MINING THE CONNECTIONS BETWEEN FALU GRUVA AND EMANUEL SWEDENBORG

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Emanuel Swedenborg is known for his significant contributions to both the natural sciences and theology. In 1744, at age 56, Swedenborg experienced a religious crisis causing him to lay aside his science career and devote himself to theology and to becoming a "humble servant of the Lord Jesus Christ." His extensive religious writings posthumously inspired some of his readers to create their own sect, which is today a small worldwide church. Though Swedenborg's life is often split into two distinct scientific and theological periods, his early ekphrastic poems "In Fabros qvi majors ferri massas formant" ("on the smiths that form large masses of iron") and "In Fodinam Fhalunensem" ("On the mine in Falun") reveals interdependence between his science and theology.[1] The purpose of this essay is to highlight the important role that poetry played for Swedenborg as a medium which could communicate about the intersections of science and theology.

Relatively little research has analyzed Swedenborg's fifteen year poetic period, which ran parallel to his early scientific pursuits. Hans Helander, Professor of Latin at the University of Uppsala, contributed significantly to understanding the importance of Swedenborg's poetry when he translated Swedenborg's poetry into English from the Neo-Latin. His translations have now made Swedenborg's poetic interpretations accessible and reveal Swedenborg's work as "clearly conditioned by their time and literary conventions."[2] Classical works inspired Swedenborg's poetry, and Latin poetry contextualized Swedenborg's choices of poetic language. Classical poetics would not only inspire individuals like Swedenborg, but as Marjorie Hope Nicolson—a scholar who writes on literature and science—Classical imagery laid the foundation for Romanticism: ". . . details of the Romantic mise-en-scène—mountains, caverns, cataracts, ruins, hur-

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[1] The English translations will be used in this article

[2] Emanuel Swedenborg, *Ludus Heliconius and Other Latin Poems,* ed. Hans Helander (Uppsala: Almqvist &Wiksell International, 1995), 4

ricanes, storms, volcanoes, earthquakes, had been the stock in trade of eighteenth-century descriptive poets, or that the characteristic adjectives and epithets of the Romantic poets had long been familiar: dark, gloomy, still, awful, unfathomable, ghastly, rude; magnificent, majestic, grand; glorious; terror and delight, joy and exultation."[3]

"On the Mine in Falun" was published in approximately 1716 and originally written in Neo-Latin. The poem's narrator describes in rich detail his "pleasant" descent into the great Copper Mountain and Mine at Falun, Sweden. In great sensorial detail the narrator "glides from the upper world in a bucket, brought all the way to the dark shadows of death," but moves "to and fro hanging in the middle of air," finding it "pleasant to sing holy hymns" and "weigh his poor and fragile life."[4] The narrator finds delight, a sense of joy, in knowing his life "depended on the power of a rope," and does not appear afraid to enter "the recesses of the mine" where "the band of Hades hurriedly rushes along."[5] The juxtaposition of images helps to illumine what would later be termed the sublime. As Nicholson writes, ". . . terror, in the eighteenth-century sense of the word, was an integral part of the new aesthetic experience of men who sought a new language to express their mingled feelings of joy and awe."[6] Emanuel Swedenborg employed an ekphrastic poetic style and effectively articulated the simultaneous beauty and terror of the Falun mine. Ekphrasis is "a descriptive (*periēgēmatikos*) speech which vividly (*enargōs*) brings the subject shown before the eyes."[7] Swedenborg exemplifies vivid imagery of the mine depths and exposes how descending into the Earth's depths alters sensory perception. Ruth Webb asserts, "The virtues of ekphrasis are the following: above all clarity (*saphēneia*) and the vividness (*enargeia*) which makes one almost see what is being spoken about (*ta-apangellomena*); then one should avoid speaking at great length about useless things

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[3] Majorie Hope Nicholson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite* (Seattle: University of Washington Press, 1997), 21

[4] Swedenborg, *Ludus Heliconius and other Latin poems,* 122

[5] Ibid, 122.

[6] Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite,* 21

[7] Ruth Webb, *Ekphrasis, Imagination, and Persuasion in Ancient Rhetorical Theory and Practice* (Surry: Ashgate Publishing, 2009), 198.

(*achrēsta*); in general one should fit the language (*apangelia*) to the subject (*ta hupokeimena*) . . ."[8] Swedenborg's poetry focuses on the mine in Falun and clearly and vividly conveys the complicated reception of the mines.

