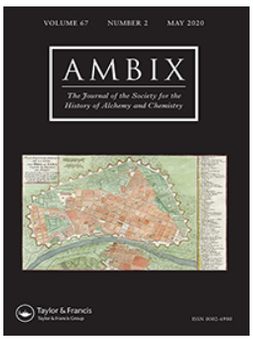

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An Alchemist in Greenland: Hans Egede (1686–1758) and Alchemical Practice in the Colony of Hope

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The article explores the practical and social circumstances of the alchemical experiments performed by the Norwegian priest and missionary Hans Egede (1686–1758) in the Colony of Hope in Greenland. Sources not previously used in connection with Egede's alchemy are used to investigate in which ways his situation in the colony affected alchemical practice. A lack of fuel is found to have been a main obstacle which may have limited the number of experiments that Egede was able to perform in Greenland. At the same time, the area had natural resources that were useful to the alchemist, and Egede's position as head of the colony gave access to resources that facilitated alchemical practice.

The protestant priest and missionary Hans Poulsson Egede (Johannes Pauli Qvercetanus, 1686–1758) is one of very few Norwegians known to have practiced alchemy with the goal of making gold. He is famous for his pioneer work as Greenland's first missionary and natural historian, but it is not widely known that he made several attempts at producing the Philosophers' Stone while working as a missionary in Greenland (Figure 1).

Although new research has revealed that alchemy was to Hans Egede a life-long, pervasive interest which was interwoven with his view of nature and natural-historical investigations, historians of alchemy have not yet looked into the material and social circumstances surrounding his alchemical practice. This study investigates the material and social preconditions of Egede's alchemical work in the Colony of Hope, his first colony in Greenland, with the aim of engaging the question of how Egede's physical surroundings and social situation may have influenced the possibility of carrying out alchemical experiments.

Although an obscure figure to English readers, Hans Egede is well-known in Norway and Denmark for his pioneering work as the first missionary and natural

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Hans Poulsson Egede. Portrait reproduced by permission from the Ethnographic Collection, Museum of Cultural History in Oslo.

historian in Greenland. The small, remote colony in Greenland was an atypical site of alchemy. This article addresses the hindrances that Egede met with in such a site, and brings to light those aspects of his situation in the colony that may have facilitated his alchemical practice.

Previous research on Hans Egede's alchemy

There has been very little scholarly research focused on Hans Egede's alchemy. Although many biographers have mentioned Egede's alchemical experimentation in the Colony of Hope,[1] most have seen it as a curious episode with no relevance to his more famous work as a natural historian and missionary, and with no attempt to reconcile his interest in alchemy with the rest of his biography. Only relatively recently has that interest caught the attention of historians of science. Although

[1] Among biographers that have mentioned Egede's alchemical experiments, are Jacob Johan Lund, *Første missionair på Grønland, biskop Hans Egedes levnet* (Copenhagen: Det Kongelig Waysenhuses Bogtrykkerie, 1778), 70–71; Eilert Sundt, *Egedes dagbog i udtog* (Christiania: Selskabet for Folkeoplysningens Fremme 1860), 169; H.M. Fenger, *Bidrag til Hans Egedes og den grønlandske missions historie 1721–1760* (Copenhagen: G.E.C. Gad, 1879), 25; Niels Fenger, *Palasé Hans Egede i Grønland* (Copenhagen: Wøldike 1971), 108–109; Erik Gant, "Omvendelse – om Hans Egede og det store værk," *Tidsskriftet Grønland* 42, no. 7 (1994): 227–245, 227, 236–238; Karl Erik Harr, *Is og ild – i Hans Egedes kjølvann* (Oslo: Verbum, 2008), 91–93.

Thorstein Hiortdahl, in 1905,[2] termed Egede one of Norway's very first chemists, interest in Egede's alchemy had to wait almost a hundred years, until the Danish historian of science Helge Kragh gave an account of Egede's recorded alchemical experiment in the short popular article "Hans Egede – apostel og alkymist" ("Hans Egede – apostle and alchemist," 2002).[3] New insight beyond what could be read in Egede's own published account followed in the work of Kragh's Norwegian colleague Kjell Furuset. Through an analysis of the events described in Egede's account, and an interpretation of the alchemical imagery included in it, Furuset determined the actual alchemical process of Egede's recorded experiment and identified both the substances and the method that he used.[4] In a more recent study (2019), I have gone further and, drawing on source material beyond Egede's own short account, have identified the alchemical theories and authors that informed his experiments as well as the alchemical traditions of European alchemy with which he was familiar. This research also indicated that alchemy had a far more central position in his life than previously observed, and that he maintained alchemical interests and projects over four decades,[5] during which time, he made at least three attempts at producing the Philosophers' Stone in Greenland.[6] In the present study, I look at the material conditions of Egede's alchemical practice in Greenland using sources that can provide us with important information related to the material and practical conditions of Egede's alchemical work in the Colony of Hope.

Central among these sources is his natural historical study of Greenland's geography, published in 1741, containing observations concerning natural resources, plants, animals, and the customs of the Inuits, *Det gamle Grønlands ny perlustration eller naturel-historie* (*The New Perlustration or Natural History of the Old Greenland*).[7] In addition to revealing his ideas about nature, Egede's *New Perlustration* also contains information about the natural resources that provided him with materials for alchemical work. Also important for providing valuable insight into the material conditions of daily life in the colony, are transcripts of letters and documents

[2] Thorstein Hiortdahl, "Bidrag til kemiens historie i Norge," *Nyt magazin for naturvidenskaberne* 43 (1905): 339–340.

[3] Helge Kragh, "Hans Egede – apostel og alkymist," *Dansk kemi* 83, no. 12 (2002): 32–33. Gulløv and Kapel had mentioned in 1979, but without further elaboration, that crucibles found on the site of the Egede family's room may have been used for alchemy. H.C. Gulløv and Hans Kapel, *Haabetz Colonie 1721–1728: A Historical-Archaeological Investigation of the Danish-Norwegian Colonization of Greenland* (Copenhagen: The National Museum of Denmark, 1979), 95.

[4] Kjell Furuset, "En alkymistisk tolkning av Hans Egedes drømmefabel," *Tidsskriftet Grønland* 6 (2006): 312–320. Egede was mentioned as one of Norway's very few known practicing alchemists in Gina Dahl's article on alchemy in Norway in Henrik Bogdan and Olav Hammer's *Western Esotericism in Scandinavia*. Gina Dahl, "Alchemy in Norway," in *Western Esoterism in Scandinavia*, ed. Henrik Bogdan and Olav Hammer (Leiden: Brill, 2016), 25–32. The article however added no information beyond the contents of Egede's report, and Furuset's findings were not mentioned. Dahl, "Alchemy in Norway," 31.

[5] Hilde Norrgrén, "Hans Egede and the Alchemical Tradition in Denmark-Norway," *Science in Context* 32, no. 3 (September 2019): 1–23.

[6] Hans Egede, *Relationer fra Grønland 1721–36 og Det gamle Grønlands ny perlustration, 1741*, in *Meddelelser om Grønland* 54, ed. Louis Theodor Alfred Bobé (Copenhagen: C.A. Reitzels Forlag, 1925): 195–196.

