

Language,  
Signs,  
Meaning,  
Applications

The Philip Mills Arnold Semeiology Collection



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# The Semeiology Collection Reconsidered

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Erin K. Davis, Curator of Rare Books

The Philip Mills Arnold Semeiology Collection was the subject of major exhibitions in 1973 and 1988. In 2010, observing the ongoing transformations and interplay between the humanities and sciences — in textual studies, communications studies, data processing and curation, among many other academic disciplines — we in the Washington University Libraries thought it timely to consider this collection once again.

The current exhibition catalog incorporates all items appearing in the two previous exhibitions, and so represents a kind of collaboration, across the decades, among successive curators of the collection. Fittingly, the entries are encoded according to the curator who selected and described the items. Entries that appeared in the 1973 exhibition and its catalog, *The Philip Mills Arnold Semeiology Collection: An Exhibit, June — September, 1973*, by Patrick J. Russell, Jr., are identified with the initial R. Mr. Russell's introduction to that catalog is also reprinted here (p. 3). Entries from department head Holly Hall's 1988 exhibition *Language, Signs, and Meaning: the Philip Mills Arnold Semeiology Collection* are identified with the initial H. New entries that I prepared for the current exhibition are identified with the initial D. All descriptions have been edited for consistency, and the entry headings have been standardized by adopting the format used in the Libraries' online catalog.

This exhibition of 2010 builds on the previous two, including material acquired after 1988 and representing subject areas not emphasized previously. Noting, for example, Mr. Arnold's interest in the ways his books described the communications-based systems introduced in them, I devoted two sections to the organization, description, and measurement of communications-based data. I hope the title of the exhibition, which reproduces that of 1988 with the addition of the word "Applications," will hint at the ways our world has changed in the 20-plus years since the collection last formed the focus of a major exhibition.

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# Welcome to the Collection

Anne Posega, Head of Special Collections

A sturdy but rather battered-looking black suitcase would arrive in Special Collections every few months. Inside we would discover the latest batch of books, carefully selected and purchased by Philip Mills Arnold for his Semeiology Collection, documenting the complex history of signs, symbols, and communication. These new additions to the collection were unpacked, and the suitcase shipped back to Bartlesville, Oklahoma, to await the next acquisitions. This went on for many years, and the many, many files full of letters show the continuing partnership between an exemplary collector, Mr. Arnold, and our rare book librarians. The files also illustrate his dedication to understanding the books and his chosen subject, recount his quest for fine copies of these texts, and reveal his desire to make his collection both cohesive and useful. And so it has been, to many scholars, over many years. In addition to assembling this outstanding collection, Mr. Arnold became Special Collections' greatest benefactor, leaving a generous endowment from his estate. This partnership between this consummate collector and the library was a tremendous collaboration, and has had a lasting impact on the library and its users. The memory of Mr. Arnold's battered suitcase and the collection it conveyed to us over the years continue to signify Mr. Arnold's lifelong quest and his enduring love of books and learning.

## Acknowledgements

We would like to thank Shirley K. Baker, vice chancellor for scholarly resources and dean of University Libraries, and B.J. Johnston, associate dean of University Libraries, for their ongoing support of Special Collections. For their assistance with the editing of this catalog, our gratitude goes to Joy Lowery, Evie Hemphill, and Kelly Brown.

# Introduction<sup>1</sup>

Erin K. Davis, Curator of Rare Books

Philip Mills Arnold (1911-1994) began collecting books while a student at Washington University. After receiving his undergraduate degree and a master's degree in chemical engineering, he worked for nearly 40 years at Phillips Petroleum Company, retiring as vice president for research and development in 1976. Throughout his professional career and into retirement, Mr. Arnold developed a remarkable collection of books and manuscripts in the specialized field of semeiology, often called semiotics.<sup>2</sup> He donated his collection to the Washington University Libraries in 1969, and his subsequent purchases were sent directly to the Department of Special Collections. The collection currently numbers over 2,300 items, and new materials are added through a sizeable endowment left to the Libraries upon Mr. Arnold's death.

In preparing this exhibition, I took the opportunity to read through some 30 years of correspondence between Mr. Arnold and a succession of rare book librarians at Washington University. His letters reveal a formal, thoughtful, somewhat reserved person, but a few documents in particular display his thinking and methodology as a collector. A 1966 letter, relevant portions of which appear in the appendix to this catalog, provides a formal description of the Semeiology Collection's major areas of enquiry. In 1985, Mr. Arnold discussed his requirement that the books describe the theoretical underpinnings of a given system. For example, "in the field of communication for the blind and deaf, I excluded books printed in Braille or other raised letters that do not explain the system used; in shorthand and cryptography I excluded books written by such methods that do not explain the methods."<sup>3</sup> Such precision and clarity informed the ongoing development of the collection and provided the format and structure of the current exhibition.

