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Nummendal, Tara, and Donna Bilak, eds. Furnace and Fugue: A Digital Edition of Michael Maier's Atalanta fugiens (1618) with Scholarly Commentary

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Nummendal, Tara, and Donna Bilak, eds.

Furnace and Fugue: A Digital Edition of Michael Maier's Atalanta fugiens (1618) with Scholarly Commentary.

Charlottesville, VA: University of Virginia Press. Accessed 24 August 2022. furnaceandfugue.org.

Furnace and Fugue presents a comprehensive digital edition of Michael Maier's Atalanta fugiens (1618). This emblem book was an experiment in genre, combining as it does not only the expected emblematic word and image constructs, but also providing both musical notations for the three-voice fugues for each of the 50 emblems that comprise it and the learned paratexts that expound on alchemical materials, sources, and practices. The German physician Maier, also a Rosicrucian, put on a dazzling display of alchemical erudition in poetry, commentaries, and song; his work was intended to engage the senses in emblematic synesthesia. The facsimiles, transcriptions, translations, and recordings provided in this scholarly resource exploit the affordances of digital editorial technology that allow users to explore the work's texts, images, and musical settings. The original German and Latin texts are complemented by a seventeenth-century manuscript translation in English, Atlanta Running, now held at the Beinecke Library at Yale University; the texts and musical notations have been modernized according to scholarly conventions to provide access to a wider public.1

Unlike the other projects reviewed in this issue of *Early Modern Digital Review* that primarily comprise databases and digital facsimiles to make accessible rare books that normally are difficult to study, *Furnace and Fugue* offers a comprehensive edition of a single remarkable book. Thus, the change in the focus of the website reviewed here shifts from the high-quality presentation of many emblem books and their individual emblems to the representation and scholarly apparatus of a single volume and its rich contexts.

Furnace and Fugue offers some exemplary digital presentations. Among the main divisions of the site (see Fig. 1) is a "Get Acquainted" section, framed

1. See collections.library.yale.edu/catalog/15959780. The Rare Book and Manuscript Library at the University of Illinois Urbana-Champaign also holds a manuscript of this translation, once owned by Alexander Tilloch (1759–1825): University of Illinois Library, Post-1650 MS 0094. Another known manuscript, British Library MS. Sloane 3645, was transcribed and published in the early 2000s by Adam McLean (see alchemywebsite.com/atalanta.html).

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in yellow, with pages on early modern alchemy, the biography of the book's author, Michael Maier, and the making of *Atalanta fugiens*. Then follow a "Digital Edition" section, comprising the Latin, German, and English texts; "Scholarly Essays," a collection of eight expert essays on various interdisciplinary topics relating to the themes and contexts of this exceptional volume; and an "Emblem Image Search," where users can explore the book's emblems. These three sections are framed in orange, while below are two further sections framed in white: "About the Project," linking to comprehensive information on editorial practices, technical specifications, acknowledgements, and credits; and a supplementary "Music Performance Edition" of *Atalanta fugiens* available for download as a PDF.



Fig. 1. Contents page for *Furnace and Fugue*. https://furnaceandfugue.org/ search.

The "Digital Edition" section exploits the display affordances well: the default opening shows the "comparative view," with the facsimile book page appearing on the left and a transcription of the English translation on the right (Fig. 2). In the left-hand drop-down menu on the horizontal navigation bar, users can change the view to display either the original page facsimile or digital edition alone. The right-hand drop-down menu allows users to switch from the normalized to diplomatic transcriptions of the English translation and of the Latin original. The English text is useful and makes this splendid work available

to a broader public. Here a diplomatic transcription of the German can also be viewed. The middle drop-down menu on the navigation bar, "Emblem," reveals thumbnail facsimiles of all the pages of the emblem book. Clicking on any given emblem produces a side-by-side view of the facsimile page next to a page displaying its *pictura* with a translation of the motto, below which is the performance edition of the music for its accompanying fugue, followed by a translation of the emblem epigram and its lengthy commentary. Users can also click the "play" button next to the music and hear the fugue associated with the respective emblem. As the fugue is sung, the notes resonating appear in red, so users can follow along in the score. The individual voices can be turned off and on, while a "piano roll" view is also available. Each of the 50 emblems enjoys this same sophisticated visual and acoustic display. The opportunities to employ this digital edition of *Atalanta fugiens* for both scholarly and pedagogical purposes are extraordinary.



