

A LETTER OF PETER HARTZING TO GERHARD WOLTER MOLANUS

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In what follows I provide a transcription, translation and commentary of a short letter written by the German-Dutch-Japanese polymath Peter Hartzing (1637–1680) to Gerhard Wolter Molanus (1633–1722), abbot of Loccum, theologian, correspondent of Leibniz and widely-known collector of coins and medals. It is preserved at the Gottfried Wilhelm Leibniz Bibliothek - Niedersächsische Landesbibliothek, Hannover (signature: MS XLII, 1989, Vol. 1, Bl. 191a-b), in the *Nachlass* of Molanus, and is extant as two detached pieces of paper glued onto a single sheet, containing respectively the main text of the letter (191a) and the address (191b). On the sheet, in turn, it is reported (by an unknown hand) that the writer is Hartzing himself. The letter is as follows:

[191a]

Hochwürdiger undt HochEdler
Großgünstiger HochgeEhrter Herr
undt Patron.

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Nachdem Ein gewisser liebhaber alhir mir allerley
antiquitäten gezeiget, undt zu verkauffen angebohten,
namblich etwa 60 in goldt, 400 in silber, 12 hundert
in kupffer, daher er ohngefehr 3000 f fodert
undt mir beijgefallen, daß Ew. Hochw: solcher sachen
ein groß liebhaber sein, als habe nicht umbhin
gekunt, dieses mit weinigen wolmeinentlich zu er-
öffnen, undt danebenst Meine Willigste Dienste
so in diesem als in allen anderen zu præsentieren,
undt dieselbige zu versichern, daß ich bin

Ewer Hochwürden

Amsterdam den 17/27 Maij
A^o 1678.

GantzErgebener undt
Gehorsamer Diener
Petrus Hartzingh

[191b]

Dem Hochwürdigen undt in Godt
Andächtigen Herren
Herren Gerardt des keyß: freyen stift[ts]
zu lockum Hochverordnetern abt, Auch
Fürstli. Br: undt lüneburgs kirchen
directori, Consistorial- undt Schatz-Rahte
Meinem großgl. Hochgeehrten H undt Patron.

Manus Petri Hartzingij Japonensis.

It can be translated as follows:

Reverend and most noble[,] most generous highly honourable Lord and Patron,
Once a certain devotee [had] shown me here all sorts of antiquities, and offered
[them] for sale, namely circa 60 in gold, 400 in silver, 12 hundreds in copper, he
asks thence circa 3000 guilders[.] And [it has] come to my mind that Your Rev-
erence is a great devotee of such things, so I could not avoid benevolently shar-
ing this with a few [people], and besides this to offer my most willing services
in this as well as in all other [matters], and to assure yourself, that I am

Your Reverence

Fully devoted and obedient servant
Petrus Hartzingh

Amsterdam, 17/27 May 1678

To the reverend and devout in God Lord
Lord Gerhard[,] highly appointed Abbot of the Free Imperial Abbey at Loccum
as well as Princely Rector of the Churches of Brunswick and Lüneburg, Consist-
orial and Treasury Councillor
My most generous[,] highly honourable Lord and Patron

[By] the hand of Petrus Hartzing[,] Japanese.

The letter evidently deals with the possible acquisition, by Molanus, of a collection of coins from an unspecified person at Amsterdam. Unfortunately, on the basis of the contents of his *Nachlass* (viz. his *Autographensammlung*: MS XLII, 1989) and of his cabinet of coins (now part of the collections extant in the Landesmuseum Hannover and in the Forschungsbibliothek Gotha), it has not been possible to ascertain either the identity of the seller, or whether Molanus actually acquired such a collection with Hartzing as intermediary.¹ The letter is nevertheless interesting as it sheds some light on the activities of this polymath.

As recently reconstructed in a number of studies about this intriguing figure,² Peter Hartzing was born on 15 October 1637 in Hirado (Japan) of Carel Hartzing (1610/1611–1667), an officer of the Dutch United East India Company (VOC), whose family emigrated from Antwerp to Moers at the end of the sixteenth century, and a Japanese woman, whose name is not recorded,