Perhaps the most touching insight into the thinking of this collector appears in a document of 1983, when department head Holly Hall jotted some notes following one of their conversations:

When [Mr. Arnold] began collecting in college, he began with the theory of colors. He was interested in the philosophical discussion about color and the argument over whether color originated in the mind or the object. He found that there weren't enough books on the subject to sustain his interest so he decided to focus on "means of communication other than ordinary language." It has been hard to keep this focus clear because there are so many tangential books of interest and also because he had a hard time explaining his interest to [book] dealers. So he would tell them that he was looking for books on cryptography, telegraphy up to but not including electrical methods, attempts at universal languages except for Esperanto and other popular schemes (philosophical foundation of language systems), attempts at decipherment of unknown languages (up to the point where they were solved), reading and writing systems for the blind and deaf and mute, and signs and symbols used to convey a message.<sup>4</sup>

It's not surprising that Mr. Arnold had difficulty describing his life's pursuit — “means of communication other than ordinary language” would seem by nature to defy neat categorization, highlighting the inherent limitations of the mind, as it were, observing itself. Recognizing, however, that one can sometimes best understand a thing by looking at it indirectly, as if reflected in a mirror, we invited four scholars familiar with the collection to comment on its content and meaning in relation to their own disciplines.

Each of the four contributors makes reference to how the reading of cultural objects can fall outside the limits of verbal communication. In an essay that movingly recalls Mr. Arnold's original interest in the cognitive dimensions of color, Ken Botnick considers the ways an encoded poetry text conveys meaning beyond the realm of conventional language. Joe Loewenstein, reviewing the Semeiology Collection's many emblem books in the context of early modern print culture, describes a “market for open secrets,” a kind of twilight world where the printed book both reveals and conceals. Michael Sherberg muses on the transmission of a late classical text within that market; Mr. Arnold's extensive collection of early printed works by Boethius invites consideration of how the act of translation contributes to the evolution and consumption of a text across time and space.

Some of the specifically data-oriented approaches to communication that held such fascination for Mr. Arnold are addressed in Matt Wilkens' essay on “The Origins of Literary Text Mining.” From the perspective of our information-rich age, it seems that Mr. Arnold — who was, after all, an engineer — intuited the kinds of applications and challenges that would emerge with the development of computer-assisted encoding and analysis of deep semantic structures. Wilkens considers how such activity, now very much a part of humanities-based research, makes possible a “real engagement with the world around us.”

The essays raise more questions than they answer, touching on issues of cultural history, perception, aesthetics, and language that are as old as humanity itself. Mr. Arnold would no doubt have been delighted. Rounding out Holly Hall's 1983 conversation notes, she records that he “told [a] story about a London dealer who offered to put a collection together for him. [Mr. Arnold] declined, noting that it was the difference between going to the fish market and buying fish, and heading for the stream to catch his own fish. It's the fishing he enjoys.”

#### Notes:

- 1 Portions of this introduction appear in “Philip Mills Arnold Semeiology Collection,” in *Celebrating Research* (Washington, DC: Association of Research Libraries, 2007).
- 2 Mr. Arnold made a number of comments about his use of the term semeiology, for example: “I still object to the spelling “semiotics” instead of “semeiotics.” “Semi” would lead one to think that the term means something like “half-knowledge.” It loses all connection with the Greek root “semeion,” meaning a sign. Furthermore, the loss of the “e” following the “m” will result in the word being mispronounced. The “e” is necessary to indicate that the first “e” is long” (Philip M. Arnold to Roger Mortimer, April 22, 1975).
- 3 Philip M. Arnold to Timothy D. Murray, October 7, 1985.
- 4 Holly Hall, May 19, 1983.

Perhaps the most varied and individual collection in the Special Collections of the Washington University Libraries, the Philip Mills Arnold Semeiology Collection now numbers approximately 1,600 volumes, extending in time from the *Ars Oratoria* of Jacopo Publicio (Augsburg, 1490) to Charles Kasiel Bliss's *International Semantography* (Sydney, 1948-49), and ranging in subject matter from cryptography to the sign language of the deaf. Dealing with the nature and characteristics of communication, the collection emphasizes material which appeared at early stages of the development of interest in topics relevant to semeiology; later materials are treated selectively.

Semeiology, often referred to as semiotics, has been defined by Charles Morris as "a theory of signs in all their forms and manifestations, whether in animals or men, whether normal or pathological, whether linguistic or nonlinguistic, whether personal or social." It seeks to bring attention to the non-verbal aspects of communication, and their relationships with written and verbal expression. Signs, of course, might include the punctuation of a printed page or the pauses of a speaker, the notations used by a stenographer or the alphabet of a writer.

Perhaps one of the most recognizable signs is that of writing itself. Viewed in the Arnold Collection primarily as a means for conveying information, the semeiologist's concern is the development of various types of writing as seen, for instance, in the work of Bernard de Montfaucon or the alphabet books of the Congregatio de Propaganda Fide. Writing may be transformed into a means, or series of signs, for conveying secret messages by way of cryptography. A particularly strong aspect of the Arnold Collection, material in cryptography ranges from the earliest work on the theory of cryptography by Johannes Trithemius to the more practical essays of Francisco Martí and other modern writers. As another form of writing, shorthand has common origins with cryptography, hence the inclusion of Pierre Carpentier's work on the decipherment of the Latin shorthand known as Tironian notes, as well as the more practical *La Plume Volante* of William Mason. Likewise, cryptographic methods have proved to be an aid in unraveling the signs of unknown languages, as seen in John Chadwick's *The Decipherment of Linear B*. Such efforts not only increase our knowledge of written forms, but also extend our understanding of the ways in which language functions and communicates ideas.

