

Book Review

Daedalus Hyperboreus: The Nordic Inventor, Emanuel Swedenborg's Scientific Journal, Emanuel Swedenborg, *First publication in English*, Swedenborg Scientific Association, Bryn Athyn, PA ©2020, Translated from the Swedish by Göran Appelgren, Staffan Rodhe, Editor, 220pp., 9 plates, 8 foldouts, ISBN: 978-0-915221-55-4 (HARDBACK) \$69.95 at Bryn Athyn Cathedral Bookstore and Amazon.com.

The publication of a new Swedish edition (Skebook Publishing, Sweden, 2018) and, for the first time, an English translation of *Daedalus Hyperboreus*, constitute a literary milestone, both in Swedenborg studies and in the history of science more generally.

Up to this point, some 300 years after the original publication of the journal, it has been relatively inaccessible, existing only in the original volumes and in a facsimile edition of 1910. And both of these were printed, for the most part, in the old Gothic font that even most modern Swedes would have trouble reading.

Now, after three centuries, it has been rescued from obscurity, not only by being reset into a modern font and translated into English, but also by the illuminating commentary of the editor, Staffan Rodhe, a retired senior lecturer in the history of mathematics at Uppsala University.

The Swedenborg Scientific Association has enthusiastically published the English version because of its obvious relevance to the life and work of Emanuel Swedenborg. But its wider significance should also not be ignored, as it was Sweden's first scientific journal and, indeed, one of the earliest in Europe, for that matter.

The book is subtitled "Nordic Inventor," but this perhaps does not do justice to the implications of the name "Daedalus," implying an inventor, yes, but an inventor of mythological stature. The introductory section on the "History of Daedalus," touches on the possibility that Swedenborg is hinting that it is the King, Charles XII, who is this epic figure, given the effusive poem on the title page. Rodhe also notes that in the fourth issue, in the "Outline for a Machine to Fly in the Air," he speaks of the machine as "our Daedalus." But the most obvious candidate, as is noted, is certainly Christopher Polhem, even though Swedenborg uses a different honorific

in the preface to the first number, calling him the "Swedish Archimedes." But it cannot be denied that Polhem is the central topic of a majority of the material in the periodical. So it is generally taken for granted that it is Polhem whom the title honors. (See, for instance, David Dunér, "Daedalus of the North: Swedenborg's mentor Christopher Polhem," *The New Philosophy*, 2010, p. 1077.)

The early years of the eighteenth century were exciting times for Sweden's natural philosophers. The "Cartesian Controversy" of the previous generation at Uppsala had been settled in a compromise that largely favored the Cartesians, those who wished to pursue empirical evidence and the experimental method. A leading figure of this period was Eric Benzelius, Swedenborg's brother-in-law and mentor (he was 13 years Emanuel's senior.) At the end of 1710, Benzelius gathered some of the professors from the university to form the "Collegium Curiosorum," effectively Sweden's first scientific society, the principal purpose of which, at least in the beginning, was to correspond with Polhem. And as Swedenborg was abroad at this point, visiting some of the great centers of learning, he became a correspondent as well.

The Collegium Curiosorum was also keen to publish and promote the inventions of the great Polhem, and when Swedenborg returned from his grand tour in 1715, with his energy and enthusiasm, he was clearly the man for the job. And by the beginning of 1716, the new publication had been launched, and although the principal focus was on the productions of Polhem, Swedenborg also found it a ready forum for some his own earliest ideas in mechanics, mathematics, and philosophy.

Although the periodical extended to only six issues, quite a number of topics are covered, far too many to compass in this short review. As examples, however, let us take three of Swedenborg's more notable contributions, each of them tantalizing in its own way.

It is in the *Daedalus* that Swedenborg gives a short summary of his ideas about a flying machine. Beginning from what might be called some aerodynamical calculations of Polhem, Swedenborg ventures into a number of astute observations about the requirements and feasibility of an airplane—much more scientifically sound than most of the fanciful designs for flying machines that appeared over the next two centuries. But he ends the brief treatment, "Enough about our Daedalus for the present." Frustratingly,

this is all he ever publishes on the subject. He did leave enough material in manuscript, however, including the oft reprinted sketch, for books to be written about it. (E.g. Henry Soderberg, *Swedenborg's 1714 Airplane: A Machine to Fly in the Air*, New York:1988. Available at the Bryn Athyn Cathedral bookstore.)

It is in 1716 that Swedenborg, in the first of several attempts, sets before the world, in Swedish, his idea for solving the knotty problem of calculating the longitude at sea. Just two years earlier, while Swedenborg was actually in England, the British Parliament offered an immense prize (up to 20,000 pounds) for an answer to this important challenge. Swedenborg is so enamored of his approach, that he expands this Swedish version as a separate pamphlet in 1718.

In 1721 he read a version in Latin before the Society of Sciences, Uppsala, which he published that year and again in 1727. He continues to try to promote his method even into the period of the theological works, publishing it one last time in 1766. Thus his little essay in 1716 begins a quest that lasted 50 years. (Wertha P. Cole suggested in a 1933 article in this journal (pp. 169–178) that Swedenborg's method, although theoretically plausible, would probably not have been practical for observations at sea.)

In the space of about five pages, near the end of the final issue of *Daedalus*, Swedenborg outlines a "Proof that our Living Being Consists mostly of small vibrations that is *Tremulations*."

In contrast to most of the other material in *Daedalus*, including most of Swedenborg's own contributions, we have here a brief excursion into anatomy and physiology. He surveys some mechanical principles that might underlie life itself, but again the notes published here are only a small fraction of what he left on the subject in manuscript. It is a teaser, foreshadowing an aspect of his philosophy to which he does not seriously return for two decades.

In closing, a few words about the organization of the book: The editor provides, in the front matter, more than 30 pages of "Remarks about the articles," giving background, context, and explanations for many aspects of the text which would otherwise be impenetrable for many readers.

The text of the *Daedalus* is then laid out so that the translation conveniently matches the original publication page for page, right down to the catchwords at the bottom right of each page. The pages of the work itself are numbered

consecutively, beginning with the Arabic numeral "1" on the first full page of text. The front and back matter are also numbered with Arabic numerals, beginning with the very first page of the book, but in this case with the prefix "A:" before each numeral. The front matter ends with "A:58," and the epilogue is numbered from "A:209" to "A:221."

The illustrations from the original are handsomely reproduced on a series of nine foldout plates, positioned, as one might expect given the layout of the work, in locations corresponding to their placement in the original edition.

The translation into English may seem a bit awkward at times, but it is important to realize, as the translator explains in the preface, that this was done intentionally, to reflect the somewhat halting style of the original, resulting, at least to some extent, with the frequent admixture of Latin words with the Swedish text.

This volume is a welcome addition to the body of texts from the eighteenth century science now presented in accessible modern editions. It also provides a window on some of Swedenborg's earliest scientific ideas, a window not previously available to those who cannot read the texts in the original languages. □

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