1 On Molanus, see WEIDEMANN 1925–1929; BROSIUS 1992.

2 The first monograph on Hartzing and his family is forthcoming by Jürgen Stock and Rainer Weichert, whom I thank for the information they provided me during the preparation of this contribution. See also BECKMANN 1808–1810, vol. 1, 626–628; VAN DER CRAB 1895; VOSTERMAN VAN OYEN 1900; GRANZIN 1962; GRANZIN 1968; ENDO 1976; VAN DER PAS 1975; REUTLINGER 1982; WERKLE 1982; KREINER 1984; LOMMATZSCH 1984; SEIICHI 1985; DENNERT 1986; BAUMANN 1991; SUZUKI 2011; SUZUKI 2012; FAULENBACH 2014, 42–44; STRAZZONI 2014; STOCK-WEICHERT 2020; HEEFFER FORTHCOMING.

but belonging to an “illustrious Japanese pagan family,” according to the inscription on Hartzing’s grave in the St. Jacobi-Schloßkirche at Osterode (Harz).³ In 1642 Carel left Asia with Peter and another son (Willem Carel, who was to become a high officer of the VOC), but without their Japanese mother. During the return trip, indeed, he married Sara de Solemne (1619–1695, from Arnhem), who gave birth to a half brother of Peter and Willem Carel upon their arrival in Holland in the second half of 1643: Joris, the first of seven half-brothers of Peter and Willem Carel. Between 1643 and 1644, Carel Hartzing and his family moved back to Moers, where he became, together with his brother Michel, a textile entrepreneur before re-assuming a post at the VOC in 1650, and moving again to Asia (apparently alone), where he died in 1667.⁴

Peter, in turn, probably entered the Gymnasium Adolfinum at Moers around 1648, being registered as a *primae classis discipulus* on 25 December 1653.⁵ After his pre-university education, on 29 August 1654 he enrolled at the University of Leiden as a 20 year old (*sic*) student of philosophy, while on 1

3 It is worth quoting it in full: “Memoria viri natalib[us] ingenio; virtute et dignitate summi, meritisque in rem metallariam clarissimi, D[omi]ni Petri Hartzingii, Serenissimi. Ducib. Brunsvic. et Lunenburg. a consiliis aulicis et metallicis. Qui natus in Japonia insula et oppido Firando, die XV Octobr. anno aerae Chr. dica[ta]e MDCXXXVII patre Carolo Hartzingio, Meursa-Rhenano, in Japoniam primum ligato, post Provinc. Belgic. in India Orientali direttore generali matre ex illustri japonens. familia ethnica; missus puer in Europam educat. Meursae et in Belg. pie defunctus Claustaliae die X m. jun. anno MD-CLXXX sepultus in aede hac sacra Jacobaea, memor mortis brevisque mortuorum memoriae ipse sibi scripsit et poni voluit sequens epitaphium: *India me genuit matremque, Europa parentem; o mea quam variis sors oriundo plagis! Lustrans foris Asiae, Africam et aequora vasta, ac bis transivi Solis utramque domum. Sic patriam linquens patriam reperire parentis credebam, et nusquam patria certa fuit. Tres adeo partes mundi peregrinus obivi, nunc tandem in coelis domus. Script. Cellerfeld die 6 Novemb. 1671.*”

4 I owe this information especially to VOSTERMAN VAN OYEN 1900 and STOCK-WEICHERT 2020.

5 See FAULENBACH 2014, 123, referring to the *Kommunikanten-Registerbücher Moers* extant at the Archiv Evangelische Kirchengemeinde Moers.

November 1655 he matriculated at the University of Duisburg, according to whose *Album studiosorum* he came from Leiden, where he studied mathematics, and was going to study metaphysics and physics.⁶ Later, he re-enrolled at Leiden on 28 August 1660 as a 22 year old student of medicine, and again on 6 May 1669, as a 31 year old student of medicine *honoris causa inscriptus*, that is, without paying the matriculation fee: a practice usually reserved to those students capable of bringing some prestige to the University.⁷ There are no traces of a *pro gradu* disputation by Hartzing, even if at some point he most probably graduated in medicine, since an inventory of some papers shipped to his heirs in Holland from Clausthal, where he died in 1680, reports the existence of a doctoral certificate.⁸

During his lifetime (and beyond) Hartzing was widely renowned as an expert in mathematics, philosophy and medicine – not to mention his skill in chemistry, metallurgy and mining. In 1661 Johannes de Raey, professor at Leiden and foremost Dutch Cartesian, recommended him to Johannes Clauberg, professor at Duisburg, for a chair in mathematics and medicine, noting in his recommendation letter (3 May 1661), that Hartzing “found a very good opportunity of profiting in medical practice at Amsterdam,” and asking Clauberg to allow him to stay for some time at Amsterdam, in the event of his appointment at Duisburg.⁹ Thus far, Hartzing had probably

6 “Petrus Hartzingius, Japonensis, anno aetatis 18. Accessit ex acad. Leidensi et nomen professus 1 Novembris, operam dedit hactenus mathesi, nunc dabit metaphysicae et physicae,” Hauptstaatsarchiv Düsseldorf, ms. Universität Duisburg 209, 19.