His use of ekphrasis also reflects the shift in the representation of mountains as depicted by Nicholson: "a century and a half ago, mountains became 'temples of Nature built by the Almighty' and 'natural cathedrals, or natural altars . . . with their clouds resting on them as the smoke of a continual sacrifice.' A century and a half earlier, however, they had been 'Nature's Shames and Ills' and 'Warts, Wens, Blisters, Impostumes' upon the otherwise fair face of Nature."[9] During his poetic period, Swedenborg was in the transitional moment between these two differing cultural interpretations of Nature. He was not divorced from the classical fears of the mountains' depths, as seen in Virgil and Dante's imagery of Hades, nor fully wedded to a belief that mountains were temples, as found in later Romantic artistry. This likely occurred because Swedenborg was part of the beginnings of scientific developments, which Nicholson argues altered interpretations of the mountains: "Theology, philosophy, geology, astronomy—basic and radical changes all occurred before the 'Mountain Gloom' gave way to 'Mountain Glory."[10] Even though Swedenborg was inspired by Latin poetics and "the Latin attitude towards mountains, however, at least among classical writers, remained almost consistently adverse," he still found the mines as a place of sacred encounter.[11]

Swedenborg was able to capture mine experience through poetic language because he had a close relationship to the Falun mine and other mines. From the beginning, Swedish mines were an integral part of Emanuel Swedenborg's life, as both of "Swedenborg's grandparents, the Swedbergs and the Behms, were stockholders in the corporation that owned and operated Falun."[12] Emanuel's early childhood years were spent at his

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[8] Ibid., 198.

[9] Majorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite*, 2

[10] Ibid., 3.

[11] Ibid., 39.

[12] Robert Kirven and Robin Larsen, "Emanuel Swedenborg: A Pictorial Biography" in , *Emanuel Swedenborg: A Continuing Vision*, edited by Robin Larsen, Stephen Larsen, James Lawrence, and William Woofenden (New York: Swedenborg Foundation, 1988), 5.

family home near Falun. Inside the home were murals depicting biblical scenes, which reflected the devout Christianity in the Swedenborg home. Emanuel's father Jesper was a professor of theology at Uppsala and later served as the Bishop of Skara, so Swedenborg was raised in a home that valued Christian theological education (with a strong Pietistical emphasis). At age eleven Emanuel Swedenborg enrolled at the University of Uppsala and began his studies. One of his professors, Olof Rudbeck of medicine and botany, "instilled a deep interest in botany and anatomy in two of his most famous students—Swedenborg and Linneaus." In addition to education in scientific knowledge, Rudbck "guided them to a fascination with what today would be called comparative religions, including the religious symbols of antiquity and the visionary imagery of indigenous healers among the Lapps."[13] Despite Swedenborg's focus on the sciences in his education, balance between studies of the sciences and humanities was valued.

After graduating, Swedenborg traveled for five years expanding his knowledge by visiting other mines and educational institutions. Upon returning he was appointed to the Swedish Board of Mines. Serving in this position Swedenborg was able to contribute to a new discourse of mineralogy and invent new technologies that assisted in mining. In addition to his inventions, Swedenborg published a massive three-volume work entitled *the Principia; or The First Principles of Natural Things*, which contained two important treatises on copper and iron. According to Ralph Waldo Emerson, Swedenborg was an example of a representative man, as "No one man is perhaps able to judge the merits of his works on so many subjects. One is glad to learn that his books on mines and metals are held in highest esteem by those who understand these matters."[14] Thus Swedenborg's career informed later generations of mineralogists and those who engaged with mining.

In her chapter "Swedenborg's Career on the Board of Mines—The World of Uses," Jane Williams-Hogan, Professor of Social Science at Bryn

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[13] Ibid., 10.

[14] Ralph Waldo Emerson, "Swedenborg; Or the Mystic" in *Representative Men: Seven Lectures*, 103.

Athyn College, suggests Swedenborg balanced intellectualism and emotional ties to individuals when he served on the Swedish Board of Mines:

> In both of these cases it would appear that Swedenborg took the human condition into account. Thus, he moved beyond the hard fact of these cases and expressed concern and compassion. It is possible to imagine Swedenborg attending sessions at the Board of Mines on a daily basis, day after day, year after year, walking first from his apartment on Gamla Stan and then later in the 1740s from his home on Hornsgatan on Södermalm through rain and snow, days of sunshine and days with overcast skies to participate in the multi-varied work of the Royal College of Mines. At the board he dealt with countless administrative details, technological breakthroughs, struggles over inheritances, and vexing disputes between individuals and officials. It would appear that while some individuals could be worn down and become cynics in such a role, Swedenborg was able to respond with both head and heart. In an environment focused on use and the public good, Swedenborg internalized a living love of use that opened him up to humbly accept the call to serve the Lord. In fact, it is possible that is was his service on the board that was the incubator of his call rather than all his intellectual striving after first things. However, once called, they too could serve.[15]