[7] In the period, Greenland was called Old Greenland, and the area around the Barents Sea (i.e. Norway, Spitsbergen and Novaja Semlja) was called (New) Greenland. Hans Christian Gulløv, *Kampen om sjælene: Grønland og oplysningstiden* (Copenhagen: Nationalmuseet, ca. 1978), 17.

exchanged between the Bergen Company and the Colony of Hope in the years 1721–1726, and excerpts from Egede's son Paul's diary, published in 1788.[8]

Background and historical setting

Hans Egede landed in Greenland on 3rd July 1721, with his wife Gertrud (1673–1735), their four children and a crew of about 40 in three ships, after two months at sea. He had started his career as a priest in Vågan, the neighbouring island to his birthplace Harstad in northern Norway, where he had stayed for eleven years. During this time the idea of going to Greenland as a missionary had taken root, and in 1718 he travelled to Bergen where he spent two years trying to find investors. According to the 1727 report, it was during this time that he first commenced his alchemical studies and performed his first alchemical experiments.[9] After a few failed experiments, and frustrated by his inability to see any agreement between alchemical texts, he decided "never again to bother [his] brain with these useless studies."[10]

King Frederik IV of Denmark-Norway was interested in mission work and had already established the Mission College in order to send missionaries to the colonies. Egede succeeded in securing his support,[11] and in 1720 the Bergen Company (Det Bergenske Kompagni) was founded for the purpose of Egede's project and granted trade rights and tax exemptions. An important objective for King Frederik in supporting Egede was his wish to recolonise Greenland and claim ownership of its resources. Greenland had been a Norwegian colony since the tenth century, with cloisters, churches and about 300 farms in two main settlements called Austerbygd and Vesterbygd (Eastern and Western settlement respectively).[12] It had been formally part of the Norwegian kingdom from 1241.[13] However, after the Black Death, Norway had come under control of the Danish crown and would remain so until 1814, when Denmark as part of the Kiel treaty handed Norway over to Sweden but kept Greenland, Iceland, and the Faroe Islands, which had all been Norwegian

[8] P. R. Sollied and O. Solberg, *Bergenserne på Grønland i det 18. århundre. 1: Håbets Koloni: Anlegg og beseiling 1721–1726* (Oslo: Oslo Etnografiske Museum, 1932). That the published version contains references to, but does not include, lists of goods, indicates a possibility that also other material relevant to the topic of the present article, such as lists of alchemical books and supplies ordered by Egede, may have originally existed as part of this correspondence but was not considered interesting enough to be published. The original documents are now lost, but could provide interesting information, particularly on how Egede procured supplies for his alchemical practice, should they resurface. Textual material that could have provided information about the circumstances of Egede's alchemy in Greenland may also have existed in the archives of the Mission College. These were however destroyed in the great fire in Copenhagen in June 1795. Among the material lost were Egede's diaries from 1724–1735 (bound in seal skin by Egede himself), the annual mission reports from 1724–1736, all Egede's church records from Greenland, and all correspondence between Egede and the Mission College. H. Ostermann, *Dagbøker av nordmenn på Grønland før 1814* (Oslo: Jacob Dybwad, 1935), 1; Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland* (Copenhagen: Nationalmuseet 1971), 16.

[9] Egede, *Relationer fra Grønland*, 194.

[10] "tænkte aldrig mere at bryde min Hjerne med saa unyttig Studering," Egede, *Relationer fra Grønland*, 194. All translations from Danish and Norwegian are mine.

[11] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 7–8, 10.

[12] Gulløv and Kapel, *Haabetz Colonie 1721–1728*, 11; Egede, *Relationer fra Grønland*, 30.

[13] Per G. Norseng and Nils Petter Thuesen, "Grønlands eldre historie," Store Norske Leksikon, University of Oslo, updated February 20, 2019, https://snl.no/Gr%C3%B8nlands_eldre_historie.

territories since the Middle Ages. In Egede's time, foreign traders, particularly Dutch, had established trade with the Inuits on Greenland's west coast.[14] Whereas Vesterbygd was empty of people by the mid-fourteenth century, Austerbygd remained populated until about year 1500.[15] Some thought that there might still be Norwegians living in Austerbygd, and Egede's original idea was to find this lost settlement and work as a missionary among its inhabitants, as he worried that two centuries without a priest might have caused the inhabitants to degenerate into "heathen blindness and savagery."[16] Egede's mission project and his investigations into Greenland's natural history served also another purpose, becoming an important part of the Danish-Norwegian efforts to map Greenland's geography and natural resources and assert Denmark-Norway's rights in the area.

Egede remained in Greenland for fifteen years. After his return to Norway and Denmark, he founded the Seminarium Groenlandicum in Copenhagen to train missionaries for Greenland and wrote an Inuit catechism and books on the Inuit language. For his work, he was given the honorary title Bishop of Greenland. When during his last years Egede lived with his daughter in Stubkøbing in Denmark, he still had his alchemical equipment with him. He died in a plague in Stubkøbing in 1758.

A fatal experiment

Hans Egede's first colony in Greenland, where he lived with his family and a small number of other colonists from 1721 to 1728, was situated on the island now called Igdluerúnerit ("where there used to be houses"), which he christened Haabets Ø (Island of Hope), on Greenland's south-west coast.[17] Here he recommenced his alchemical studies and experiments, aiming to produce the Philosophers' Stone and use this to make gold. His one alchemical experiment that we have detailed information about was carried out here in the Colony of Hope.

In the summer of 1727, he reported to the Mission College in Copenhagen that on 12 March he had aborted an attempt to produce the Philosophers' Stone, with fatal results. His "Chymical Substance" had been in digestion for a long time when, by accident, the heat had become too intense. The substance had turned black, and the alchemical process seemed to have stopped. Egede assumed that his matter had been ruined and would not be able to transmute. He opened the vial, "not thinking, that anything evil would result from this."[18] There was no smell and seemingly

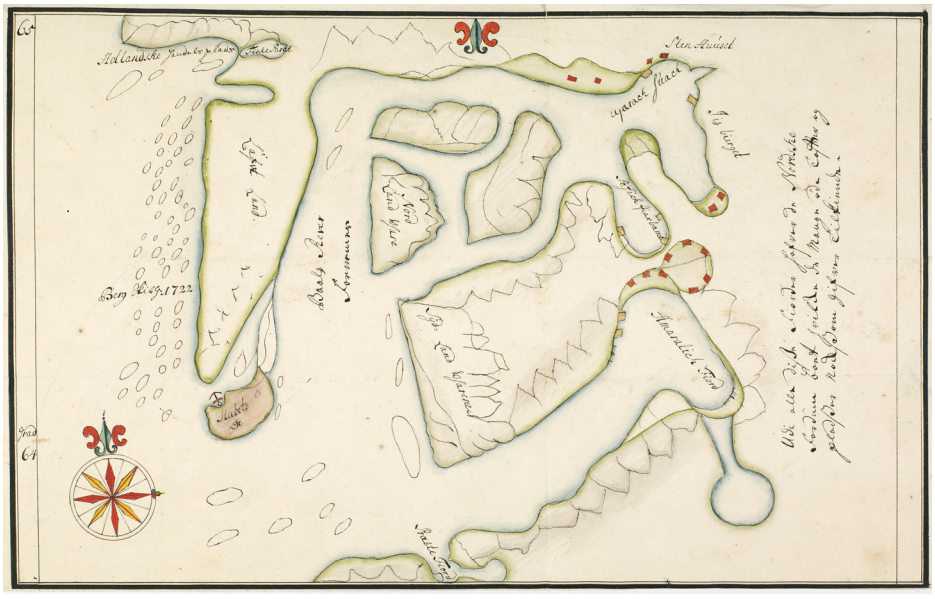
[14] John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley: University of California Press, 2003), 592–593, 604.

[15] Theories about what caused the disappearance of the inhabitants include famine, attacks from Inuits, plague, emigration to Iceland or America, and assimilation with the Inuits. Norseng and Thuesen, "Grønlands eldre historie." See also Egede, *Relationer fra Grønland*, 319. The last documented event that took place in the East settlement was a wedding in Hvaley church in 1408. Gulløv and Kapel, *Haabetz Colonie 1721–1728*, 19. According to Peder Friis communications ended after a plague in 1530. Peder Claussen Friis, *Norriges oc omliggende øers sandfærdige bescriffvelse* (Copenhagen: Melchior Marzan, 1632), 177; Egede, *Relationer fra Grønland*, 316.

[16] "hedenske Blindhed og Wildhed," Egede, *Relationer fra Grønland*, 3–4.