Language itself, viewed as the structured means of sharing related concepts, affects and is affected by the signs it employs. A strong aspect of the Arnold Collection, the language area includes items on semantics, linguistics, and universal grammar. Study of the common features of languages by such writers as Antoine Court de Gébelin and Bishop John Wilkins reveals the nature of the signs of language, such as words and grammatical relationships. The use of language signs, or symbols, as a means of communication, either written (pasigraphy) or spoken (pasilaly), which overcomes the barriers of diverse tongues is pointed to in the works of such writers as Benajah Jay Antrim and Cave Beck.

Not only does language affect the signs we use, but signs may also be employed to stimulate or arouse concepts or words we intend to instill in ourselves or communicate to others. Another major portion of the Arnold Collection is devoted to this aspect of semeiology. The development of mnemonics in the classical and medieval periods of western civilization is a notable instance of this. Ramón Lull, for example, demonstrates how signs may be used to enable the mind to recall and combine in various ways words and concepts previously learned. Cosmas Rossellius writes of the use of a visual alphabet for cluing in one's memory to select words. The works of Giovanni Pierio Valeriano Bolzani and Henry Estienne illustrate the way in which signs, or emblems, can be used to convey abstract concepts to others.

Finally, the use of signs in non-verbal communication may take the form of signaling of words or ideas. Such a sign may be telegraphic, as seen in Claude Chappe's telegraph, whose purpose was the sending of a message to a distant point by means of visible signals. It may be a sign language for use by the deaf, as developed by Charles Michel de L'Épée. The sign may be tactual, as in the William Moon method of reading for the blind by way of the hand moving over an embossed page.

Several factors further enhance the significance of the Philip Mills Arnold Semeiology Collection for Washington University. It is complemented by the Isador Mendle Memorial Collection on the History of Printing, also housed in Special Collections. It provides material for several linguistics programs in the university. Most important, it brings together for scholarly use books and manuscripts, especially older titles, frequently scattered in diverse libraries. Lee Thayer, professor of communication, has said of this subject that "a phenomenon as ubiquitous as communication, a phenomenon which transcends so many traditional boundaries, is destined to languish. Welcome everywhere as an issue, but homeless, belonging to everyone but no one, an illegitimate handmaiden of so many disciplines, communication languishes in its own amorphousness." The Arnold Collection illustrates the significance of semeiological studies, until recently a largely untapped area. One of the increasing number of interdisciplinary studies, semeiology is now coming into its own right.

# The Red and the Black

Ken Botnick, Professor of Art, Sam Fox School of Design & Visual Arts

On one of my first visits to Olin Library's Special Collections I was captivated by the book known as the "De laudibus sanctae crucis" (see inside front cover), a marvel of early printing (1503). As I understand it, this book is a reproduction of a manuscript work created some seven centuries earlier by Hrabanus Maurus, monk of Fulda, for which Hrabanus designed 28 encrypted religious poems presented in a ciphering system of 36 lines containing 36 letters each. These visual poems are spaced evenly on a grid which fills the page and are magnificent examples of nuanced systems of reading and thought of the 16th century; with much of the public still illiterate there was still a way to enter these poems, decipher the symbols and figures on the pages, and be enriched by the "reading" experience.

The design of this typeface refers in style to Nicolas Jensen's Venetian type of some 30 years before. The capitals have the overly wide spread of Jensen's, making for the occasional awkward spacing. (If only these printers had had a beautiful 'Qu' ligature in their typesets their lives printing Latin would have been so much more fun.) The lowercase doesn't yet have the transition of thick to thin in the lines that makes for an elegant and "light" reading of text, but it has its moments. Typographers usually identify their favorite characters in a face and in this type I find the lowercase 'e' difficult not to like with its inclined cross-bar and extra wide mouth.

Early printers used simple visual constructs based on contrasts between red and black inks, and the printers of this volume did much to advance the technique of two-color printing. The presswork of this book, registering the red to the black ink and matching the baselines perfectly, displays craftsmanship of an extremely high quality. Letterpress printing in two colors was a process that was still less than 50 years old. This red ink, unlike some others of the time, is a deep, rich red which stands up to the dark black printing of the bulk of the texts. Printers of the 15th and 16th centuries used contrasts of red and black almost exclusively. Black was made from lampblack and oil and was simply the color that printing was supposed to be, authoritative, immovable. Red must have been chosen because it was the only color that could be formulated at that time that had enough strength of contrast to the black to sit on the same page, maintain its readability, and catch the eye easily.