Even though Williams-Hogan provides two examples where Swedenborg carried out justice while serving on the Board of Mines and brings to the surface the potential for early spiritual formation in his life, perhaps the mines taught Swedenborg more about spiritual correspondences of the natural world than his personal call to service in administrative work. In his later theological writing, Swedenborg did refer to himself as a humble servant of the Lord Jesus Christ, but in his scientific works there is no declaration of servanthood. Instead of seeing himself as a scientific servant, Swedenborg was more likely to see himself as a scientific messenger, as demonstrated in his *Treatise on Copper*, where he ". . . set forth the

[15] Jane Williams-Hogan, "Swedenborg's Career on the Board of Mines: The World of Uses," *The New Philosophy* 113(2010): 1–2. 981–1015.

produce of these mines for the years 1711 to 1724, to enable the wonderful phenomena of nature existing in the subterranean kingdom to be observed more clearly."[16] Swedenborg wanted to make the work he did accessible. He had a desire to improve rational scientific understanding of the universe and even challenged important figures like Newton when naming his first volume *the Principia*—a direct counterpoint to Newton's groundbreaking work *Mathematical Principles of Natural Philosophy.* Swedenborg did what he set out to do in his work, but he also knew it was "an arduous attempt to explain philosophically the hitherto secret operations of elemental nature, far removed as they are, and almost hidden from our view."[17] The subterranean kingdoms remained difficult to grasp and were often equated to Hell, but as scientific innovations were made realizations occurred. The subterranean kingdoms could be explored and exploited for their natural riches. Swedenborg acknowledged the difficulty of comprehending the natural world, but he did not back down, "in making the attempt, however, I must endeavor to place, as it were, before the eyes, those phenomena which nature herself is careful to conceal, and of which she seems most adverse to the investigation."[18] Sight proved important for Swedenborg who used sight in both his scientific and theological work. As a natural philosopher Swedenborg published *Economy of the Animal Kingdom,* which systematically analyzed the importance of the body and its relationships to the natural world via sensory perception. Swedenborg expanded *Economy of the Animal Kingdom* into his larger work *Animal Kingdom,* which sought to correct "superficiality" to his recent inquiries. He felt a much more detailed investigation of the body was needed to identify the seat of the soul. Later, as he wrote theology, Swedenborg continued to use sight and sound imagery that he had investigated during his days as a natural philosopher. Nicholson explains why there was a shift to a sense of awe with sight: "An interregnum was

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[16] Emanuel Swedenborg, *Opera Philosophica et Minerali (Treatise on Copper),* Volume 3, Trans. Arthur Hodson Searle (London: Swedenborg Society and British Non-Ferrous Metals Research Association, 1938), ix.

[17] Emanuel Swedenborg, *The Principia, or, The First Principles of Natural Things : to which are added the Minor Principia and Summary of the Principia*, vol. 1, trans. by James R. Rendell and Isaiah Tansley (London: Swedenborg Society, 1912), 4.

[18] Ibid.

necessary between neoclassicism and Romanticism, a period when men were learning to see. Visual qualities were emphasized. Imagination was learning to 'feel through the eyes."[19] Swedenborg was located in between shifts in these cultural epistemes, a liminal space, where there was a dramatic shift in how individuals would understand and value sight. Furthermore, Swedenborg's ekphrases about the mines could be said to have profound significance in Swedenborg's work, as mines alter one's sensory perceptions, especially sight.

Over this time period, Swedenborg explored his new understandings through a variety of publications and exhibited his immense knowledge of subjects like astronomy (within which he developed a nebular hypothesis), and inventing various new technologies. Despite the scientific nature of "On Copper," Swedenborg mentions at the beginning of his third volume that a Biblical flood was the reason for treasures within the mountains being revealed to humans:

> From these considerations it may also be concluded that the flood itself was a provision of the Divine Providence, that whatever the earth had concealed in its innermost recesses, and had acquired through a long course of time and manifold vicissitudes, it might, in this manner, offer up for the enjoyment of mortals: this, it seems, could not have been done unless the terraqueous globe had undergone this fate of disintegration and likewise being covered by this overwhelming flood.[20]

As a scientist, Swedenborg could have departed from a traditional religious understanding of world's creation, but in his understanding mines are not limited to their scientific and economic use. They are deeply embedded within his religious understandings of how the world came into being—in this case Divine Providence. Furthermore, some of the mines Swedenborg mentions in his writing had names like The Crown of Prince's, God's Will, God's Blessing, God's Help in Need, and New Luck,

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[19] Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite,* 25.