7 DU RIEU 1875, 438, 483 and 554.

8 “Een Testimonium Doctoratus op Pergament met een groote Zegel daeran,” Niedersächsisches Landesarchiv Hannover, Cal. Br. 24 Nr. 32, unnumbered page.

9 “Consilium igitur meum est quod probat D. Hartzingius, ut a vestrae Academiae Curatoribus Matheseos et Med[icinae] prof[essor] designetur et vocetur: sed ea lege ut Amstelodami adhuc aliquo tempore liceat commorari,” Johannes de Raei to Johannes Clauberg, 3 May 1661, extant at the University of Chicago Library, Frank Webster Jay

already graduated in medicine, even though no mention of him is made in the registers of the Amsterdam physicians and pharmacists, nor in the lists of the Amsterdam guild of surgeons.¹⁰ In the same year, an acknowledgment of a solution, by Hartzing, of an algebraic problem appeared in the *Tractatus de concinnandis demonstrationibus geometricis ex calculo algebraico* of the Cartesian mathematician Frans van Schooten (who had died in May 1660), calling him “once my very diligent disciple in mathematics,”¹¹ while in 1691 a fragment of what appears to be a letter of Hartzing to Clauberg, tracing back to April 1658 and praising Clauberg’s *Paraphrasis in Renati Descartes Meditationes de prima philosophia* (1658), was published among the *Elogia ac iudicia virorum doctissimorum de operibus Claubergii, ab ipso auctore enotata* opening the edition of Clauberg’s *Opera omnia*, together with reports of such foremost Cartesian scholars as Christopher Wittich, Johannes de Bruin, Lambertus van Velthuysen, Theodoor Craanen, Johann Georg Graevius, De Raey, Guillaume Soudan and Tobias Andreae.¹²

Collection, Box 2, Folder 41, n. 814. For the full transcription, see STRAZZONI 2014.

10 Gemeente Amsterdam Stadsarchief, Toegangsnummer 27 (Archief van het Collegium Medicum, Collegium Obstetricium en Plaatselijke Commissie van Geneeskundig Toezicht): nr. 18-19 (‘Proeff-Boeck’, register bevattende de namen van de apothekers die het examen voor meester of meesterknecht hebben afgelegd, met vermelding van de examenopgaven, 1638-1806) and 20-21 (‘Series nominum doctorum medicinae’, register bevattende de namen van de praktiserende medische doctores, met vermelding van de datum van promotie en burgerschap, 1641-1826); Toegangsnummer 366 (Archief van de Gilden en het Brouwerscollege): nr. 245-246 (Register van afgelegde meesterproeven, 1599-1798).

11 “[...] praestantissimus ac undequaque doctissimus juvenis D. Petrus Hartsingius, Iaponensis, quondam in addiscendis Mathematicis, discipulus meus solertissimus,” VAN SCHOOTEN 1659–1661, *Tractatus de concinnandis demonstrationibus geometricis ex calculo algebraico*, 413–414. See MIKAMI-SMITH 1914; chapter 7; VAN DER PAS 1975; SEIICHI 1985; BAUMANN 1991; HEEFFER FORTHCOMING. A miscellaneous manuscript reporting a solution, by Hartzing, of a mathematical problem is extant at the Amsterdam University Library, in the collection of manuscripts acquired from the library of the Dutch Mathematical Society (Koninklijk Wiskundig Genootschap): Ms. 1, 234: “[...] questio soluta à Domino Petro Hartzingio.” Described in DOLD-SAMPLONIUS 1968.