But these are not the things that strike the reader upon first exposure to the book. The meticulous typesetting of the cipher pages coupled with the brilliant insertions of images, signs, and symbols in those pages seems to gather in letters across the page and form new-found word puzzles within bodies of animals and humans. These figures are designed in such a way as to appear to inhabit the poems and speak directly to the reader, whether that reader is literate or not. The use of red ink on letters of the cipher poems is a brilliant choice: by employing a visual trick of placing the red letters in clusters the printers have made use of visual "spreading" to heighten the perception of red where, in fact, there is none on the page. The paper color around those red letters is exactly the same as that surrounding the black but is perceived by the brain to be different (red, actually) in an attempt to separate the visual data presented it. In this way the design of the poems not only finds new word clusters in red letters but

reinforces the sensation of the completeness of a body, a flower, a cross, improving contrast by tricking the eye. The strength of the illusion is uncanny as seen in this figure with cross and shield, impossible to see without imagining the areas around the red letters as “red-ish” rather than paper white. These printers of 500 years ago were cognitive scientists!

That this book was printed at the beginning of the 16th century astounds me. I imagine this workshop casting its own types, possibly building their own presses, mixing inks, making paper, cutting wood blocks for illustrations, and even employing a scribe or two, not to mention actually printing the book. These places must have been marvels of industry, beehives of scholarship and craft. It is easy to understand how printing came to be thought of as mystical and somewhat dangerous, the black art. Reading Alberto Manguel's *The Library at Night*, I came across a translated passage from the Aztec Codex of 1524, found in the Vatican Archives, which is stunning in its understanding of the role the book would play in shaping knowledge, written almost 10 years before the first printing press appeared in the Americas.

Those who read, those who  
    tell us what they read,  
Those who noisily turn  
    the pages of their books,  
Those who have the power over  
    red and black ink,  
    and over pictures,  
Those are the ones who lead us,  
    guide us, show us the way.

# Inexplicit Arnoldiana

Joseph Loewenstein, Professor of English, Department of English

There's a slightly mischievous pleasure in working with the books on emblems and *imprese* in the Arnold Collection. These books represent a handsome selection, but a very slight one, from what Arnold knew to be a diverse and deliciously strange multitude of publications that spilled from European presses for three centuries starting in 1499, when Aldus Manutius published the weirdly arcane erotic allegory, the *Hypnerotomachia Poliphili*. Its illustrations, which had such a powerful influence on the English Pre-Raphaelites, are eerily enigmatic, inspired as they were by an illustrated manuscript, thought to have been of far more antiquity than was indeed the case, the *Hieroglyphica* of "Horapollo," a book that Aldus put into print in 1505. Arnold bought a later edition, from 1551.

Among the many sources of the appeal of printed books was that they offered to reveal secrets. Horapollo was variously believed to have been a fifth-century Egyptian priest, a pharaoh, even the god Horus himself, and the *Hieroglyphica* were believed to communicate an ancient and esoteric wisdom. The glamour of this esotericism rubs off onto a good deal of Renaissance image-making, with early modern artists emulating the mysterious manners of an ancient priesthood: printing made that glamour widely accessible, building a market for open secrets.

The enigmatic symbols that ramify from these two publications were exceedingly various: hieroglyphics, rebuses, emblems, *imprese*, devices, personifications, and so on. Many of these symbols are images that stand for words; some pair words and images; some are made of words only — mysterious phrases or poems that often refer to absent images. The symbolic kinds overlap, were felt to overlap, and for that reason guides to interpreting them and discriminating among them proliferate alongside the paintings, prints, and books that deploy them — a busy market in mystery and explication. Of course, Arnold collected from the explication side of the market. He bought Giovanni Pierio Valeriano Bolzani's demystifying expansion of Horapollo (1594, originally published in 1556), two versions of Paolo Giovio's *Dialogue on Military and Amatory Imprese* (1557 and 1574, originally published in 1555), and the first edition of Girolamo Ruscelli's *Famous Imprese* (1572). But he must have been especially pleased to acquire Thomas Blount's translation of Henri Estienne's omnibus study of *The Art of Making Devises: Treating of Hieroglyphicks, Symboles, Emblemes, Ænigma's, Sentences, Parables, Reverses of Medalls, Armes, Blazons, Cimiers, Cyphres And Rebus* (1646).

Estienne was a systematizer. He distinguishes *imprese* from emblems and works out their derivation from hieroglyphics. An *impresa* is always a symbolic image paired with an enigmatic motto. It should be strange, "a mysticall medley of picture and words" according to Estienne: the image should not contain the human form and the motto should not be in a foreign language. An emblem "declares the matter more plainly," for to image and motto it adds an explication in prose or verse. (In practice, most emblematic "explications" are only partial, reshaping the mysteries of image and motto rather than revealing them.) His taxonomy is helpful, but Estienne is always aware of the irreducible component of concealment in this tradition. He quotes Tipotius who refers to the *impresa* as "*Hierographie*; because (saith he) it is a more sacred signification of the thing, or of the person, which is not onely expressed, but also impressed with Characters and Letters." Tipotius's opposition of expression and impression is itself not entirely

clear: we may be confident that we understand what expression means in this context, but “impression” seems to suggest force without communication. Elsewhere Estienne describes the great value of symbolism in achieving “a ravishing of the mind.”