[17] The colony was long believed to have been on the island Kangeq. Gulløv and Kapel, *Haabetz Colonie 1721–1728*, 22.

[18] Egede, *Relationer fra Grønland,* 193. "ej tænkende, at deraf skulle noget ondt foraarsages."



Map drawn by Egede in 1722, showing the Island of Hope in south-west Greenland. The Royal Library in Copenhagen (public domain).

neither vapours nor gas. Suddenly, two puppies that were in the room puffed up and writhed on the floor in pain. After less than fifteen minutes both were dead. Then everybody present – Egede's children, his wife Gertrud, two Inuit girls, and Egede himself – began to experience headaches, weakness, and breathing difficulties. Egede now realised that poisonous, although invisible, fumes from his opened alchemical vial might be the cause and administered the antidote, theriac, to all affected. All recovered except one of the Inuit girls, who died sometime later.[19]

What had really happened? The poisonous gas emitted from the vial has on the basis of the events and symptoms described by Egede been identified by Kjell Furuset as stibine, or antimony trihydride (SbH_3), which develops when antimony comes into contact with acid.[20] The process that had taken place was the reduction of stibnite (antimontrisulphite, Sb_2S_3) to antimony by means of iron and copper.[21] Stibnite is the substance in which antimony is often found in nature, and alchemists used the term "antimony" in referring to both. As is also indicated by Egede's allegorical account of his experiment, where an impure maiden is purified in order to make her capable of marrying a prince, his purpose in purifying the stibnite was to render it able to compound with gold. To the purified antimony Egede had added a small amount of gold and left it to "digest" over temperate heat.

[19] Egede, *Relationer fra Grønland*, 193. Theriac was the name of a medicine made from many different ingredients, which originated in Antiquity and was later considered a universal antidote. The most famous version, "Venetian theriac," was in use until into the eighteenth century. See Dusanka Parojcic, Drogan Stupar, and Milica Mirica, "La thériaque: médicament et antidote," *Vesalius* 9 (2003): 28–32.

[20] Furuset, "En alkymistisk tolkning av Hans Egedes drømmefabel," 319.

[21] Furuset, "En alkymistisk tolkning av Hans Egedes drømmefabel," 317.

Egede does not indicate which alchemical theories formed the basis of his experiment but mentions some authors and works that he read.[22] His main sources were works by the German Paracelsian Johann Joachim Becher (1635–1682) and the Polish alchemist Michael Sendivogius (1566–1636), the latter's *Chymischer Schrifften*[23] being especially important as Egede's source of alchemical matter theory. Becher's *Chymischer Rosen-Garten*[24] was fundamental in Egede's early alchemical studies when its technical instructions convinced him that it was "not too difficult to learn to make gold."[25] Both Sendivogius's and Becher's works were newly republished when Egede arrived in Bergen. Of central importance to Egede's alchemical studies was also the Danish chemist Ole Borch, whose bibliographical *Conspectus scriptorum chemicorum illustrorum* (*Overview of Famous Chemical Texts*, 1696)[26] served as his guide to alchemical reading while in Greenland.

In Sendivogius's and Becher's theories the development of metals depend on a seed or *semen,*[27] and of a male and a female principle roughly corresponding to the principles of Sulphur and Mercury.[28] According to Becher's *Oedipus Chymicus* (1664), which Egede praised as particularly helpful, the principle of Sulphur in a metal was its "matrix" or "semen"[29] while the principle of Mercury, which Becher called "water" or "philosophical quicksilver," provided nourishment for the developing metal.[30]

In Egede's experiment, the prime matter or "philosophical quicksilver" was purified antimony. This choice was in accordance with both Borch's and Sendivogius's recommendations. Borch was of the opinion that antimony had great powers,[31] and many of the authorities and texts recommended in his *Conspectus scriptorum chemicorum* promoted the use of antimony in gold-making.[32] Antimony was

[22] For an expanded discussion of the theoretical context of Egede's alchemical practice, see Norrgrén, "Hans Egede and the Alchemical Tradition in Denmark-Norway," 7–16.

[23] *Michael Sendivogii Chymische Schriften: Derinnen Gar Deutlich Von Dem Ursprung, Bereit- Und Vollendung Des Gebenedeiten Steins Der Weisen Gehandelt Wird*, ed. Friedrich Roth-Scholtz (Nuremberg: Johann Daniel Tauber seel. Erben, 1718).

[24] *Johann Joachim Bechers Chymischer Rosen-Garten: Samt Einer Vorrede Und Kurtz Gefassten Lebens-Beschreibung Herrn D. Bechers*, ed. Friedrich Roth-Scholtz (Nuremberg: Johann Daniel Tauber seel. Erben, 1717).

[25] Egede, *Relationer fra Grønland*, 194.

[26] Ole Borch, *Conspectus scriptorum chemicorum illustrorum: libellus posthumus cui profixa historia vito ipsius ab ipso conscripta* (Copenhagen: Samuel Garmann, 1696).

[27] Michael Sendivogius, *Zwölff Tractatlein von dem Stein der Weisen*, in *Michael Sendivogii Chymische Schriften: Derinnen Gar Deutlich Von Dem Ursprung, Bereit- Und Vollendung Des Gebenedeiten Steins Der Weisen Gehandelt Wird*, ed. Friedrich Roth-Scholtz, 1–68 (Nuremberg: Johann Daniel Tauber seel. Erben, 1718 [1604]), 23; Johann Joachim Becher, *Oedipus Chymicus seu institutiones chymicæ* (Frankfurt am Main: Joh. Maximilianum van Sande (1716) [1664]), 22.

[28] Sendivogius and Becher include salt, the third principle of the Paracelsian *tria prima* in their theories of matter, but this had no practical significance for Egede's alchemical procedure.

[29] Johann Joachim Becher, *Oedipus Chymicus seu institutiones chymicæ* (Frankfurt am Main: Joh. Maximilianum van Sande, 1716), 55.

[30] Becher, *Oedipus Chymicus*, 53–55, 155–156, 159–160.

[31] See Hans Toftlund Nielsen and Fritz Saaby Pedersen, "Nogle bemærkelsesværdige eksempler på selvantændelser – først observeret af Ole Borch," in *Ole Borch (1626–1690) En dansk renæssancekemiker*, ed. Børge Riis Larsen (Dansk Selskab for Historisk Kemi, 2006), 67–69.

[32] Among them was Johann Grasshoff (Chortolasseus, d. 1623) (see Claus Priesner, "Grasshof(f), Johannes," in *Alchemie: Lexicon Einer Hermetischen Wissenschaft*, ed. Karin Figala and Claus Priesner (Munich: C.H. Beck'sche Verlagsbuchhandlung, 1998), 165–166), who described the production of the Philosophers' Stone from "the

central in Paracelsian medicine and seemed very promising in the period. Robert Boyle (1627–1691)[33] had experimented with antimony for forty years with the aim of producing the Philosophers' Stone, and Herman Boerhaave (1668–1738) also performed experiments with antimony similar to Egede's, seven years after the fatal experiment in the Colony of Hope.[34]

The purpose of the purification of antimony was thus to provide the prime matter, Becher's "philosophical quicksilver" or "water," of the alchemical process. To this Egede added a little gold. According to Sendivogius and Becher, the prime matter would then be permeated by the nature or essence of the gold and the gold's "seed" would cause it to "conceive." This union was in the allegorical "dream fable" that formed part of Egede's account represented by the marriage between a purified maiden and a prince. The mixture was to be left to "digest," a process that would balance the qualities of the matter, which would then begin to putrefy. This would destroy the form of the matter and make it possible for it to take on a new form. At this stage the substance would look black and seem "dead." If Egede had not aborted his experiment at this stage, he could however have expected the matter to "resurrect." Through a series of transformations in each of which the substance would change colour, finally a red powder or liquid would appear. This was the Philosophers' "Stone," believed to have the power to transfer the qualities of gold to a relatively large amount of base metal, which would thus be transmuted to gold.