Fig. 2. Emblem 1 of *Atalanta Fugiens* from *Furnace and Fugue*. https://furnaceandfugue.org/atalanta-fugiens/emblem01.html.

For those scholars interested in Maier's German texts, the Germanlanguage epigrams (*Epigrammatis Latini versio Germanica*) can be found immediately following the printed fugue on the facsimile page in the comparative view, while the German mottos stand as titles to the fugues. These are transcribed only in the diplomatic edition, where they can be read by those wishing to study the work more deeply. These six lines of pair-rhymed verse for each of the 50 emblems are constituent parts of the original publication and should be considered together with the Latin and English texts. Unlike for the Latin and English, there is no normalized German transcription. The edition as a whole privileges the original Latin and the later English translation over the original German. The entire project, in fact, skews strongly towards Anglo-American research. The lack of attention to German emblematic contexts is serious and discussed in further detail below.

At least twice a noteworthy feature in the original imprint goes unremarked in the digital edition at Furnace and Fugue. For example, emblem 45 in the printed work displays the first lines of the fugue text and notes upside down-and backwards! This is not in error. The page display reflects an unrecognized meaning-making aspect of the emblem that receives no comment in the comparative views.² The meaning of the inverted words and music clearly have to do with the Latin directions: "sup[ra] vertendo Bas et incip[iat] ab initio clave d" ([in the] above turning over the bass and starting from the beginning on the key of d), a directive that is repeated in the score. The music accomplishes this inversion; this "fleeing" and "turning" imitates the "chase," the "fugue," which is the subject and defining metaphor of Atalanta fugiens, of Atalanta fleeing, with the notes here also turning and chasing across the page. This motion can be further extrapolated to the rotations and courses of the sun, the moon, and the planets central to alchemical thought. Although partbooks often printed music with some parts upside down to allow various voices to read their part while standing together sharing a copy, this practice does not account for the backwards ordering of the text. Such an inversion occurs again in the fugue accompanying emblem 49, which offers a more elaborate instruction: "in 5 supra vertendo Basin seu fugientem vocem et incipiendo ab initio clave d. sic vertendo simplicem et incipiendo in fine g" (in 5 above by turning over the bass or fleeing voice and starting from the beginning in the key d, thus turning it simply and beginning at the end of g). The voice represented as "turning" is in both cases that of Atalanta, which can be discerned in the recording. It is a musical depiction of the footrace.³ These details are fascinating and confirm

^{2.} Emblem 45 receives brief comment in the "Musical Performance Edition" PDF (p. 133).

^{3.} The music editors comment in the PDF version on emblems 46 and 48. In the former they note the following: "Music is notated only through m6, at which point the text is printed in reverse, with the

the emblematic strategies also employed in the music that further embed it in the enigmatic texts and images of the emblems. It seems no coincidence that the three voices of each fugue could be construed as the constituent three parts of an ideal emblem construct. These observations serve to illustrate the need for representing even small details of the printed work in the digital view of the edition.⁴ Within the field of emblems often the smallest changes shift emphases and meanings, suggesting new interpretations and thereby offering additional acoustic and visual delectations for the emblem's audience. A full presentation affords the opportunity for the serendipity of discovery that lies at the heart of the emblem enterprise.