12 CLAUBERG 1691, vol. 1, *Elogia ac iudicia* (unnumbered).

As far as Hartzing's skills in medicine are concerned, these are confirmed not only by De Raey's letter and by his honorary enrolment at Leiden. Indeed, he played, between 1660 and 1665, a crucial role in the quarrel between Franciscus Sylvius (1614–1672), professor of medicine at Leiden, and Anton Deusing (1612–1666), professor at Groningen. In his *Sylva-caedua iacens: seu Disquisitiones anti-Sylvianae ulteriores* (1665), aimed against Sylvius's *Disputationes medicae* (held at Leiden between 1659 and 1663),¹³ Deusing mentions Hartzing as the unacknowledged discoverer of a process central to Sylvius's physiology, notoriously based on chemical explanations.¹⁴ Such a process is, to put it with Deusing, the "effervescence of the humours taking place in the right auricle of the heart, [resulting] from the confluence of the acid spirit and the lixivious salt (which discovery a certain disciple of Sylvius, Mr. Hartzing, suggested to him for the first time)."¹⁵ Or, as Deusing continues against Sylvius,

you [...] have admitted and defended the [thesis of the] effervescence resulting from the acid spirit and the lixivious salt in the right auricle of the heart, [aimed] at conserving and augmenting the heat of the heart, not only introduced in your Academy but completely discovered by him [Hartzing], [after having] rejected your precedent opinion of the inner vital fire of the heart.¹⁶

13 The disputations (10 in numbers) were published as a monograph in 1663 (i.e. the first 8 disputations: SYLVIUS 1663) and in a complete form in 1674 (SYLVIUS 1674). Other texts which appeared during the quarrel were DEUSING 1663(1); DEUSING 1663(2); SYLVIUS 1664; DEUSING 1664(1); DEUSING 1664(2).

14 See UNDERWOOD 1972; RAGLAND 2012.

15 "Effervescentia humorum in dextra cordis auricula contingens, ex acidi spiritus et sal lixiviosi confluxu quodam, (quod commentum aliquis Sylvii discipulus, D. Hartzingius, ei primum suggessit)," DEUSING 1665, 28.

16 "Discipulus tuus, D. Hartzingius, [...] effervescentiam illam ex spiritu acido ac sale lixivioso in cordis auricula dextra resultantem, pro conservando augendoque cordis calore, ab ipso non modo in Academiam vestram introductam primum sed plane inventam, admiseris ac propugnaveris, reiecta priori sententia tua de interno cordis igne vitali (cum interim nullam inventoris ipsius feceris mentionem)," DEUSING 1665, 171–172.

Indeed, in his *Disputationes*, Sylvius adopted the Cartesian explanation of the heart-beat as due to the expansion and rarefaction of the blood caused by the heat acquired by the blood in the heart. According to Descartes's *Discours de la méthode* (1637), the blood enters through the right ventricle of the heart from the *vena cava*, which dilates forming the right auricle of the heart, and there it is instantaneously rarefied by the heat of the heart, which in turn is dilated by the expanding volume of the blood.¹⁷ Such heat consists for Descartes in "one of those fires without light which [...] heats up the hay [...] or which makes new wines boil when one lets them ferment."¹⁸ Thus far, Descartes expresses the process of rarefaction of the blood in terms of ebullition and fermentation.¹⁹ In turn, the innate heat of the heart, as Descartes clarifies in his letter to Vopiscus Plempius of 15 February 1638, is alimented by that part of the blood which remains in the heart, and serves as a sort of yeast for the incoming blood.²⁰

As to Sylvius, the idea that the blood is rarefied by the innate heat of the heart is adopted by him in the third of his *Disputationes*,²¹ where, however, he also notes that it is unclear how the innate heat of the heart is never extinguished, given the fact that it continuously heats up large amounts of blood passing through the heart. A problem solved by Sylvius by comparing innate

17 AT VI, 48–49.

18 "[...] un de ces feux sans lumière que j'avais déjà expliqués, et que je ne concevais point d'autre nature que celui qui échauffe le foin lorsqu'on l'a renfermé avant qu'il fût sec, ou qui fait bouillir les vins nouveaux lorsqu'on les laisse cuver sur la râpe," AT VI, 46.

19 The reference to fermentation was anyway dropped from the account of the movement of the blood given in his *Les passions de l'âme* (1650), while it recurs in his posthumously published *Traité de l'homme* (1662, 1664) and *Description du corps humain* (1664): AT XI, 123, 231–233 and 333–334. See ANSTEY 2000; PETRESCU 2013.