[20] Emanuel Swedenborg, *Opera Philosophica et Minerali (Treatise on Copper),* Volume 3, Trans. Arthur Hodson Searle (London: Swedenborg Society and British Non-Ferrous Metals Research Association, 1938), xiii.

which shows how mines were not viewed as separate from religious understandings of the time. Sweden was Christianized in the 11th century and during the 16th century the Lutheran church of Sweden had become the state church. Individuals in power held positive outlooks towards mines because they profited from mines, but if one looked from the perspective of the miners engaged in treacherous physical labor, mines were also a place comparable to Hades. This comparison can also be traced back to some of the earliest classical writers like Dante, Homer, and Virgil. There were vacillations in how individuals viewed mountains and mines. On one hand there was a delight of riches found in the Earth's depths, and on the other hand there was a deep fear of the winding paths of darkness. The mine in Falun was no different; Falun was the primary source of wealth for Sweden and the location where a young miner, Mats Israelsson, had gone missing in 1670. Fifty years later miners came across his perfectly preserved body. When they brought his body to the surface his fiancée was able to identity her former lover. His body was put on display in the mine's museum and became a spectacle within the community.

Swedenborg seems to have been aware of Mats Israelsson when he writes, ". . . the amount of copper held in the solution in the water is so great that even human bodies that have been immured and suffocated in the rocks and caves, and immersed in the water for several years, have become so penetrated by a certain vitriolic menstruum as to be preserved entire from dissolution, and have afterwards been taken out into broad daylight in view of all."[21] It was Carl Linnaeus, Swedenborg's brother-in-law, who communicated to local community members that the mine waters kept Israelsson's body preserved. Similar to Swedenborg, Carl Linnaeus confirmed the majestic and hellish nature of the mines: "The Falun mine is one of the great wonders of Sweden but as horrible as hell itself."[22] Many artists, including E.T.A. Hoffmann, who wrote a fictional account of Mats Israelsson in his short story "The Mines of Falun," reinterpreted Israelsson's story and reiterated a fear yet fascination with the

[21] Emanuel Swedenborg, *The Principia*, 2.

[22] Magareta Kjellin and Nina Ericson, *Genuine Falun Red* (Stockholm: Prisma, 1999), 124.

mines—a combination of wonder and fear that anticipates the later articulations of the Romantic sublime.

Swedenborg's poetry was situated in these early formative years of scientific exploration and discovery. His environment shaped his other writings as well as his poetry. Helander agrees: "on closer investigation, the poems turn out to be an interesting and in part fascinating picture of the age, a mirror of the last dramatic years of the Great Northern War, conveyed by the mind of a young, very talented and very ambitious scholar and scientist."[23] Thus, Swedenborg's use of ekphrasis was both a result of literary conventions of the time and of his own understandings of how experiences in the mine enabled dynamic encounters with the natural world. In the preface of his *Treatise on Copper* Swedenborg describes mines with vivid imagery similar to his poetry: "an abyss and immense crater yawns open in the middle; at its sides, in different directions, there are hundreds of pits and excavations towards the deeper parts, where in like manner other caves and hollows succeed and, from there open out descents into fresh grottoes and mines, and thus they make a great highway . . ."[24] Nature comes alive and takes on human characteristics such as yawning in this description. Hans Helander explains how personification was not defined as a rhetorical trope until after the eighteenth century, but "ancient handbooks categorized the phenomenon that we today define as personification as either *fictio personae*, *conformatio, prosopopoeia,* or 'metaphors that transfer from the living to the non-living."[25] Helander provides the example of Virgil's ancient Latin literary description of the entrance to Hades, which provided groundwork and descriptive vocabulary for Swedenborg's poems "On the smiths that formed large masses of iron" and "On the Mine in Falun." Intertextuality was frequently employed in Neo-Latin texts, and Helander argues, "for the poet who wrote Latin poetry, a large number of inherited ideas and themes were at his disposal, as *loci* ready to be used. Of these, many were of classical origin, but some were themes that had come to form a part of the intellectual *repertorium*

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[23] Emanuel, Swedenborg, *Ludus Heliconius and other Latin poems,* 7.

[24] Emanuel Swedenborg, *Opera Philosophica et Minerali (Treatise on Copper),* 1.

[25] Emanuel, Swedenborg, *Ludus Heliconius and other Latin poems,* 37–38.

during the Renaissance and the Baroque period."[26] Swedenborg's mine poetry finds its roots in inherited ideas and themes of Hades, but complicates Hades' imagery because of Swedenborg's seminal involvement in scientific developments in mineralogy.