As intellectually broad as *Furnace and Fugue* is, one clear weakness of the edition is the lack of consultation with emblem scholars. Emblem studies is a robust discipline with an active international community. For instance, the Society for Emblem Studies (emblemstudies.org) has been holding conferences as well as organizing annual panels at the Renaissance Society of America and other venues for many decades, and a highly regarded journal, now in a new series called *Emblematica: Essays in Word and Image*, has published comparative and interdisciplinary research for over 30 years. The lack of emblem expertise reflected in *Furnace and Fugue*, however, has led to blind spots that undermine its scholarly authority. Because the creators did not engage with the emblem community, they overlooked the significance of a widely circulated German alchemical manuscript that is known to have had an impact on Michael Maier and *Atalanta fugiens*. The "Alchemistisches Lehrgedicht" (1556), or "The Book of Lambspring," held at the Zentralbibliothek Zürich and available online since 2012, is a key predecessor to *Atalanta fugiens*.⁵ While the volume was printed

instruction "The first voice from the beginning: the second at the end, and sing toward the beginning" (p. 136). In the latter fugue, the music mirrors fleet-footed Atalanta, who arrives at the end of her lines before the slower Hippomenes: "In this fugue, H proceeds at half the speed of A, only completing half his text by the time she finishes. Maier provides H with underlay for the complete stanza, but in order for him to sing it, A and P must repeat. Performer's choice: to leave H trailing in the race or not?" (p. 142). These remarks are buried in the PDF and not available in the digital edition.

^{4.} In his essay on the English origins of *Atalanta fugiens*, Loren Ludwig shows that the music from both emblems 45 and 49 was adapted from John Farmer's *Divers and Sundry Waies* (1591). This would be worth pursuing in light of my observations. See Ludwig, "John Farmer's *Sundry Waies*."

^{5.} I extend my sincere gratitude to my co-editor and emblem scholar par excellence, Pedro Germano Leal (John Carter Brown Library), for alerting me to this unfortunate oversight.

in 1599 without emblems,⁶ it was printed again in 1625 by Lucas Jennis and illustrated by Matthias Merian, the same artist who illustrated Maier's work.⁷ Emblem 6 from the original 1556 manuscript (Fig. 3) is nearly identical to Maier's emblem 14 (Fig. 4).⁸ Alchemical manuscripts circulated widely in the sixteenth century, and Maier, himself a Rosicrucian, certainly had access to manuscripts, including the "Book of Lambspring" that likewise circulated in the sixteenth century. The interactive map for the biographical essay at *Furnace and Fugue* situates Maier in Basel, where he received his doctorate c. 1596, four decades after the Zürich manuscript of "The Book of Lambspring" is dated. While one might argue that *Furnace and Fugue* did not intend to include comprehensive source material, there is an article among the scholarly essays that discusses English sources of the music. The Lambspring manuscript is also a critical source for the emblems.

6. See Barnaud, Triga chemica.

7. The nexus of Maier, Jennis, and de Bry in Frankfurt and Oppenheim with respect to the publication of alchemical and emblem books deserves further study in light of Andreas Friedrich's series of emblem books published in French and German. From 1617 onward, Jennis and de Bry published nearly all of Maier's works.

8. On their website, Matthäus Merian and the Illustration of Alchemy (merian-alchemie.ub.uni-frankfurt.de), Katja Lehnert and Berit Wagner explain that Merian based his work on Lambspring: "Zu den Bilderserien, die für Dyas chymica tripartita entworfen und im Musaeum hermeticum wiederverwendet wurden, zählen unter anderem Matthäus Merians Illustrationen zum Buch Lambspring. Eigens zur Bebilderung des zunächst in deutscher, dann im Musaeum hermeticum in lateinischer Sprache abgedruckten Traktats fertigte Merian nach dem Vorbild älterer Lambspring-Manuskripte eine Serie von 15 Radierungen an, die den im Text allegorisch geschilderten Herstellungsprozess des Steins der Weisen illustrieren. Zudem radierte er das Wappen des mittelalterlichen Autors und entwarf ein Titelblatt für das Traktat, bei dem es sich aller Wahrscheinlichkeit nach vollständig um seine eigene Bilderfindung handelt, da in den von ihm als Vorlage genutzten Handschriften ein solches Motiv nicht vorhanden ist" (Among the series of images designed for Dyas chymica tripartita and reused in the Musaeum hermeticum are Matthäus Merian's illustrations for "The Book of Lambspring." Especially for the illustration of the treatise, which was first printed in German and then in Latin in the Musaeum hermeticum, Merian made a series of 15 etchings based on older Lambspring manuscripts, which illustrate the manufacturing process of the Philosopher's Stone as allegorically described in the text. In addition, he etched the medieval [sic] author's coat of arms and designed a title page for the treatise, which is in all likelihood entirely his own pictorial invention, since such a motif does not exist in the manuscripts he used as models). Lehnert and Wagner, "Rhenanus," para. 3; my translation.