On October 7, 1985, Arnold wrote that

in making my collection my intent has been to include books that explain something, thereby providing reference tools for scholars working with a subject. ... Consequently, in the field of symbols I have excluded “emblem books” that have plates illustrating moral poems or discourses but do not explain the symbols; in the field of exotic or unusual alphabets or syllabaries I have excluded books that are merely printed in an unusual system but do not explain it; in the field of palaeography I have excluded collections of reproductions of manuscripts that do not explain the writing systems; in the field of communication for the blind and deaf, I excluded books printed in Braille or other raised letters that do not explain the system used; in shorthand and cryptography I excluded books written by such methods that do not explain the methods; in the language field I excluded dictionaries, grammars, and chrestomathies; and so on.

The hieroglyphic tradition fascinated him, but it thwarted his disposition to explanation and communication. He had an obligation to collect these books, but they must have taunted him with their ravishing secrecy.

# One Text, Many Formats

Michael Sherberg, Associate Professor of Italian, Department of Romance Languages and Literatures

Among his many gifts to the Washington University Libraries, Philip Mills Arnold donated an impressive collection of early editions of Boethius's *Consolation of Philosophy*. This book, a mix of poetry and prose, was written in the early sixth century A.D. while Boethius awaited execution in a prison in Pavia. It enjoyed wide readership during the first centuries of printing, in both Latin and vernacular European languages. In addition to a number of Latin editions, the Libraries own an early Castilian translation as well as the first Italian translation from 1520, a late 16th-century French translation, and later English translations.

Boethius left his mark on late-medieval authors. Dante borrowed the prose-and-poetry format for his own *Vita nuova*, written around 1294, and the *Consolation* echoes in the *Divine Comedy* as well. Geoffrey Chaucer, likewise a fan, executed his own English translation of the *Consolation*, and Boethius's philosophy finds its way into such works as *Troilus and Crysede* and *The Canterbury Tales*.

The early published translations themselves disclose a great deal about the dissemination of Boethius in the late Middle Ages and Renaissance. The translators hail from a variety of Catholic orders, including Dominicans and Augustinians, a sign of the book's wide-ranging appeal. In some cases the text alone appears, while in others there is introductory material as well as commentaries and marginal references to assist more motivated readers. Some translators insist on the contemporary relevance of Boethius. The Italian Anselmo Tanzo compares the political situation during Boethius's time, when the Ostrogoths had conquered Italy, to the contemporary political situation which found the peninsula beset by French invasions.

The text comes in all manner of formats, from beautiful 15th-century folios to pocket-sized duodecimos. Some of the Latin editions contain the lengthy commentary penned by Thomas Aquinas, in a variety of formats: the traditional medieval style, with text at the center of the page surrounded by two-column commentary; Boethius's text followed by the commentary; or, most strikingly, a few lines of Boethius interrupted by Aquinas's commentary. These three approaches to formatting challenge us to think today about the approaches to reading the primary text that editors and publishers envisioned as they laid out their books. Typefaces vary too, from late 15th-century Gothic to early Roman types. In some later editions Boethius's poems appear in italics, a typeface invented in the early 16th-century, with the prose text in Roman.

The Libraries have recently expanded their Boethius collection with the acquisition of first editions of two mid-16th-century Italian translations. Together with a third executed by the famed Florentine linguist Benedetto Varchi, these three were submitted as part of a contest organized by Duke Cosimo I de' Medici of Florence, who wanted to give a copy of Boethius, rendered in modern Florentine, to the Emperor Charles V. Varchi's translation won, but all three found their way into print with the ducal press of Lorenzo Torrentino.

The publication history of the *Consolation of Philosophy* raises inevitable questions about the nature of its appeal. Certainly the book addresses a number of universal questions, such as God's role in the universe, the nature of evil, the function of fortune. The book might not have found such a dedicated readership, however, were it not for the way that Boethius addresses these questions, in the form of a lively conversation between him and Lady Philosophy. She proves to be an entertaining and challenging interlocutor who brings the dialogue to life. Beyond that, however, in offering *consolatio* to Boethius she fulfills a dream that we all perhaps share, that in moments of great despair a companion will appear who can help us better to face daunting challenges, erasing our loneliness with comfort.

# The Origins of Literary Text Mining

Matthew Wilkens, Postdoctoral Fellow, American Culture Studies Program

Literary studies has a problem. For the last generation or more, its work has become increasingly cultural, its goal to explain not individual books but large social issues embedded in the written word. A certain hubris notwithstanding, this has been a welcome development. It's the difference, after all, between mere aestheticism and real engagement with the world around us.

Despite this useful change in the object of literary criticism, the scholarly methods of English professors today aren't much different from those of a century ago. We read as many books as we can, we interpret them closely, and we argue for their significance in a wider context. But even professors remain finite beings. We don't read as much as we'd like. In fact we don't read very much at all measured against the flood of words gushing from the world's publishing houses, magazines, blogs, and so on. Even when we're exceedingly well informed, we remain within a rounding error of total ignorance concerning each new day's or month's or year's literary output. This is our problem.

For this reason there is now great interest in new critical methods that can free us from the limitations of close reading and allow us to say something informed about the billions of words published every year that currently escape our attention. One such method is data mining and computational text analysis. Another is bibliometry, or the quantitative study of catalog and publishing records. A third is mapping and other types of spatial representation of textual events. The idea in every case is that there are important things to be learned from books over and above what we can gather from the much slower process of reading them.