"On the smiths that formed large masses of iron" describes in exacting detail the different tasks blacksmiths must go through to make iron useful:

> This one brings a rough lump and hurls it into the furnace
> That one carries charcoal, another torches.
> This one tosses up and turns the mass, another seizes it with tongs,
> Yet another puts the glowing burden on the anvil.
> This one goes round the anvil, remodels the mass and prepares it.
> Another pours on a stream of water that resounds greatly.
> They stood there deaf from the sound, black from the sulphur.
> Just add the wrinkles—and you had the face of Charon.[27]

The strong descriptions in this poem help this scene come alive and creates a tangible setting. All of the senses are engaged, and the poem embodies what Swedenborg describes in *The Principia* that, "it is impossible to receive knowledge immediately from the soul; man attains only through the medium of organs and senses."[28] The reader is given the opportunity to experience and learn about the blacksmith's profession through the narrator's own sensory engagement. The narrator effectively uses poetic imagery to awaken the senses. Interestingly, the narrator conveys this poem from a distance, not in the place of the miners, but as an outsider. There is not a sense of judgment, but one of awe. There is a fascination with miners carrying charcoal, viewing the radiating light from the burden, hearing the stream of water resound, and observing that miners experienced deafness as a result of their work. The line "yet another puts the glowing burden on the anvil" has a double meaning—the burden as part of the mining process and something that weighs an individual down. Perhaps the narrator understood the burdensome nature of this job,

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[26] Ibid., 30.

[27] Ibid., 122.

[28] Emanuel Swedenborg, *The Principia*, 4.

similar to Swedenborg's experiences on the Royal College Board of Mines. The poem provides many points of encounter, but at the end of the poem there is a turn from concrete details to the figure Charon, which takes the poem into a deeper realm of mythological allusion and interpretation. The miners go from being miners to embodying Charon, who in Greek mythology is the ferryman of Hades. Miners provide a connection between the living, found above the mine and in themselves, and the deadness that permeates the mine interiors. Even though there is a connection to the living, the miners remain deaf from the sounds in the mine and are unable to escape the haunting nature of their reality. In this poem the miners accept their state, but it is how others, such as the narrator, see the miners that reveals the potential terror of the miners' appearance while engaged in their work. The narrator does not conflate the miner with Charon but shows how one small detail, like adding wrinkles, would produce the face of Charon. Wrinkles inevitably happen over time and show the life commitment to work in the mines and the way the mines dehumanize the miner's body. This destruction distorts, and is slow and painful. Hans Helander demonstrates how this poem "contains echoes of Virgil's descriptions of the busy Cyclopes at work in the forges under Aetna" and references similar moments of Charon, but does not say much more about the significance of Charon in this piece.[29] Charon appears in works by Virgil and Dante—authors Swedenborg was deeply familiar with—as a brutal and grotesque figure of the underworld, so the parallel to Charon has the potential to elicit fear and trepidation.

While this first poem focuses more on the process of extracting iron from the earth and the miner's resemblance to Charon, the second poem, "On the Mine in Falun," goes into more detail following a narrator's journey into the Falun mine:

> Behold, a wonderful thing! I glide down from the upper world in a bucket,
> thus hanging, I am brought all the way to the dark shadows of death.
> But, as I moved to and fro hanging in the middle of the air,

[29] Emanuel Swedenborg, *Ludus Heliconius and other Latin poems,* 218.

it was pleasant for me to sing holy hymns.
It was pleasant thus to weigh this poor and fragile life,
which all depended on the power of a rope.
Behold, —in the recesses of the mine the band of Hades hurriedly
rushes along,
with dark faces wondering at me and my followers.
Some of them roll *rocks*, some sweat in the *dust*,
this one throws down *wood*, another brings *torches*.
Yet another enters the *recesses*, someone puts out from a *hole*
a face that is burnt, so that even dark Charon himself would laugh.
Another with a great effort climbs quivering *ladders*, yet another is
squatting in a *vessel*;
the vessel holds only half his body.
This one is working himself through *winding veins*, another goes round,
for he leads small horses around in a circle.

What more shall I mention? All is full of hard work and skill.
Skill is not inferior to the material, nor is the material inferior to the
skill.[30]

The narrator, like the one in "On the smiths that form large masses of iron," is not a miner, but reports what he experiences. The narrator is likely an overseer because "dark faces" are "wondering at me and my followers" (a line that could also refer to Swedenborg's role as an assessor). This is significant because the mine is experienced from an outsider's observations. The narrator's insights could have many interpretations embedded in the poetic narrative, which could allow for the mines to be understood as both a positive and negative space. The narrator begins with expressing delight, and the choice of words "behold, a wonderful thing" goes beyond an individual impressed with mines. "Behold" indicates that this journey is remarkable and evokes a sense of sacred reverence. One is not simply looking, but fully embracing an experience. Ninety years after Swedenborg wrote his famous poem "On the Mine at Falun,"

[30] Ibid., 122.