20 AT I, 528–530

21 SYLVIUS 1674, disputation 3, theses 15–16 and 23–25.

heat to a candle, by which many other candles – representing the blood coming into the heart – can be lit without the first candle losing its fire.²² The problem is then re-addressed in disputation 7, where Sylvius, building upon the idea of effervescence as the result of the concourse of lixivious salt and acid spirit (that is, alkali and acid),²³ conjectures that innate heat originates in and is maintained by the effervescence of the blood. This takes place in the heart's right auricle, where the blood containing bitter bile and the blood containing lymph, coming through the *venae cavae* from the lower and upper parts of the body, come into contact.²⁴ This is a conjecture, for the reason that it is only assumed, but not corroborated by experience, that lymph is actually acid, whereas it is ascertained that bitter bile contains lixivious salt.²⁵ Eventually, the whole matter is settled in disputations 8 and 10, according to which a number of experiments confirm that lymph is acid (or *subacida*),²⁶ thereby corroborating such a conjecture and confirming that the innate heat of the heart originates in and is maintained by the effervescence of bile and lymph.²⁷

Actually, Sylvius had embraced the idea that blood undergoes an effervescence in the heart as early as in 1641, as testified to by the evidence we have in his correspondence with Henricus Regius. A position rejected by

22 SYLVIUS 1674, disputation 3, theses 26–27.

23 For Sylvius's definition of effervescence, see SYLVIUS 1674, disputation 1, thesis 27; disputation 2, thesis 13; disputation 10, thesis 45.

24 "Accenditur et quidem perpetuo (si veritatis manifestandae ac propagandae ergo coniecturas nostras ulteriores, et posteriores secundum id, quod disp. V thes. 48 insinuavimus, publico examini subiicere licet, uti licere putamus) accenditur, inquam, ignis vitali ex sanguinis tum adscendentis bile amara imbuti, tam descendents, lymphæ subacida referti in cordis auricula dextra hinc et ventriculo dextro confluentis effervescentia," SYLVIUS 1674, disputation 7, thesis 54. Cf. the next footnote.

25 "Lympham [...] si de acido spiritu simul participare constaret, insignem ipsius usum afferremus; sed ob incertitudinem et dubitationem in aliud tempus differre cogimur," SYLVIUS 1674, disputation 5, thesis 48.

26 SYLVIUS 1674, disputation 8, theses 42–53; disputation 10, theses 31–43.

27 SYLVIUS 1674, disputation 9, thesis 40; disputation 10, theses 44–45 and 55–56.

Descartes himself, who preferred to use the idea of rarefaction of the blood, since not all liquids which undergo effervescence, at the same time, rarefy.²⁸ Therefore, the use of the idea of effervescence in explaining the movement of blood in the heart cannot be – *pace* Deusing – completely attributed to Hartzing.²⁹ Yet, it might be that Hartzing suggested to Sylvius the conjecture that the lymph carried by blood is acid, making the idea of effervescence fit the explanation of the heart-beat. Or, alternatively, Hartzing may have provided Sylvius with empirical evidence corroborating such a conjecture. All this should have happened between late 1660 and early 1661, when disputations 7 and 8 took place (respectively on 22 December 1660 and 19 March 1661): namely after Hartzing’s enrolment as a student of medicine in August 1660, and around the period in which he, *teste* De Raey, exercised practical medicine at Amsterdam. In turn, Deusing made Hartzing’s contribution to Sylvius’s physiology public around 1665: it might be that Hartzing himself communicated this to Deusing (with whom he could have had some connection, as they both came from Moers) and that afterwards he interrupted his medical activities at Amsterdam.

Indeed, in October 1666 Hartzing, together with a certain Arnold Huyberts, was in charge of the reactivation of some mines by the Duke Johann Friedrich of Brunswick-Lüneburg (1625–1679) at St. Andreasberg (Harz), with a three-year contract: an enterprise revealing his technical expertise, which he might have acquired by attending Van Schooten’s course in *Duytsche mathe-*

28 AT III, 440–441; cf. Bos 2002, 83–89. In his *Disputationes* Sylvius distinguished between fermentation, effervescence and ebullition as three different chemical processes: SYLVIVS 1674, disputation 1, theses 27–28.

29 Deusing’s criticism is also reported in Albrecht von Haller’s *Elementa physiologiae corporis humani*: VON HALLER 1757–1766, vol. 6, 447.

matique at Leiden.³⁰ However, the enterprise ceased in 1667, as a consequence of the Duke's demanding expectations of it. At that point, however, Hartzing remained in the service of the Duke: indeed, in July 1668 he was nominated superintendent of the mines (*Bergrat*) in the Zellerfeld mining department (*Bergamt*), while in May 1672 he became superintendent of the mines and tax-collector (*Bergrat und Zehntner*) at Clausthal, and in January 1674 he became court councillor (*Hofrat*) of the Duke.³¹