All of these new methods — which sometimes go by the catch-all name “digital humanities” — have a few things in common. They require electronic versions of the texts in question. They depend on computers to perform at least some of the raw processing work. And they are not well integrated into the discipline of literary studies as it now exists.

As these digital methods play an ever larger role in the field, literary critics will need to understand both their historical development in other academic areas and their links to the work we already do. In both cases, materials such as those held in the Arnold Semeiology Collection will make up a crucial part of this backstory. To take only two examples, we might trace Johann Michaelis's early work on the connection between the names we give to things and the political opinions we hold about them forward through Ludwig Wittgenstein's ordinary language philosophy and Benjamin Whorf's hypotheses on the social construction of knowledge to contemporary research on partisanship and political rhetoric in thousands of Congressional floor speeches. Or we might find the roots of literary text mining in Augustus De Morgan's *Formal Logic*, Rudolf Carnap's work on logical syntax, and Claude Shannon's information theory.

The point isn't that these are obscure works — quite the opposite. But they are not now counted among the foundational texts of literary studies. This will change as computational and quantitative work comes to occupy a more central place in the humanities. As this transformation solidifies, books like those held in the Arnold Collection will appear not as important contributions to lightly related fields, but as

integral members of the history and genealogy of literary analysis. This historical narrative matters more than we might think; it's responsible not just for the way we understand our past, but also how we imagine our future possibilities. The books collected by Philip Mills Arnold won't produce this change on their own, of course, but they make such a transformation in the past, present, and future of literary studies vastly more tenable for those of us committed to seeing it through.

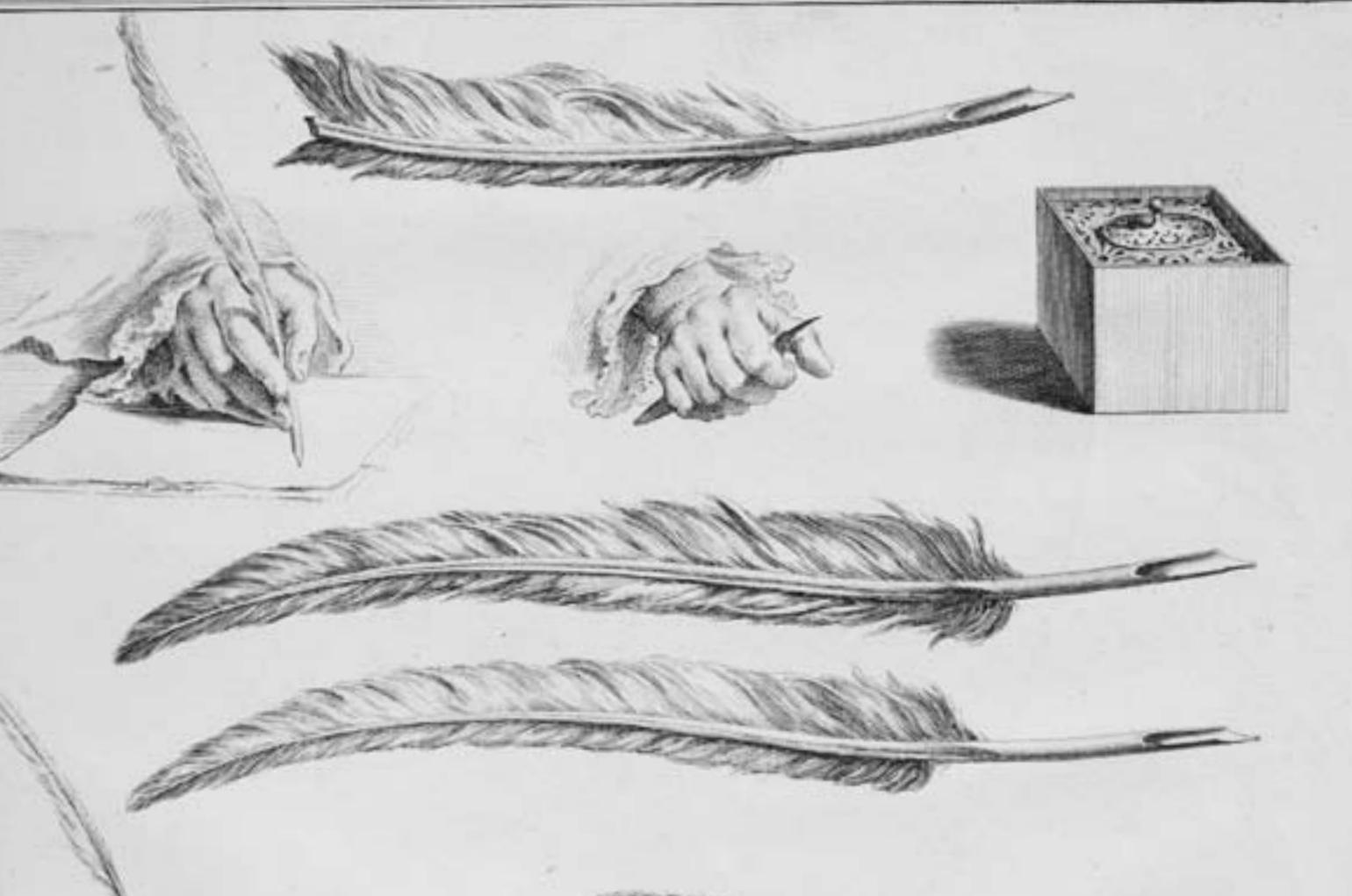
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# The Catalog