William Wordsworth wrote "Home at Grasmere," and Kate Rigby, Professor of Environmental Humanities at Monash University, argues,

> Presumably, the 'seclusion' that Wordsworth speaks of [in this poem] refers to the way in which the little valley seemed to be enclosed by the surrounding mountains, which rise above the place on which the boy is positioned." Despite his elevated lookout point and the subsequent repetition of words from the paradigm of sight ('looked, 'gaze,' 'behold,' 'gazed"), Grasmere is precisely not displayed to us in a view from above. Instead, we are told of what being therein that spot at that moment made this particular boy think, feel, and imagine.[31]

In a similar manner as Wordsworth's (Romantic) rhetorical strategy, Swedenborg's ekphrasis of the Falun mine also provides readers with what the narrator thinks, feels, and imagines as he descends from the upper world to the depths. "Behold" can mean to see or observe, but in conversation with "wonderful" evokes Christian scripture. For example, Luke 2:10–11 says, "And the angel said unto them, Fear not: for, behold, I bring you good tidings of great joy, which shall be to all people. For unto you is born this day in the city of David a Saviour, which is Christ the Lord."[32] This scripture brings into view the power of sacred looking like one would look at an icon and see a permeating divine presence. The angel in Luke speaks "behold" and is a vessel for sacred encounter. In fact, the narrator continues with angelic imagery as he glides from the "upper world in a bucket, thus hanging, I am brought all the way to the dark shadows of death." "Glide" conveys gracefulness, which in a wooden bucket seems contradictory. Swedenborg strategically employs paradoxical, successfully utilizing the Baroque pattern of antithesis, which, according to Helander, is a "very typical feature of Swedenborg's poems."[33] After the narrator describes his initial descent, he finds himself hanging in a bucket, swinging to and fro, and being brought into "dark shadows of

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[31] Kate Rigby, *Topographies of the Sacred: the Poetics of Place in European Romanticism* (Charlottsville: University of Virginia Press, 2004). 82–83.

[32] New King James Bible Translation.

[33] Emanuel Swedenborg, *Ludus Heliconius and other Latin poems*, 30.

death." In order to cope with potential anxiety of entering a space with an air of death and lack of control over the bucket, the narrator begins to sing holy hymns. Holy hymns embody a sacred tone and aural reassurance. The narrator does not abandon spirituality when entering the mines and finds comfort in these Christian songs. Singing these songs reveals to the narrator that his life is poor and fragile and depends only on the rope attached to the bucket. The description of poor and fragile life indicates the impermanent nature of human life, and the rope is a linguistic connection to divinity. In an instant one's life could be lost, and there is control over when that time will come; thus trust in the rope and bucket is essential.

There is power in the rope, and the narrator's successful descent exposes readers to the mine's recesses. It is here where a band of Hades hurriedly rushes along, directly communicating that this place is hell. The miners with their "dark faces [wonder] at me and my followers." As mentioned earlier, this moment could be a place where Swedenborg provided commentary about his own position on the Royal College Board of Mines. This position would keep him out of the laborious mining work and participating in the mines as an overseer. Even though Swedenborg and this narrator do not work in the mine, both recognize the dangers miners face. The next few lines depict what the narrator observes— rolling rocks, sweating in dust, throwing wood, and bringing torches. Hans Helander compares these images in Swedenborg's poem to a descent into a mine made by Frenchman Charles d'Ogier who claimed to see Sisyphus and Ixion. These images furthered the standard depiction of mines as hellish.[34] Charon is also mentioned in this poem like Swedenborg's other poem about blacksmiths, but in this poem Charon is laughing because of the miners' burnt faces. The narrator objectively conveys what he sees, but his inclusion of Charon reveals a fear of what the mines do to miners' bodies. They disfigure the bodies and strip individuals of human qualities. The miner climbing the quivering ladders with great effort communicates the strain on one's body. The mines are not safe working environments, and the image of a man squatting in a corner that only holds half his body, perhaps defecating, proves there is a savage existence in the mines.

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[34] Ibid., 220.

The narrator's final observation describes going through the winding veins, and another individual leading horses around in a circle reflects monotony and repetition. This work traps the miners in deadly cyclical patterns. Throughout the poem Swedenborg italicizes specific words for emphasis, and to collate them together is striking: "*which all depended on the power of a rope*" – "*rocks*" – "*dust*" – "*wood*" – "*torches*" – "*recesses*" – "*hole*" – "*ladders*" – "*vessel*" – "*winding veins*." These words become the poem's focus and communicate the main ideas of the poem, which include contemplations about mortality and the mine's physicality. The mines consist of images that would later take shape in how individuals interested in Swedenborgianism would interpret his theory of correspondences. For example, according to Edward Craig Mitchell, rocks and stones would "correspond to, and represent truth in ultimates, external truth, truth as it comes down, and out, and reaches our outward conduct, and thus rests upon our outward life."[35] Many of these words would show up later in Swedenborg's journeys through spiritual worlds, particularly in his descriptions of the hells. The poem ends with a didactic moment where the narrator explains the hard work involved in the mines and equates skill and material. There is a recognition that the miners are engaged in laborious tasks that involve great skill, but that the miner's work is not in vain and that the materials are still praised for their valuable contribution. This poem provides a holistic image of mines as being a place of scientific discovery and spiritual encounter. a place where one can contemplate mortality and the meanings of existence.