As Egede picked up his books to find out what had gone wrong with his experiment, he soon understood that he should not have interpreted the inert blackness of the substance as a sign of failure. On the contrary, it was a necessary stage in the process and a sign that he was close to success.[35] We can imagine his despair at having needlessly ruined his experiment and precious ingredients. He tried to retrieve the gold that he had used in the process by melting the black matter but could only produce a "lead-like Matter almost like Antimony." Still, this gave him further encouragement: the transformation of his mixture of gold and antimony into a new substance from which the gold could no longer be separated, Egede saw as proof that transmutation had taken place. He wrote: "Here I will let a wise person judge, whether fine and pure gold, which it was in the beginning, except through a

[32] *Continued*
common mineral of Saturn, or antimony." Borch, *Conspectus scriptorum chemicorum*, 24, 35–36. *Clangor Buccinæ*, a German seventeenth-century text mentioned by Borch, described the process of purifying "minera Saturni" by removing the "sulphurous earth" from it. Borch, *Conspectus scriptorum chemicorum*, 24. According to Johann Heinrich Zedler's *Grosses vollständiges Universal-Lexicon aller Wissenschafften und Künste* (Lipzig, 1731–1754), *Clangor Buccinae* (published 1631) was written by Johann Cunrath Rhumel senior (1574–1630). John L. Flood, *Poets Laureate in the Holy Roman Empire: A Bio-bibliographical Handbook* (Berlin: Walter de Gruyter, 2006), vol. 3, 1692. Johannes de Monte-Snyder (circa 1625–1670), also German, is cited as having recommended the use of butter of antimony (antimony trichloride) to "resurrect" imperfect metals. Borch, *Conspectus scriptorum chemicorum*, 43.

[33] Lawrence M. Principe, *The Secrets of Alchemy* (Chicago: University of Chicago Press, 2013), 16.

[34] John C. Powers, *Inventing Chemistry: Herman Boerhaave and the Reform of the Chemical Arts* (Chicago: University of Chicago Press, 2012), 178–179.

[35] Egede, *Relationer fra Grønland*, 197.

Philosophical [i.e. alchemical] Operation could be changed into a lead-like matter, so that it could not be reduced back to its previous corpus?"[36]

The laboratory at the end of the world

Through Egede's report, we catch a glimpse of an unusual alchemical laboratory. Thanks to a description written by the royal commissary Christopher Jessen Pettersøn who visited the colony in the summer of 1727, we have detailed information about the colony's buildings.[37] All the colonists, who at this time numbered twenty-one,[38] shared a house of about 80 square metres in size, divided into three main parts. In addition, there were two storage houses, a smithy, an animal shed,[39] another small plank shed which served as a latrine,[40] and a log house that was used for storage.[41] Hans and Gertrud and their four children, who were at the time of the experiment, March 1727, from ten to eighteen years old,[42] had at their disposal a room of about twenty-five square metres, or approximately a third of the main house.[43] The two remaining parts of the house consisted in a room for the colony's trader, Jakob Geelmuyden[44] (a room that he shared with

[36] "Her lader jeg een Forstandig dømme, om fiint og puurt Guld, som det i Begyndelsen var, uden en Philosophisk Operation og Process, til en blyagtig Materie kand forandres, saaledes, at det ikke til sit forige Corpus kand reduceres?" Egede, *Relationer fra Grønland*, 195. Egede's conclusion, that this transformation was proof of transmutation, connects him with a central discussion in European alchemical circles. Robert Boyle in 1678 described an experiment where gold was transformed into a brittle "lump of Metal of a dirty color" by means of an "Anti-Elixir." Lawrence M. Principe, *The Aspiring Adept: Robert Boyle and his Alchemical Quest: Including Boyle's "Lost" Dialogue on the Transmutation of Metals* (Princeton, New Jersey: Princeton University Press, 1998), 68, 116, 284. Like Egede, Boyle saw the phenomenon as proof of the possibility of transmutation. Principe, *The Aspiring Adept*, 66, 80. See further discussion of Egede's "reverse transmutation" in Norrgrén, "Hans Egede and the Alchemical tradition in Denmark-Norway," 6. In addition to a similar experiment performed by the sixteenth century alchemist Gaston DuClo, referred to by Boyle, the deterioration of metals was described in Valentinian and Lullian texts. Principe, *The Aspiring Adept*, 83–84, 289.

[37] The house was 25 cubits long, 8 cubits wide, and 4 cubits high (16.29 × 5.34 × 2.51 metres). H. Ostermann, "Den første danske Undersøgelsesekspedition til Diskobugt 1727," *Geografisk Tidsskrift* 25 (1919–1920): 164; Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland,* 18. See also Sollied and Solberg, *Bergenserne på Grønland*, 236.

[38] Egede, *Relationer fra Grønland*, 187. For a list of officers in the colony, see H. Ostermann, *Nordmænd paa Grønland 1721–1814* (Oslo: Gyldendal, 1940), vol. 1, 34–35; for lists of employed crew members and colonists also see Sollied and Solberg, *Bergenserne på Grønland*, 213–236.

[39] In a letter of 18 June 1722, Egede asked the Bergen Company to send cows, goats and chickens. Goats, sheep, two cows, two bulls "and other animals" were sent in June 1723, Sollied and Solberg, *Bergenserne på Grønland*, 43, 62. One goat, five sheep and four cattle survived the journey. With hardly any grass on the Island of Hope, the colonists could not feed the animals, and Egede concluded that they could not keep livestock until they moved to a more fertile area. Sollied and Solberg, *Bergenserne på Grønland*, 71.

[40] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 21.

[41] In the letter of 18 June 1722, Egede asked the Bergen Company to send a log house for the colonists to live in. It was delivered in the late spring or summer 1723. Egede states in a letter of 1 August 1723 that the house is not fit to live in but is used as a storage house. Sollied and Solberg, *Bergenserne på Grønland*, 31, 42, 74. A Norwegian log house which was used for the trade is mentioned in Egede's description of the second colony, Godthåp, and this is probably the same house. Hans Reynolds, *Grønland. Vestre bygdi* (Oslo: Aschehoug, 1926), 180.

[42] Paul was born 9 October 1708, Niels 1710, Kirstine 1714, and Petronelle 8 November 1716. J. C. Joensen, "Lidt om Familien Egedes Efterkommere i Grønland," *Personalhistorisk tidsskrift* 3, no. 3 (1894): 71–76.

[43] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 18–22.

[44] Ostermann, "Den første danske undersøgelsesekspedition til Diskobugt," 164; Egede, *Relationer fra Grønland*, 121; see biography in Sollied and Solberg, *Bergenserne på Grønland*, 274.

unspecified "others"),[45] from which a small chamber for assistant priest Albert Top had been divided,[46] and a larger room for the lower ranking colony members.[47] In addition to the colonists, some Inuit children lived with the Egede family. Two of these, Navia and Kusach, are referred to as "Greenlander disciples," and a young man named Kojuch is referred to as Egede's servant.[48] In autumn 1723, three young Inuit boys who were being taught to read are mentioned as living in the colony; one of them was ten- or twelve-year-old Pápa, who moved in as Egede's foster son after both his parents died.[49]

In 1727 the house was described as leaky and rotten, and so damp that the colonists' clothes rotted where they hung on the pegs.[50] Egede, commissary Petterssøn, trader Geelmuyden, and assistant Jürgen Kopper asserted in a signed statement that the house was not likely to remain standing for more than another year.