Fig. 3. Emblem 6, Lambspring manuscript, 1556. Courtesy of Zentralbibliothek Zürich, Ms P 2177. https://www.e-manuscripta.ch/zuz/content/ zoom/127732.



Fig. 4. Emblem 14, Michael Maier, *Atalanta Fugiens*, Oppenheim, 1618. Courtesy of Emblematia Online, Herzog August Bibliothek, Wolfenbüttel. http://diglib.hab.de/drucke/196-quod-1s/start.htm.

An absence of input from scholars of digital emblematica whose expertise could have provided additional useful insights for the project must be noted here. The emblem community met in Glasgow in June 2001,⁹ when it collectively agreed to best practices and standards, including using Iconclass for

9. See "About the Glasgow Projects" (emblems.arts.gla.ac.uk).

encoding pictorial elements of the emblem *picturae*. The absence of input from this quarter is clearly a condition of *Furnace and Fugue* having evolved from a much different context and from a historical approach to the study of science, technology, and craftsmanship. Given, however, the popularity of emblems and their pervasiveness during the early modern period, the genre offers valuable insights into the attitudes and mentalities of early modern makers and doers. Because the digital edition of Maier's *Atalanta fugiens* is intended for a wide spectrum of scholars, it would have been well served by the inclusion of established digital emblem expertise.

For example, as noted, the emblem community decided to employ Iconclass indexing for the pictorial elements of digital emblematica, and this has become a community standard since about 2002. The affordances of Iconclass as Linked Open Data (LOD) allow disparate projects an advanced level of interoperability and foster the reuse and repurposing of existing data. For example, Emblematica Online (emblematica.library.illinois.edu) has three works by Michael Maier that could have been usefully linked to Furnace and Fugue.¹⁰ At Emblematica Online, users can consult a German copy of Atalanta fugiens, an edition of 1708 held by the University of Illinois, for which all 50 emblems have been indexed according to Iconclass notations. It is freely available on the Web. The metadata there associated with Maier's emblems has the potential to enrich their iconographical interpretation significantly and lead to the identification of related images in adjacent fields, thereby further widening the scope of alchemical study. The Iconclass notations as LOD facilitate cross-platform searching of themes and motifs. The value of employing a consistent vocabulary with a multilingual thesaurus is made clear in the following example for Maier's emblem 14, "Hic est draco caudam suam devorans" (This is the dragon devouring its own tail). The *pictura* represents a motif well known to emblem scholars, that of Ouroboros, which has, in the indexed copy with emblem 14 in the Emblematica Online database, the Iconclass notation "23A21 serpent Ouroboros" (Fig. 5A-5B).