Science and theology both grapple with mortality and meanings of existence, but often are divided as two different modes of understanding. Emanuel Swedenborg's poems reflect how science and theology can inform one another. This argument is informative because Swedenborg's poetry ran parallel to his work in mineralogy, drew from neoclassical metaphors and allegory, and also could have provided Swedenborg with descriptive language for his later theology. Sally M. Promey, professor of religion and visual culture at Yale University, discusses how Swedenborg "offered a system for encountering the unknown through the known.

[35] Edward Craig Mitchell, *Scripture Symbolism: An Introduction to the Science of Correspondences or Natural and Spiritual Counterparts* (St. Paul: McGill-Warner Co, 1904), 100.

While superior to the material, the spiritual was inherent in the material world; the divine could be discovered in nature."[36] Thus Swedenborg's experience in the mines and his understanding of neoclassical literary conventions shaped his theological writing style. In *Heaven and its Wonders and Hell From Things Heard and Seen* Swedenborg vividly describes his journey into hell, which draws upon imagery similar to his earlier poetry:

> I have been permitted to look into the hells and to see what they are within; for when the Lord wills, the sight of a spirit or angel from above may penetrate into the depths beneath and explore their character, notwithstanding the coverings. In this way I have been permitted to look into them. Some of the hells appeared to the view like caverns and dens in rocks extending inward and then downward into an abyss, either obliquely or vertically.[37]

As in his poetry, Swedenborg effectively uses ekphrasis, and this excerpt reveals how his work in the mines shaped his theological language. As Swedenborg's poem conveys, the mines consist of winding veins and abysses. Hell becomes a place not distant, but beneath one's feet, a place one can travel into via a precarious bucket and where one might find comfort in holy hymns. Swedenborg, as a humble servant of the Lord Jesus Christ, is given access into the realms of heaven, hell, and the world of spirits. His cosmology could be said to describe a liminality in the valleys between mountains and rocks, with hell being beneath the mountains:

> The world of spirits appears like a valley between mountains and rocks, with windings and elevations here and there. The gates and doors of the hells are visible only to those who are about to enter. To whom they are then opened. When these are opened gloomy and seemingly sooty caverns are seen tending obliquely downwards to the abyss, where again there are many doors. Through these caverns nauseous and fetid stenches

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[36] Sally M. Promney, "The Ribband of Faith: George Inness, Color Theory, and the Swedenborgian Church," (*American Art Journal*, Vol. 26, No. 1/2. 1994): 50.

[37] Swedenborg, *Heaven and its Wonders, and Hell, From Things Heard and Seen*, Trans. J.C. Ager, (New York: American Swedenborg Printing and Publishing Society, 1889), no. 586.

> exhale, which good spirits abominate and flee from, but evil spirits delight in them and seek for them.[38]

Heaven, hell, and the world of spirits are places accessible by the imagination. These places are associated, named correspondences by Swedenborg, with places in the physical and material world, which informs Swedenborg's theology because his theology of heaven and hell asserts, "in the spiritual world, the world where spirits and angels live, things look much the same as they do in the natural world where we live—so similar that at first glance there seems to be no difference."[39] Prior to Swedenborg writing his theological works, the mines had already become a locus for anxious speculation. Darkness was associated with humans' propensity to sin and an absence of God's truth, often depicted as light. Swedenborg's theology confirms fears of places like mines as sites for punishment because one turned towards evil as a source of truth. In the depths of the mines sight is muted and one struggles with locating light. In "On the Mine in Falun" Swedenborg describes the narrator confronting a descent from the "upper world to the dark shadows of death," as well as the miners who "stood there deaf from the sound, black from the sulphur" in "On the smiths that forms large masses of iron," which is similar to his imagery of hell in *Heaven and Hell*:

> There are hells everywhere. They are under mountains and hills and cliffs and under the plains and valleys. The openings or gates to the hells that are under the mountains and hills and cliffs look at first sight like crevices or fissures in the rocks. . . . All of them seem dim and gloomy when you look in, although the hellish spirits who live there have the kind of illumination you get from glowing coals. Their eyes are adjusted to the reception of this kind of light.[40]

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[38] Swedenborg, *Heaven and its Wonders, and Hell,* no. 429.

[39] Emanuel Swedenborg, *Heaven and Hell,* no. 582.

[40] Swedenborg, *Heaven and its Wonders, and Hell,* no. 584.