Commissary Pettersøn listed the furniture in the house as being three cupboards, five beds, two small writing desks, two tables, and some small benches.[51] The Egede family had three of the beds: one for Hans and Gertrud, one for the son's Paul and Niels, and one for the daughters Kirstine and Petronelle. We can assume that at least one of the three cupboards and one of the two writing desks were Egede's. Pettersøn mentions another table privately owned by Egede[52]

Material conditions in the Colony of Hope

In this environment keeping the alchemical fire constant was not Egede's only worry. The colonists' mere survival was a daily struggle, and many of Egede's journal entries concern the hunting and fishing for food. Immediately on their arrival the colonists discovered that their equipment was not suitable for the conditions in Greenland. The range of their guns was much shorter than that of the bows and arrows of the Inuits, and Egede expressed regrets that they could not get close enough to shoot birds and animals. Unlike the Inuits' easily maneuvreable kayaks of seal skin, the colonists' boats were not fit for fishing or whaling, and they had no yarns for catching seal.[53] Egede later made efforts to plant grain, herbs, cabbage, and turnips, which met with meagre success.[54] Reports of the amputation of toes black from cold, liquor frozen to ice, and a calf frozen to death in its box provide testimonies of harsh conditions.[55]

[45] Who the "others" in Geelmuyden's room were, is not specified, but a possible candidate is his assistant, Matthias Andersen Herslef. Ostermann: "Den første danske undersøgelsesekspedition til Diskobugt," 164.
[46] Egede, *Relationer fra Grønland*, 87.
[47] Ostermann, *Nordmænd paa Grønland 1721–1814*, vol. 1, 33.
[48] Egede, *Relationer fra Grønland*, 58–59, 62.
[49] Egede, *Relationer fra Grønland*, 105, 109. See also 157–158.
[50] Ostermann, *Nordmænd paa Grønland*, vol. 1, 34.
[51] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 21.
[52] Egede, *Relationer fra Grønland*, 15, 23, 33–34.
[53] Egede, *Relationer fra Grønland*, 124, 128, 131, 145.
[54] Egede, *Relationer fra Grønland*, 179, 181, 232, 263.
[55] Ostermann, *Nordmænd paa Grønland*, vol. 1, 33.

Painting of Egede's house by Aron of Kangeq (1822–1869). The text says: "Tusilartoq's son, Ignatius, kills Priest H. Egedes dog by breaking its jaw, after it attacked him. The dog was kept to keep thieves away."[56] Reproduced by permission from the Ethnographic Collection, Museum of Cultural History in Oslo.

Supplies were delivered either by the Bergen Company's supply ship or a foreign, typically Dutch, trader or whaler. Each journey took from a few weeks to two months and could not be made during winter. There was always a risk that a ship was lost, or the route blocked by ice. Egede's journals describe the anxious waiting for ships carrying supplies, and fear of their shipwreck.[57] Paul Egede, the eldest of the Egede children, recounted how in 1725 "rough meal porridge" was their only food "morning, mid-day, and evening" for almost a year, and how in a song the Inuits mocked it as "thick soup with skin" and their ship biscuits as "dried earth from their [i.e. the colonists'] own land."[58] In 1726, the year before the fatal experiment, the colonists were near starvation, as one supply ship was lost and another delayed. With no lead or gunpowder left, they could not hunt.[59] Paul wrote: "Our food was mostly seal meat; this was poor food that gave no strength, so our people could not sustain rowing for 1 hour, but almost dropped

[56] Translation from Greenlandic by Qivioq Løvstrøm, Aká Bendtsen, and Randi Sørensen Johansen, Ilisimatusarfik – University of Greenland.

[57] Egede, *Relationer fra Grønland*, 24, 27–28, 79, 185–188, 259, 265.

[58] Paul Egede, *Efterretninger om Grønland: uddragne af en journal holden fra 1721 til 1788* (Copenhagen: Det kongelige Waisenhuses Bogtrykkerie, 1788), 6. See Sollied and Solberg, *Bergenserne på Grønland*, 303 for a list of foods usually eaten by the colonists.

[59] Egede, *Relationer fra Grønland*, 187–188.

the oars out of their hands." To try to remedy the situation, Hans Egede travelled fifty kilometres further north to buy food from Dutch traders; at the same time he also sent nine colonists home with the Dutch ship to reduce the number of mouths. The help received from the Dutch was however so little that eight men had to share the ration of one; the little grain that they were able to add to their seal soup was weighed up with silver scales. In his account, Paul fondly remembered the first breakfast after a ship from Bergen finally arrived as consisting of enough bread for a whole year.[60]

Scurvy posed a constant threat, and Egede reported the deaths of many colonists from scurvy throughout the years in Greenland.[61] During the winter of 1728–1729 so many were ill that it was not possible to get necessary domestic work done, and all the horses died from neglect. Forty people died in the colony that winter.[62] Egede himself was not spared from ill health. The trader Mathis Jochimssøn, who came to Greenland to search for minerals in 1732, reported that Egede was very sick with cold and chest disease because of his constant travels in Greenland during the winter, and Gertrud in poor health from over-work.[63]

The constantly precarious economy of the mission project also forms an important part of the backdrop for Egede's alchemical studies and practice in Greenland. Trade with the Inuits was originally expected to provide the economic basis for the colony, but on arrival in Greenland, Egede discovered that the Inuits were unwilling to trade as they had already established relations with Dutch traders who carried the goods they wanted.[64] Even after Egede arranged for goods that were in demand among the Inuits, such as pins and flower-patterned shirts,[65] Dutch traders and whalers remained a problem. In June 1724, Egede proposed to King Frederik that the foreign trade must be stopped and the Inuits "submitted to yoke and contribution," i.e. taxed.[66] In addition to the failed trade, very little money was coming from investors and from a lottery in Bergen for which Egede had had high hopes.[67]

It is hard to imagine conditions any less favourable to alchemical practice than Egede's working conditions in the Colony of Hope. But were there also aspects of the environment in Greenland and elements in Egede's specific situation in the colony that were advantageous to him as an alchemist? In what follows I attempt to outline a picture of the ways Egede's environment in Greenland affected his alchemical work.

[60] Paul Egede, *Efterretninger om Grønland*, 31–33.
[61] Egede, *Relationer fra Grønland*, 113, 160, 212–214, 217, 222, 225, 245, 343.
[62] Egede, *Relationer fra Grønland*, 222, 225. While the colonists relied on beer and plums to prevent scurvy, the Inuits ate seaweed and the stomach contents of land animals for the same purpose. Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 42.
[63] Reynolds, *Grønland. Vestre bygdi*, 180. Sollied and Solberg, *Bergenserne på Grønland*, 307.
[64] Egede, *Relationer fra Grønland*, 11–12, 24–25, 35, 51; Letter from Hans Egede to the Bergen Company 18 June 1722, in Sollied and Solberg, *Bergenserne på Grønland*, 25–29.
[65] Egede reported in 1723 that he bought 20 small cod for a pin. Egede, *Relationer fra Grønland*, 96. A letter from Egede to the Bergen Company 5 July 1522 lists trade goods that are sought after by the Inuits. Sollied and Solberg, *Bergenserne på Grønland,* 35.
[66] Egede, *Relationer fra Grønland*, 91; Sollied and Solberg, *Bergenserne på Grønland,* 112–113.
[67] Egede, *Relationer fra Grønland*, 125.