The same position was assumed in 1677 by Leibniz, with whom Hartzing entered into conflict in the last phase of his life. As reported by Henning Calvör in his *Acta Historico-Chronologico-Mechanica circa metallurgiam in Hercynia superiori* (1763), at the beginning of 1678 Hartzing made a proposal to the Clausthal *Bergamt* and presented a model for draining the water from the mines by the use of pumps activated by windmills. The *Bergamt* as well as the Hannover land authority (*Herrschaft*) liked Hartzing's proposal, and in August 1679 the Duke decided the construction of a windmill, but at the same time it was communicated to the Clausthal *Bergamt* that its model had been devised by Leibniz. On 12 September, in turn, the Duke granted Leibniz a yearly remuneration of 1,200 *Reichsthalers* in the event of successfully completing a one-year probation period. In the meantime, however, Hartzing – having been at Hannover – heard about Leibniz's proposal, and provided a negative evaluation of it. This notwithstanding, Leibniz's proposal was accepted, and a contract was signed between him and the Clausthal *Bergamt* on

³⁰ On this, see DIJKSTERHUIS 2017.

³¹ The decrees of nomination as *Bergrat* and *Hofrat* are extant at the Niedersächsisches Landesarchiv Hannover, NLA HA Cal. Br. 22 Nr. 68, 2r-3v and 12r-14v. See VON ROHR 1739, 396 and 397; GATTERER 1785-1792, vol. 3, 230-231; BECKMANN 1808-1810, vol. 1, 627; HONEMANN 1827-1830, vol. 4, 100-103 and 113.

20 September, and ratified by the Duke on 15 October 1679.³² On 5 December of the same year, Hartzing protested the originality of his model,³³ and the controversy continued even after his death (12 June 1680),³⁴ when officials at Clausthal accused Leibniz of plagiarism – but the full story of this is still to be

32 “Im Frühjahr Anno 1678. hat der Hof- und Bergrath auch Zehntner zum Clausthal, Peter Harzingk, in Vorschlag gebracht, durch Windmühlen die Wasser aus den Gruben zu gewältigen, um bey gehendem Winde die Wasser zu sparen, und durch solche Abwechselung die Künste im beständigen Gange zu erhalten. Er hat dabey ein dazu verfertigtes Modell vorgezeiget. Wie nun dieser Vorschlag im Bergamte, und auf dessen Vorstellung auch bey der Herrschaft, Beyfall gefunden [...]. So ist im Aug. Anno 1679 der Anbau einer Windmühle von dem Herzoge Johann Friederich resolviret, und dem Bergamte zugleich eröffnet worden, daß Dero Hofrath, Gottfried Wilhelm Leibniz, der Erfinder davon sey, der sich zu dem Ende auf dem Clausthal anfinden würde. [...] Wann nun die Probe dem Wunsche gemäß gewesen, sollte Proponent nach Serenissimi gnädigster Determination (sub dato den 12. Sept. 1679) [...], erstlich 1200 Rthlr. wegen des verflorbenen Probejahrs, und dann inskünftige jedesmal bey der quartaligen Distribution 300 Rthlr. in specien [...] zu geniessen haben. [...] Als man diesen Vortrag dem Hof- und Bergrath Harzingk, der eben in Hannover gewesen, communiciret, hat derselbe auf hohen Befehl [...] dagegen vorgebrachte Difficultäten aufgesetzt. [...] Sowol des Herrn von Leibniz Vorschlag, als die beregten Difficultäten, sind von dem Herzoge an das Clausthaler Bergamt eingesandt, und dabey die gnädige Resolution vermeldet worden, daß besagtem Hofrath, unter gewissen in einem mit demselben aufzurichtenden und zur Ratification einzuschickenden förmlichen Contract zu verfassenden Bedingungen [...] Als hierauf das Bergamt mit dem Herrn von Leibnitz in Unterredung getreten, und ihm noch einige andere Punkte und Fragen vorgeleget, die er beantwortet hat, und er, aller Vorstellungen und Schwierigkeiten ohngeachtet, das Werk vorzunehmen sich entschlossen. So ist, nach Inhalt des Herrschaftlichen Schreibens, ein förmlicher zur Ratification einzuschickender Contract zwischen dem Bergamt und ihm unter dem 20. Sept. aufgerichtet worden [...]. Dieser von dem Bergamte und Leibnizen untersiegelte, und von dem letzten zugleich unterschriebene Receß ist von dem Herzoge Johann Friederich unterdem 15 Oct. 1679 ratificiret worden,” CALVÖR 1763, vol. 1, 101-104. Leibniz’s project was put in practice in 1680-1683, but it eventually end in a failure. See LOMMATZSCH 1966; STIEGLER 1968; HORST-GOTTSCHALK 1973; GOTTSCHALK 1982; LOMMATZSCH 1984; HESS-O’HARA 1995; GOTTSCHALK 2000; FETTWEIS 2004; LAMPE 2008; WELLMER-GOTTSCHALK 2010; WAKEFIELD 2012; WELLMER-GOTTSCHALK 2016; BOETTICHER-RUPPELT 2018. Cf. also A I/2, letters 116, 117, 122, 124, 125, 126, 128, 129, 130, 159, 160, 164, 167, 168, 169, 172, 174, 176 and 180.

