolf II. Exploring the Secrets of Nature in Central Europe in the 16th and 17th Centuries.* Artefactum.

[21] Reuss, David. 1595. *Zwo Leich und Trostpredigten ober dem seligen Abschied und Begrebnis des […] Feliciani Freyherrn zu Herberstein […] und herrn Reymundi, auch Freyherrn zu Herberstein […] herrn Feliciani Sohn.* Johannes Beyer.

[22] Sherman, William H. 2008. *Used Books. Marking Readers in Renaissance England.* Philadelphia: University of Pennsylvania Press.

[23] Starzer, Albert. 1897. *Beiträge zur Geschichte der niederösterreichischen Statthalterei. Die Landeschefs und Räthe dieser Behörde von 1501–1896.* Vienna: Friedrich Jasper.

[24] Terbe, Erika, ed. 2010. *Batthyányné Svetkovics Katalin levelei* (The Correspondence of Katalin Svetkovics-Batthyány). Magyar Nyelvtudományi Társaság.