Metallurgy, medicine, and alchemical practice in the Colony of Hope

As mentioned above, we know that the substances used by Egede in his experiments were antimony (i.e. stibnite), iron, copper, and gold. Even if he did not arrive in Greenland with the intention of practicing alchemy, it is not unlikely that he had most of the substances he needed with him. The search for precious metals and minerals formed an important part of his mission since the possibility of finding such valuable resources in Greenland contributed to the interest in its re-colonisation.[68] Egede recounts that in 1636, two ships had brought yellow sand to Copenhagen from Greenland. As it was found to be worthless most of it was dumped in the sea. Sometime later, an "Artist" succeeded in extracting gold from some of the remaining sand, but in the meantime, the captain who had brought the sand had died "from Chagrin" because of his failed enterprise, and no one knew where he had found it.[69] There were thus hopes that gold might be found in Greenland. In addition, medieval sources, such as the thirteenth-century text *Konungs skuggsjá* (*King's Mirror*), had mentioned "red, blue and green speckled marble" in Greenland,[70] and this was repeated in Peder Claussøn Friis' widely read *Norigs beskrifvelse* (*Description of Norway*, 1632).[71]

The Bergen Company considered metals and minerals from Greenland a possible source of income that would supplement trade and whaling. In April 1723, the Company promised a reward to any colonist who could find silver or gold.[72] In a letter three years later, the Company expressed the hope that Austerbygd (the old Eastern settlement) could be found, as it was expected that there would be valuable minerals there.[73] On lists of goods that they wanted sent home from Greenland, minerals are prominent: a list written in May 1726 includes "some samples of that stone that can be cut like wood;"[74] "some pieces of soapstone, and these samples must be as large as they can be had, because they shall be sent down to the King, and also some pieces of pumice;"[75] "not to forget minerals of any kind that can be found;"[76] "especially of the colour that they found last year, and also of the white sand that they found on their way on the journey to Nepisene;"[77] and "other curiosities" ("andre Couriusiteter") such as "trees from which it is

[68] Egede, *Relationer fra Grønland*, 13–14.
[69] Egede, *Relationer fra Grønland*, 322.
[70] *Kongespeilet*, trans. A.W. Brøgger (Oslo: Aschehoug, 1947), 58.
[71] Friis, *Norriges oc omliggende øers sandfærdige bescriffvelse*, 175.
[72] Sollied and Solberg, *Bergenserne på Grønland*, 43.
[73] Sollied and Solberg, *Bergenserne på Grønland*, 152, 160, 162, 168.
[74] "nogen prøver af dend Steen som lader sig schiærre som tre," Sollied and Solberg, *Bergenserne på Grønland,* 164.
[75] "nogle stycher talgsteen og weigsteen, og maa disse prøver være saa stoere som de kand faaes, thj de schall needsendes til Kongen, saa og nogle pimpesteene," Sollied and Solberg, *Bergenserne på Grønland,* 165, see also 92.
[76] "Mineralier af hvad Sort som kand overkommis jche at forgjætte," Sollied and Solberg, *Bergenserne på Grønland,* 165.
[77] "J Synderlighed af dend Farve som de fandt forleeden Aar, saa og af dend hviide sand som de fandt underwejs paa Reisen til Nepisene," Sollied and Solberg, *Bergenserne på Grønland,* 165.

believed that mallards are generated."[78] In 1730, Egede reports having found and examined some "fire-yellow" sand with vermillion veins,[79] but with negative results: "I have with the little Experience that I have in Chymistry, tried by Extraction and Precipitation to bring something out from it but have found nothing." He also found a red crystal which contained "some Particulae Solis [particles of gold], which can not be brought out except by a Spagyric Art."[80]

While the search for metals and minerals took up a considerable part of Egede's time, this part of his duties as head of the colony posed the advantage that he had access to substances and chemicals necessary for alchemical experiments. Antimony, iron, and copper, all used in Egede's alchemical experiment, were central in the purification of gold and would most likely have been important in the metallurgic work associated with the search for gold. It is therefore likely that he had with him a supply of antimony as well as other substances for the purification of gold and other metallurgical processes. The method of purifying gold by means of antimony was mentioned by Becher in *Oedipus Chymicus*, one of Egede's main sources to alchemical knowledge.[81]

The gold used in Egede's experiment may have been a gold coin. The use of a gold coin in an alchemical process is mentioned in Becher's *Chymischer Rosen-Garten*, one of the alchemical works that Egede read.[82]

As Furuset has pointed out, base metal that could be transmuted into gold once the Philosophers' Stone had been made, was readily available in the colony in the form of lead intended for casting bullets. Warnings of "savages" that had attacked Dutch whalers had convinced the colonists that they needed large amounts of weapons, gunpowder, and lead. Many lead bullets, as well as soapstone casts for further production, have been found on the site of the colony.[83] Egede, however, had few conflicts with Inuits, and no need to use bullets against them.

It is thus likely that supplies of all or most of the ingredients necessary for alchemical experiments were readily available to Egede in the colony. Moreover, substances needed for alchemical practice could be ordered by Egede quite inconspicuously, as he needed the same substances for metallurgical work.

As for alchemical equipment, to perform the experiment Egede described, he needed a crucible for purifying the antimony. He further describes allegorically how he mixed the purified antimony with gold in a glass vial or "a glorious crystalline bridal chamber" ("et herlig Christalliniske Brude-Kammer") which was thereafter sealed by melting the opening shut and left to "digest" over a temperate

[78] "træer hvoraf der bliver presumerit at stock Ender skulle genereris," Sollied and Solberg, *Bergenserne på Grønland*, 165.
[79] Egede, *Relationer fra Grønland*, 230, 326.
[80] Egede, *Relationer fra Grønland*, 329.
[81] Johann Joachim Becher, *Oedipus Chymicus seu institutiones chymicæ* (Frankfurt am Main: Joh. Maximilianum van Sande, 1716), 195–197. The process is described in Principe, *Secrets of Alchemy*, 146. Foil of copper and brass used for metallurgical work have also been found on the site. Gulløv and Kapel, *Haabetz Colonie 1721–1728*, 61.
[82] *Johann Joachim Bechers Chymischer Rosen-Garten*, 87.
[83] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 42–43, 50.

heat. He also used a crucible for melting the inert, black substance in the attempt to regain his gold after the aborted experiment. Egede's report does not mention the source of his alchemical equipment and he does not provide descriptions of any equipment apart from mentioning the "glass" or "bridal chamber." Both textual and archaelogical evidence, however, suggest that some of his alchemical vessels were made on site from local resources. In the *Perlustration*, Egede reported that he had found a large deposit of soapstone, describing it as a material that "withstands the strongest Fire, so that also Crucibles for melting Metal can be made from it."[84] As the Inuits are not known to have melted metals, but used soapstone for making lamps and cooking pots, it is likely that Egede is here referring to his own use of soapstone crucibles in alchemical and metallurgical work. During an archaeological excavation in 1969–1970 remains of a pear-shaped crucible made of soapstone, with a flat standing base, and with visible signs of having been exposed to strong heat, was uncovered on the site of the Egede family's room. Fragments of a triangular, beaker-like crucible made of clay was also found in the dwelling house. Triangular, funnel-shaped crucibles of the Hessian type made from local soapstone were found all over the floor in the smithy, suggesting that metallurgical work was carried out there.[85] In addition, many shards of bottles of the type used for chemicals or medicines have been found on the site of the colony.[86] Paul Egede mentions that silver scales were used for weighing rations of grains during a period with little food; these were assumingly mainly used for metallurgy and possibly the production of medicines but may also have been used in alchemical operations.[87]

Egede had not initially taken distilling equipment with him to Greenland. This he soon regretted, as he shortly after arrival found scurvy-grass, with which he could have made medicine against scurvy: "It was a pity that we did not think to bring a small Distilling-Pot, since one does not know any other way of making use of it [i.e. scurvy-grass] in the winter."[88] He must later have had distilling equipment sent to Greenland, as he in the *Perlustration* relates that he found wild rosemary which made "excellent medicine" when distilled,[89] and the Bergen Company later ordered Egede to send distilled scurvy-grass from Greenland.[90] Egede does not mention distillation as being a part of the experiment that he has recorded, but it is still possible that the aforementioned distilling pot was useful for alchemical experiments. In his account of his first attempts at alchemy, he distinguishes between "Chymistry" ("Chymien") and "the Art of Melting" ("Smelte-Konsten"), writing:

[84] Egede, *Relationer fra Grønland*, 329. The find was first described in a letter to the Bergen Company in 1722. Sollied and Solberg, *Bergenserne på Grønland*, 32.

[85] Gulløv and Kapel, *Haabetz Colonie 1721–1728*, 94–95. See page 96 for a photo of the soapstone crucible remains found in the dwelling house.