33 See DENNERT 1972; WELLMER-GOTTSCHALK 2016, 37.

34 On Hartzing’s last months, see A I/2, letter 158; A I/3, letters 24 and 39; A III/2, letter 334.

reconstructed.³⁵

In any case, in these years Hartzing kept in close contact with his acquaintances and family in the Netherlands. In 1669, as seen above, he became again a student of medicine at Leiden: therefore, it seems that he maintained good relations with Sylvius, in that year rector of the University. Moreover, De Solemne (his stepmother) and some of his half-brothers were living in the Netherlands, and were going to be his heirs,³⁶ while he himself cooperated with the VOC as an expert in chemistry and mining. On 12 June 1678, after having completed a chemical assessment of some ore specimens from Asia, and sent him by the VOC at Clausthal, Hartzing presented to the directors (*Bewindhebbers*) of the company a project for the exploitation of mines in Sumatra, for which he was rewarded 1,000 guilders (even if this eventually ended in failure, in 1681–1683).³⁷ Moreover, as testified to by Leibniz's corres-

35 See WAKEFIELD 2012. Archival sources related to the *affaire* are extant at the Niedersächsisches Landesarchiv (Hannover, NLA HA Cal. Br. 4 Nr. 528) and at the Bergarchiv Clausthal (NLA HA BaCl Hann. 84a, Nr. 6735 and Nr. 6739).

36 Hartzing's testament of 20 April 1680 is fully transcribed and commented in FAULENBACH 2014, 42–54. The original is extant at the Bergarchiv Clausthal (NLA HA BaCl Hann. 184 Acc. 5 Nr. 1667), while a copy is extant at the Landesarchiv Nordrhein-Westfalen Abteilung Rheinland (Findbuch 105.00.02, Nr. 642, ff. 31–43). Hartzing also established a foundation aimed at sustaining poor students. See GATTERER 1785–1792, vol. 3, 275–276; BECKMANN 1808–1810, vol. 1, 628; HONEMANN 1827–1830, vol. 4, 162–163; VON ERNSTHAUSEN 1863, 125–126; WIESE 1864, 373; GRANZIN 1968; REUTLINGER 1982; WERKLE 1982; STOCK-WEICHERT 2020.

37 Hartzing's proposal is now extant at the Royal Danish Library, Copenhagen, ms. NKS 136 folio: *Beschryvinge van het Bergwerk van Sillida op de West Kust van Sumatra, in Eygendom van de Ostindische Compagnie der vereinigde Nederlanden, door P. Hartzingh, Hof- en Berg-Raad van den Hertogh van Brunswyck en Luneburgh*. The VOC's resolutions are extant at the Dutch Nationaal Archief, The Hague, Verenigde Oostindische Compagnie (VOC), nummer toegang 1.04.02, inventarisnummer 240 (cf. resolutions of the 15 August 1678) and 241 (cf. resolutions of the 18 August 1678). See VOGEL 1704, 312–314; FRIKIUS-HESSE-SCHWEITZER 1705, 232 and 241; MALLET 1719, vol. 2, 164; VALENTIJN 1724–1726, vol. 5, 39–40; HESSEN 1735, 169–170; VAN RANOUW 1758, vol. 1, 528; PRÉVOST ET AL. 1746–1789, vol. 17, 144; TEN HOORN 1765, 331; BECKMANN 1808–1810, vol. 1, 626; VON ZIMMERMANN 1801–1819, vol. 17, 54 and 319; KIRSCH 1994, 338; SOMERS HEIDHUES 2006; DAVIDS 2008, vol. 1, 237. Hartzing's expertise in chemistry is testified also by Leibniz's correspondence: see A

pondence, Hartzing was an acquaintance of Johannes Hudde (mathematician and director of the VOC), and had the authority to recommend the hiring of Heinrich Brand (correspondent of Leibniz) by the VOC itself.³⁸