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The Philip Mills Arnold Semeiology Collection

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## 1 Wernherus, of Schussenried, 15th century

*Modus legendi abbreviaturas in utroque jure*  
Nuremberg: Fridericum Crewsner, 1476

Though this is usually held to be an anonymous work, Victor Scholderer has demonstrated, on the basis of an acrostic in the text, that it is probably by a certain Wernher of the town of Schussenried, canon of the College of Saint Germanus at Speier. A study of abbreviations used in texts of civil and ecclesiastical law, this is the first edition of the work. The Semeiology Collection also includes the 1490 Strassburg edition. [R·H]

## 2 Probus, Marcus Valerius

*De notis*  
Oppenheim: Jakob Köbel, 1510

Works by this Roman grammarian and literary critic survive only in fragments and in notes taken by his students. The present piece is a compilation of extracts from these fragments, particularly Probus's *De iuris notarum*, a work on abbreviations, especially of proper names, used in legal and historical writing. Appended to the extracts are two brief essays by Pomponius Laetus on Roman magistrates and religious customs. [R]

## 3 Postel, Guillaume, 1510-1581

*Linguarum duodecim characteribus  
differentium alphabetum*  
Parisiis: Prostant apud Dionysium Lesclucier, 1538

The Semeiology Collection includes first or very early representations of exotic alphabets in European books, particularly when accompanied by explanatory matter such as discussion of the origin of the writing system. Postel's work, which must have been exceedingly complicated to

print, includes examples of Armenian, Ethiopian, and Arabic languages, as well as Hebrew, Greek, and Latin. The text is graced with numerous handsome woodcut initials. The Semeiology Collection includes another of Postel's important works on ancient alphabets, *De foenicum literis commentatiuncula* (Paris, 1552). [H]

## 4 Palatino, Giovanni Battista, 16th century

(see page 18)

*Compendio del gran volume de l'arte  
del bene et leggiadramente scrivere  
tutte le sorti di lettere et caratteri*  
Venetia: Heredi di Marchio Sessa, 1578

Known in his time as the "calligrapher's calligrapher," Palatino first published this work in 1540 under the title *Libro nuovo*. Especially noted for its samples of chancery scripts, the work also includes examples of non-western scripts, as well as hieroglyphs and cipher alphabets. Palatino's fellow calligrapher Giovanni Francesco Cresci claimed that the plates in the *Compendio* were actually the work of the engraver Cesare Moreggio. Manuscripts in Palatino's own hand at the Bodleian Library, Oxford, and the Kuntsgewerbemuseum, Berlin, vindicate Palatino as the author of his own plates. Despite Cresci's strictures, Palatino remained one of the most versatile and popular calligraphers of his day, his work seeing 15 editions by 1588. [R]

## 5 Goropius, Joannes, 1518-1572

*Opera ... Hermathena, Hieroglyphica,  
Vertumnus, Gallica, Francica, Hispanica*  
Antwerpiae: C. Plantinus, 1580

This handsome volume, printed by Christopher Plantin and bound in 16th-century stamped vellum with the original boards intact, is an early and influential work on hieroglyphics, to which

it also relates emblemata and other symbolic writings. Some of Goropius's theories are now regarded as ludicrous but others are considered simply unusual; he is said to have inspired Leibniz. [H]

**6 Sturm, Johann Christophorus, 1635-1703**

*Collegium experimentale, sive curiosum*. 2 volumes

Norimbergae: Wolfgangi Mauriti Endteri & Johannis Andreae Endteri haeredum, 1676-85

Books on universal writing, artificial languages, and related pasigraphic subjects are included in the Semeiology Collection up until 1875, when the literature becomes voluminous. Sturm's book contains a short section on universal writing, wherein numbers represent ideas instead of words, so as to be intelligible to persons of all languages. *Collegium experimentale* is an important book in the history of science. In it Sturm describes the recent discoveries of his time, including the double-acting air pump, the first hygrometer, telescopes, microscopes, and the magic lantern. He also reports on Francesco Lana Terzi's famous "flying-boat" and reports an engraving of it, taken from *Prodromo all'arte maestra* (Brescia, 1670), a copy of which is also included in the Semeiology Collection. [H]

**7 Montfaucon, Bernard de, 1655-1741**

*Palaeographia graeca*

Parisiis: Ludovicum Guerin [etc.], 1708

With this work Montfaucon, a member of the Benedictine Congregation of Saint Maur, La Daurade, France, created the science of Byzantine palaeography. The work illustrates the entire history of Greek writing. Of special interest are Montfaucon's discussions of variations in Greek letterforms, the use of abbreviations in Greek manuscripts, and the process of deciphering archaic writing. Still basic in its field, *Palaeographia* has been modified chiefly by the invention of photography and the discovery of Greek papyri in Egypt. Montfaucon's knowledge of Greek manuscripts is also evident in his texts of Athanasius, Origen, and