Lighted coals and burning sulphur is an artificial source of light and cannot supplement the true source of heavenly light. The thick darkness, often conveyed in descriptions of mines and caverns, alters sight, which corresponds to falsities. The light coals and burning sulphur are characteristics of mines and provide sensorial indicators of hell. One can smell and taste coal and sulphur. If Swedenborg had not had his experiences in mines, then it is likely he may not have been able to describe hell in such rich detail. It is because Swedenborg had descended into the depths of mines that he was able to provide vivid imagery of places like hell.

Emanuel Swedenborg made substantial contributions to a variety of disciplines. Swedenborg's work on the Royal College Board of the Mines and his work on the body gave Swedenborg the language to convey his theological revelations. Swedenborg's theology was not devoid of the natural sciences, nor were his theological inquiries absent in his scientific discoveries. Swedenborg was operating in a world where secular and sacred realms had not (yet) been polarized. The interdependence of science and theology would provide Swedenborg's successors, especially those who would be known as Transcendentalists and Romantics, with language to discuss the role of the natural world in spirituality. Individuals like Sampson Reed, an early American Swedenborgian disciple and early contributor to the Transcendentalist movement, would come to argue that "the state of poetry has always indicated the state of science and religion."[41] Did Swedenborg's poetics simultaneously convey the state of science and religion? In "On the Mine in Falun," Swedenborg suggests that both science and religion inform the narrator's perception as he enters the mine. Emerson found Swedenborg to be a representative man and exemplary poet because his "design of exhibiting such correspondences, which adequately executed, would be the poem of the world, in which all history and science would play an essential part."[42] Even though Emerson praised this understanding of correspondences, he still believed that Swedenborg's theology "fatally narrowed his interpretation of nature" because he "fastens each natural object to a theologic notion."[43] Although

[41] Sampson Reed, "Observations on the Growth of the Mind," in *Transcendentalism: A Reader*, ed. Joel Myerson (New York: Oxford University Press, 2000).

[42] Ralph Waldo Emerson, "Swedenborg; Or the Mystic," 121.

[43] Ibid., 121.

Swedenborg's theology could limit the interpretation of the natural world, Swedenborg's earlier poetry finds a balance in science and religion as a source of comfort, as a narrator sings to himself and finds delight in the depths of a mine.

Furthermore, Swedenborg's understandings of the great Copper Mountain and Mine of Falun would also influence German Romantics like Johann Wolfgang von Goethe who attempted to understand the nature of the mines. Kate Rigby describes how "no other type of landscape underwent so dramatic a transformation in the European cultural imagination in this period. Once thought to be the haunt of dragons, an embodiment of all that was most frightful about this fallen Earth, mountains had by Goethe's time been redefined as a privileged sight of sublime spiritual experience."[44] In *Emanuel Swedenborg: A Continuing Vision: A Pictorial Biography and Anthology of Essays and Poetry,* the editors show how "in the late eighteenth and early nineteenth centuries, during and just after Swedenborg's lifetime, European intellectuals like Goethe and Coleridge read Swedenborg and discussed his books. That tradition persisted into the twentieth century among Europeans, like Oscar Milosz, interested in the spiritual realm."[45] Questions remain, such as which Swedenborg works Goethe read and how many of those works influenced Goethe's own work. Vacillations in how individuals understood "Mountain Gloom" versus "Mountain Glory" can be traced in Swedenborg's own understanding of the mountain peaks as comparable to heaven, pure spiritual experience, and yet the caverns below being a place of hell. Rigby continues that Goethe "was on the track of the divine under as well as up mountains. Indeed, within German romanticism the descent down the cavernous deep, was to prove an even more important topos than the ascent to the mountain peak. And it was here, in the seamy depths of these literary mine shafts, that the monstrous returned to the mountains. . . ."[46] Swedenborg's works on the mines came before Goethe's own experience

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[44] Kate Rigby, *Topographies of the Sacred,* 131.

[45] Alice Skinner, "Poets with Swedenborgian Connections: Introduction" in *Emanuel Swedenborg: A Continuing Vision: A Pictorial Biography and Anthology of Essays and Poetry*, 53.

[46] Kate Rigby, *Topographies of the Sacred,* 132.

of working in mines, but Swedenborg clearly grappled with similar imagery of mountains that Goethe confronts. Swedenborg was similar to the younger German Romantics because "the aesthetic and spiritual appreciation of mountains was not incompatible with their scientific exploration and commercial exploitation."[47] Taken as a sum whole, Swedenborg's prodigious work in mineralogy, his ekphrastic poems "On the smiths that form large masses of iron" and "On the Mine in Falun", and his later theological writings, we might gain new insights into the relationships between poetry, natural science, and theology, and further appreciate the significance of Swedenborg's complex personae of poet, scientist, and religious visionary. ❑

[47] Ibid., 140.

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