[86] Gulløv and Kapel, *Haabetz Colonie 1721–1728*, 78.

[87] Paul Egede, *Efterretninger om Grønland*, 31–33.

[88] Egede, *Relationer fra Grønland*, 32.

[89] Egede, *Relationer fra Grønland*, 326. Two letters from the Bergen Company in 1726 ask Egede to send "a barrelful or more" of "that herb that is commonly used as Tea […] and grows like a Rosemary." Sollied and Solberg, *Bergenserne på Grønland*, 164, 169.

[90] Sollied and Solberg, *Bergenserne på Grønland*, 164.

"But as I was quite inexperienced in Chymistry as well as in the Art of Melting many glasses were lost from carelessness, which is why I made the acquaintance of a certain apothecary to learn some Chymical Techniques from him."[91] This suggests that it was distillation that he was taught by the apothecary and that this was a technique that he used in his alchemical experiments in Bergen.

As he was also in charge of keeping and overseeing the use of medicines and medical supplies, Egede had access to medicines and possibly chemicals used in medicine. These may have included antimony, which was commonly used in the Paracelsian medicine of the period. By royal order as set out in the colony rules of February 1723, all medicines had to be under lock and key at all times, and the key kept by the colony's highest officer, i.e. Egede. Whenever the barber (i.e. surgeon) needed medicines to treat a patient, he was to be given only the exact amount needed for that single occasion, and Egede was to keep a written account of all medicine use.[92]

After the fatal experiment in 1727, Egede himself treated the poisoned family members with theriac. That Egede had some knowledge of medicine also appears from a letter sent to the Bergen Company in connection with an expedition in June 1724, to Nepisene (Nipisat island, south of Holsteinsborg)[93] to hunt whales and try to take over from the Dutch the trade with the Inuits in that area, in which the colony's surgeon partook. In this letter, Egede offered to take on partial responsibility for the colony's medical needs while the surgeon was away, if the Bergen Company would provide the necessary supplies.[94] The tasks that Egede here offered to perform may have included the distillation of medicines. The colony was equipped to distil medicines for its own use, and Egede praised "the beautiful Cochleare [i.e. Cochlearia groenlandica, Greenland scurvy-grass], which here grows in great quantities by the Houses of the Savages, and is a better Preservative against Scurvy, than all the Pharmacies in Europe."[95] When the Bergen Company ordered Egede to send distilled scurvy-grass, they, however, instructed him to have the barber distill it,[96] suggesting that distilling medicines was not usually among Egede's tasks although with his knowledge of chemical procedures, he most certainly could have performed this operation himself. His responsibilities both within metallurgy and medicine thus meant that he had access to substances needed for his experiments and also made possible the inconspicuous possession and acquisition of alchemical supplies.

[91] "Men som jeg var gandske uforfaren i Chymien, saavel som Smelte-Konsten, gik mange Glas af Uforsigtighed for mig i Løbet; hvorfore jeg giorde mig bekiendt med en vis Apotheker, for af ham at lære nogle Chymiske Haandgreb." Egede, *Relationer fra Grønland*, 194.
[92] Sollied and Solberg, *Bergenserne på Grønland*, 195.
[93] Sollied and Solberg, *Bergenserne på Grønland*, 315.
[94] Sollied and Solberg, *Bergenserne på Grønland*, 116–117.
[95] Egede, *Relationer fra Grønland*, 32. The colony also produced "Cochlearia wine" to send to Bergen. Sollied and Solberg, *Bergenserne på Grønland*, 31, 35.
[96] Sollied and Solberg, *Bergenserne på Grønland*, 164.

Supplies of equipment for the practice of alchemy were thus available to Egede and could be acquired by him inconspicuously. Crucibles for metallurgy were made from materials found locally and could also be used for alchemical work, and distilling equipment and glass vials that could withstand heat were also available as they were needed for distilling medicines.

Another essential resource for alchemical practice was fuel for the fire. Scarcity of firewood was, however, one of the greatest and most often recurring difficulties that the colonists faced in Greenland. This may also have affected Egede's possibilities of performing frequent alchemical experiments. Firewood represented a considerable expense for alchemists everywhere; a main reason why alchemy was not for the poor, was the need for large amounts of fuel to keep the alchemical ingredients heated over long periods. In Greenland, the scarcity of firewood was Egede's constant worry.[97] Immediately on arrival on the Island of Hope in July 1721, the colonists discovered that the damp climate made drying peat for fuel impossible, and Egede wrote to the Bergen Company asking them to ship firewood to the colony.[98] There were very few trees growing in Greenland, and the colonists had to depend on driftwood for heating, baking, cooking, and brewing.[99] Among the small islands and rocks in the area around the Colony of Hope, there was enough driftwood for the Inuits, who used seal and whale oil for their lamps and cooking,[100] but the colonists had a greater need for fuel. Commissary Pederssøn listed three tile stoves, a brewer boiler, and a baking oven, the latter connected with a fireplace inside the "folks"' room.[101] Letters and reports from the colony testify to their frequent lack of firewood. Assistant priest Albert Top wrote to the Bergen Company in July 1724 that an expedition in Nepisene lacked fuel because no driftwood could be found.[102] In December 1728 lack of firewood prohibited beer-brewing in the colony.[103] On at least one occasion colonists, contrary to Egede's strict orders, stole wooden parts of the Inuits' houses to use as firewood.[104]

When the Bergen Company announced a reward to anyone who could find gold or silver in Greenland, it promised the same to whomever could locate a forest.[105] Egede's response was that he very much doubted that it would be possible to find a forest in Greenland, since he had never seen any trees there apart from small thickets of two or three metres' height. In any case, he added, the colony could not spare any boats for such a search, as they were all needed

[97] Egede, *Relationer fra Grønland*, 104, 160, 226
[98] Letter to the Bergen Company 15 July 1721. Sollied and Solberg, *Bergenserne på Grønland*, 16.
[99] Egede, *Relationer fra Grønland*, 104.
[100] Egede, *Relationer fra Grønland*, 35.
[101] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 21, 30; Sollied and Solberg, *Bergenserne på Grønland*, 303.
[102] Sollied and Solberg, *Bergenserne på Grønland*, 123.
[103] Egede, *Relationer fra Grønland*, 214.
[104] Egede, *Relationer fra Grønland*, 104.
[105] Letter from the Bergen Company to the council in Greenland 19 April 1723, in Sollied and Solberg, *Bergenserne på Grønland*, 43.

to gather driftwood.[106] Already the following day Egede wrote another letter, asking the Company to send firewood from Bergen, as there was no more driftwood to be found.[107]

Because of the high costs of regularly transporting firewood to Greenland, the Bergen Company in 1724 ordered captain Claus Hartz to sail to America to find and bring back firewood for the colony, as well as timber for house building. Egede thought the latter unnecessary and told the Bergen Company that the colony could use peat and stone for house building, as they had already done when they built their main house.[108] Egede suggested that the Bergen Company should send coal instead:

> For the continuous brewing and baking a lot of wood is consumed, of which we are in great need since not enough Forest can be found in this Land […] [I]t would be best if one could send coal for cooking and brewing, if we could also have some instruction in how to handle it.[109]

The coal that they had hitherto been sent was strictly reserved for the smithy.

Both wood and coal were used by alchemists, for instance the English sixteenth-century alchemist Thomas Charnock wrote about the great expense represented by "Tallow, Candle, Wood, Coale and Fire."[110] Possibly Egede hoped to have some coal for his alchemical experiments as well as for the cooking and brewing. His request for instructions on the use of coal, however, suggests that he was not familiar with this type of fuel and had not yet used it in his alchemical practice. There is no sign in later correspondence that the Bergen Company ever sent any of the requested coal, and gathering driftwood is still referred to as a main daily task of the colonists the following year.[111] The colonists did discover coal near Disko Bay north of the colony, but amassed ice prevented them from landing there, and the coal was also so high up in the mountain that they could not have managed to load it onto a ship.[112] According to commissary Pederssøn's report, the use of coal was still reserved for the forge in 1727.[113] Although it is not impossible that Egede also secured some coal for his own use in alchemy, the available evidence thus suggests that he relied on driftwood in his alchemical practice, supplemented by firewood sent from Bergen. The scarcity of wood may have contributed to limiting the number of experiments that Egede was able to perform while in Greenland.