Thus far, Hartzing was a renowned expert in chemistry, metallurgy, mining, as well as in coins as such, including his duties as *Bergrath und Zehntner* of supervising minting. In particular, in 1678 he introduced at Clausthal a new method of minting (already in use in Holland),³⁹ while at his death he left a collection of medals to Huyberts, worth 1,000 ducats (plus other items).⁴⁰ Therefore, it is not surprising that he shared with Molanus (whom he

III/2, letters 204, 206, 211, 217, 241 and 253. Moreover, his testament mentions a chemical laboratory, as well as various experimental instruments: “[l]egiere demnach und vermache meinem Vettern Georg Heinrich ope den Ackern vor erwiesene treufleißige Aufwartung und Liebe zu einem geringen Recompens vorerst eine Summa von sechshundert Thaler [...]. Damit er auch hierin desto fleißiger seyn und dabey ohne Kosten verbleiben möge, so vermache ich ihm über vorbemelde Summa zum andern auch alle meine Kleider und was dazu gehört, item allen Vorrath von Leinen, Cattun, Seide un Wüllenzeug, es sey bereitet oder ubereitet [...], wie auch zum dritten alle Provisiones von Eß- und Trinckwahren, so im Keller, Küchen und auf dem Boden vorhanden seyn, item zum vierdten alle meine Gemahlden und Kupferstücke, so ich alhie habe, und fünfstens alle meine Gereitschafften, Instrumenten, Öffen, Wagen, Probierwagen und Gewichten von Größten biß zum Kleinsten, welche bey der Probierkunst einigermaßen gehören. Doch alles andere ausgeschlossen, so zu der Haußhaltung und zum Laboratorio chymico gewidmet ist und eigen bleiben muß. [...] Meinem jüngsten und wehrsten Brudern Carel Harzing, welcher sich noch auf das Studieren leget und curieusen Sachen fleißig nachstebet, verehr ich alle meine Bücher, Manuscripta, Drogues, Apotheke, Ertzstufen, Mineralia, Metalla und was von dergleichen Sachen in meinem Vermögen befindlich, und nebenst dem allen vermache ihm noch einen meiner besten Kuxen, so er unter allen den Meinigen selbst wird wehlen und haben wollen,” FAULENBACH 2014, 47 and 49.

38 A III/2, letters 279, 282 and 290. See also A I/2, letter 170. Hudde is mentioned also in Hartzing’s testament: “[e]ine güldene von fil de gran gemachte Schachtel, darin ein ander güldenes Pourtrait-Kästlein mit Crystallen verschloßen, samt serenissimorum Pourtraits vorhanden, soll insgesamt und ohne Mülderung dem hochedelen Herren Burgermeistern der Stadt Amsterdam Herrn Johanni Hutten als meinen alten und hochwehrten Freunde und Patronen zu meinem Andencken praesentiret und abgegeben werden,” FAULENBACH 2014, 48.

39 See GRANZIN 1968.

40 “Herrn Arnoldo Huybers als meinem vertrautsten und wehrtesten Freunde legier ich einen Beutel mit güldenen Medailien, 100 Ducaten werth, darin ein Stück von Serenissi-

certainly met in Hannover) the offer of the sale of a collection of coins at Amsterdam.

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mi Hertzogen Johan Fridrichs Durchlauchste Pourtrait, ein von Serenissimi Hertzogen Rudolf Augusti Durchlaucht Pourtrait, ein von der Hamburgischen Schifffahrt und ein Begräbnus Pfenning nebenst wichtigen neuen Ducaten vorhanden seyn," FAULENBACH 2014, 48. See also GRANZIN 1968. Hartzing himself is celebrated by a 1675 copper token. One exemplar of it is now extant at the Rijksmuseum at The Hague (object number NG-VG-3-1396: <http://hdl.handle.net/10934/RM0001.COLLECT.237368>, last accessed on 25 May 2020). On this token, see HEYSE 1845, 64; WOLFF 1854, 22; HEYSE 1857, 117; NEUMANN 1858–1872, vol. 5, 380; INN- UND KNYPHAUSEN 1872, 405; GANS-HILD 2014, 178. Hartzing's seal is extant at the Bergarchiv Clausthal: NLA HA BaCl Hann. 84a Nr. 5609/1.

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