Clicking on the notation there ("more emblems with this heading") leads us to a total of seven emblems (from six different books) indexed with this notation in the Emblematica Online database (Fig. 6). Clicking from

^{10.} One is a corresponding 1618 edition of *Atalanta fugiens* from the Herzog August Bibliothek, Wolfenbüttel. There are also two copies of the 1708 German edition of the work. See emblematica. library.illinois.edu/detail/book/michaelismajerii00maie/emblems.

the Emblematica Online menu link "Find VKK images with this heading" (Virtuelles Kupferstichkabinett/Virtual Print Room) and inserting there the notation "23A21" results in 47 hits from among the more than 100,000 graphic prints of the Herzog Anton Ulrich Museum in Braunschweig and the Herzog August Bibliothek in Wolfenbüttel (Fig. 7).¹¹ Thus, from one emblem in *Atalanta fugiens*, users can identify six more in various emblem books using Emblematica Online, and from there discover a further 47 related images in VKK.



Fig. 5A. Emblem 14, Michael Maier, *Atalanta Fugiens*, Frankfurt, 1708. This indexed edition is in Latin and German with the same images as the 1618 edition used in *Furnace and Fugue*. Courtesy of Emblematica Online, University of Illinois Urbana-Champaign. http://emblematica.library.illinois.edu/detail/emblem/E002171.

11. The combined corpus of VKK—all of it indexed according to Iconclass—continues to grow. The VKK site (virtuelles-kupferstichkabinett.de) is available in English and German, while its image browser permits searching in German, French, Italian, and Portuguese.

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Fig. 5B. Emblem 14, Michael Maier, *Atalanta Fugiens*, Frankfurt, 1708. Same as above, showing detail of the drop-down menu for cross-platform searching Iconclass 23A21(+0) Ouroboros in Emblematica Online and other repositories.

This example can be repeated for many Iconclass notations that reflect alchemical and technical processes and practices. For example, departing from the Iconclass notation "47A212 fire, oven, furnace" used to index Maier's emblem 3 in Emblematica Online, users can navigate the Iconclass hierarchy upward to the notation "47 crafts and industries" to identify 2,396 hits, presumably a gold mine for project researchers to sort through and assess. The affordances of LOD contribute to the development of the semantic web and point to the development of quantitative humanities research at a scale that fosters qualitative research of both an interdisciplinary and comparative nature. *Furnace and Fugue* offers a sophisticated project that makes excellent use of several existing digital editorial tools and adheres generally to good practices. However, it remains a silo, albeit a very rich one, for not considering the advantages of exploiting existing digital research in emblematica.¹² An opportunity was missed.



Fig. 6. Same as above, showing search results for Iconclass 23A21(+0) Ouroboros in Emblematica Online.

The section "About the Project" provides rich detail about the editorial practices involved in fusing this layered edition of texts in Latin, English, and German with complex images and music for three voices. Explained here is the editorial decision for diplomatic and normalized transcriptions, both generated from a transcription encoded with TEI. In addition to the superb presentation of the material in its various forms and formats, the website also allows users to curate and manipulate their own collection of emblems. Features of the scholarly essays are also interactive. The "Technical Specifications"

^{12.} The section "About the Project," which lays out the conferences that scaffolded this ambitious project, makes no mention of the inclusion of emblem scholars.

included in this section are clear and to the point. The original imprint and the English translation were transcribed using XML according to a TEI schema with the conventions recorded and available on a GitHub text repository. The conversion of the files for the digital edition to HTML were generated on an inhouse system using Python and XLS as its template language. The conventions for the musical performance edition are documented in detail and were created in Sibelius and exported to MEI. The alignment of the audio with the interactive music display is worthwhile. The acknowledgements in this section are generous and sincere. It takes many dedicated scholars, each with their own fields of expertise, to bring a multifaceted, complex, and nuanced project to fruition. The teams for the various editorial groups for text and music as well as encoding, design, development, and production are all recognized.



Fig. 7. Search results for Iconclass 23A21 for Ouroboros in the Virtual Print Room (Virtuelles Kupferstichkabinet). http://www.virtuelles-kupferstichkabinett.de/de/search.

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Furnace and Fugue is a noteworthy digital resource in the humanities. Even with the caveats noted above, the creators deserve credit for making this marvelous multimedia publication accessible to students and scholars.

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