[106] Letter from Egede to the Bergen Company 31 July 1723, in Sollied and Solberg, *Bergenserne på Grønland*, 65.
[107] Sollied and Solberg, *Bergenserne på Grønland*, 75.
[108] Sollied and Solberg, *Bergenserne på Grønland*, 245; Egede, *Relationer fra Grønland*, 127–129.
[109] Sollied and Solberg, *Bergenserne på Grønland*, 106.
[110] Thomas Charnock, "The Breviary of Naturall Philosophy," in *Theatrum Chemicum Britannicum*, ed. Elias Ashmole (Montana: Kessinger Publishing Company, undated facsimile. Orig. publ. 1652), 291–304, 295. Another Englishman, Edward Kelly (1555–1597) also mentions coal as a great expense for alchemists. "Sir Edward Kelle's Worke," in Ashmole, *Theatrum Chemicum Britannicum*, 324–331, 324.
[111] Sollied and Solberg, *Bergenserne på Grønland*, 135.
[112] Sollied and Solberg, *Bergenserne på Grønland*, 68, 123.
[113] Gulløv and Kapel, *Håbets koloni – Hans Egedes første syv år på Grønland*, 40–41.

A solitary alchemist

Egede was an almost completely self-taught alchemist, having never had the advantage of the guided hands-on training under the supervision of a master alchemist that formed the traditional introduction to the alchemical arts. In his report to the Mission College he explains that he chose to study and experiment by himself in Bergen, in spite of difficulties understanding the alchemical texts: afraid to let it be known that he was interested in gold-making, he did not dare ask anybody for advice. Greenland provided privacy from those whose judgement he feared. Here he could perform his experiments in peace, far away from peers and institutions that might condemn his activities as "ungodly."

Despite his relative solitude, he may still have had the practical and moral support of a few key individuals, Gertrud probably the most central among these. She and possibly also their children, as well as Inuit servants or foster children, may have assisted in tending the fire. Egede's position and authority in the colony meant that he could enlist the help of, for instance, the smith or Inuit craftsmen to produce crucibles and other alchemical vessels. Archaelogical evidence that metallurgic operations were performed in the family's room, however, suggests that the preparation of prime matter for alchemical experiments was done by Egede himself. Despite the fact that several Norwegian apothecaries are known to have been metallurgic alchemists, no indication has been found in Egede's report or other textual evidence that the barber-surgeons of the Colony of Hope were interested in gold-making. Even though it is likely that at least some of the colonists knew that Egede was performing alchemical experiments, there is as yet no indication that Egede had a fellow alchemist among the colonists.

Through his practice, observations, and reading, Egede is however linked to other alchemists in the European alchemical tradition of his past and present; awareness of this is expressed in the "dream fable" in which he addresses contemporary alchemists that may happen to read the report.

In Egede's family's room was also his collection of alchemical books. He recounts how guided by the recommendations in Ole Borch's *Conspectus scriptorum chemicorum celebriorum* (*Overview of Famous Chemical Texts*, 1696), which is a bibliography containing descriptions of more than eighty alchemical works dating from Antiquity to Borch's time, he ordered books sent to the colony. This book collection eventually comprised more than sixty authors, and it has been suggested that the remote Colony of Hope thus had the largest alchemical library in Norway.[114] The number of alchemical books that Egede had in his possession while in Greenland certainly far exceeded that of any of the collections listed in Gina Dahl's inventories of clerics's libraries in Norway.[115]

Ole Borch was a respected scientist and the first to lecture on chemistry at the University of Copenhagen. He was a central proponent of Paracelsianism in Denmark, and through his *Conspectus* Egede made the acquaintance of many Paracelsian

[114] Hiortdahl, "Bidrag til kemiens historie i Norge," 340.
[115] Gina Dahl, *Book Collections of Clerics in Norway, 1650–1750* (Leiden: Brill 2010).

works which he ordered sent to the colony. The other work emphasised by Egede as central to the alchemical knowledge that he gained in Greenland was the previously mentioned *Oedipus Chymicus* by Johann Joachim Becher. It was after reading this that Egede felt that he understood enough to "lead […] Theoriam to Praxin"[116] and set up his laboratory.

We can imagine him at his desk after long days of travelling, preaching and teaching, exploring Greenland's nature and geography and the Inuit culture for his great natural-historical work, organising expeditions to search for food, minerals and the lost Eastern settlement, and overseeing the trade efforts, and in the late evenings after all reports and church book entries were written, studying alchemical texts "with the greatest Diligence and Thoughtfulness" in the light of a burning wick – perhaps in blubber oil. Whereas candles were expensive in the 1700s, Egede's description of Inuit houses as lit and heated by many oil lamps with wicks of moss indicates that oil for reading light was accessible and relatively inexpensive in Greenland.[117] Paul Egede mentions blubber lamps as used in the "folks'" room.[118] Raw blubber from whale and seal was a staple food for the Inuits, they used it for fuel for lamps and cooking, and it was a main trade item.[119] From 1730 onwards they also paid tax with blubber.[120] Although blubber does not seem to have formed a part of the colonists' diet, in which dry bread and peas were the basis,[121] it may have provided Egede with cheap lamp oil for long evenings of reading alchemical texts.

Egede's work as an alchemist in the Colony of Hope took shape under unusually harsh conditions. In addition to the challenges posed by the climate and geography of Greenland, there were food shortages, often illness, and hard and long workdays. Large parts of his time Egede spent travelling, both to preach to the nomadic Inuits and to explore and investigate the natural history of Greenland. Being head of the colony, he was responsible for the search for metals and minerals and for the trade efforts, in addition to his daily duties as the colony's priest and judge. Egede moreover had never had the advantage of alchemical training in a laboratory and had probably never had any contact with other alchemists.

Still the greatest obstacle posed by the material circumstances in the Colony of Hope against Egede's alchemical activities was perhaps the shortage of firewood. This challenge was one that Egede shared not only with the colony in general, but also with alchemists elsewhere. The great expense of fuel is mentioned in several alchemical texts; but for Egede the main problem was not the cost but the fact that there was not enough firewood to be bought nor found in Greenland.

[116] Egede, *Relationer fra Grønland*, 194–195.
[117] Egede, *Relationer fra Grønland*, 12.
[118] Paul Egede, *Efterretninger om Grønland*, 6.
[119] See for instance Egede, *Relationer fra Grønland*, 96.
[120] Egede, *Relationer fra Grønland*, 154, 241.
[121] Sollied and Solberg, *Bergenserne på Grønland*, 303.

It is difficult to imagine a situation less condusive to alchemical practice. However, as has appeared in this study, there were also aspects of Egede's situation in the colony that facilitated his alchemical work. Greenland had natural resources that were useful to the alchemist. The area was rich in soapstone, from which crucibles were made. Possibly crucibles were also made from local clay. But the most important advantages to Egede's alchemical work in the colony followed from his social position in the colony, which gave access to alchemical substances and equipment. The disadvantage posed by his lack of instruction and support from fellow alchemists was not originally imposed on him by Greenland's isolated geography, but by fear of discovery and subsequent judgment from his peers. The remoteness of the Colony of Hope offered a safe distance from these. This and the access to substances and equipment needed for experiments may have contributed to encourage Egede's return to his alchemical practice, which he had earlier vowed never to "bother his brain" with again. In this way rather than representing an obstacle, the situation in the Colony of Hope may have contributed to establishing alchemy's central place in Egede's life.

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