John Chrysostom. He also helped to lay the groundwork for scientific archaeology in his *Les monumens de la monarchie françoise* (Paris, 1729-1733) and *L'Antiquité expliquée e représentée en figures* (Paris, 1719). [R]

**8 Curas, Hilmar**

*Calligraphia regia*

Berlin: Im Verlag des Autoris, 1714

Histories of handwriting, books on the origin of writing, and books showing the development of letterforms over the centuries are included in the Semeiology Collection. Books on calligraphy that are concerned solely with the ornamental aspects of writing are not included. *Calligraphia regia* is a model book intended to teach letterforms and fine handwriting to students in schools as well as to clerks in chanceries where elaborate scripts were used in drawing up documents, privileges, and other official papers. Since such model books were designed for practical use, few have survived intact or in good condition. No complete copy of this title is known to exist. Heretofore only four imperfect copies have been recorded, three in Germany and one at the Newberry Library in Chicago. [H]

**9 Paillasson, Charles, fl. 1760** (see page 14)

*L'art décrire réduit à des démonstrations vraies et faciles*

Paris?: 1760

This work seeks to provide the geometric proportions of the three scripts (ronde, coulée, and bâtarde) used in 17th-century France. One of the more eminent calligraphers of his time, Paillasson provides an explanatory text for each of the plates. The plates were engraved by Aubin (fl. 1740-1760). Prepared for publication in Denis Diderot's *Encyclopédie* (Paris, 1751-1772), the extract appears in slightly varying formats, this copy having 16 pages and 16 plates. [R]

10 **Giorgi, Antonio Agostino, 1711-1797**

*Alphabetum Tibetanum missionum apostolicarum commodo editum*

Romae: Typis Sacrae Congregationis de Propaganda Fide, 1762

This impressive volume marks an advance in Western studies of Asian languages. It is believed to contain the earliest systematic printing of Tibetan in the West. The author was an Italian Augustinian friar and a member of the collegio of intellectuals around Pope Benedict XIV. The printing is in Greek, Coptic, Hebrew, and Hindi, as well as Latin and Tibetan. The title page is printed in three colors, which is extremely unusual for the date. *Alphabetum Tibetanum* was published by the Congregation for the Propagation of the Faith, who also published a series of alphabet books highly prized today for their very early representations and explanations of exotic languages. The Semeiology Collection holds a nearly complete set of these historically valuable publications. [H]

11 **Catholic Church. Congregatio de Propaganda Fide**

*Alphabetum Grandonico-Malabaricum sive Samscrudonicum*

Romae: Congregationis de Propag. Fide, 1772

To support its missions in the Middle East and Asia, the Congregation for the Propagation of the Faith, an administrative body of the Roman Catholic Church, produced a series of books giving basic Christian texts in a variety of non-Western languages. This particular title from that series contains an extended essay on the languages included, Malayalam and Dravidian, by Clemente Peani (d. 1782). Included also are the customary texts of the Lord's Prayer, Ave Maria, Apostles' Creed, and Decalogue. It is introduced and edited by Giovanni Cristoforo Amaduzzi (1740-1792), Italian classicist and superintendent of the press of the Congregation. [R]

12 **Merino, Andrés, 1730?-1787?** (see page 19)

*Escuela paleographica*

Madrid: J.A. Lozano, 1780

Noted Spanish calligrapher and scholar Andrés Merino follows a well established tradition in palaeographical writing, drawing on the work of Jean Mabillon and the Spanish palaeographers Cristóbal Rodríguez (1677?-ca. 1735) and Esteban Terreros y Pando (1707-1782). The bulk of Merino's work, like that of Rodríguez, consists of facsimilies of old Castillian, Catalan, and Valencian texts, some being in Latin, to which a transcription and commentary by Merino have been appended. Space is given to a consideration of alphabets, and signs and contractions in Gothic, Saxon, Runic, and Ulfilan are deciphered. Merino also deals with hieroglyphs on old Spanish coins and devotes a noteworthy chapter to Gothic and Moorish coins. [R]

13 **Mabillon, Jean, 1632-1707**

*De re diplomatica libri VI. 2 volumes*

Neapoli: Vincentii Ursini, 1789

A work which virtually created the auxiliary sciences of history, including diplomatics, palaeography, sphragistics, and chronology, *De re diplomatica* first appeared in 1681. The book is the product of learned dispute between Mabillon, a member of the Benedictine Congregation of Saint Maur, near Reims, and Daniel Papebroech (1628-1714), one of the Bollandist editors of the *Acta sanctorum*, concerning the genuineness of certain Merovingian charters. In the process of defending the charters, Mabillon gives a detailed history of the Latin script and demonstrates the way in which the handwriting of his day developed out of the capital Roman letters. He also gives methods for deciphering various manuscript hands. Included in this third edition are extensive notes by the philologist Giovanni Adimari, Marquis of Bumba. Mabillon is also known for his *Acta sanctorum Ordinis S. Benedicti* (Paris, 1668-1702) and *Annales Ordinis S. Benedicti*, begun in 1703 and completed after his death by René Massuet and others. [R-H]



4 Palatino, Giovanni Battista, 16th century Compendio del gran volume de l'arte del bene et leggiadramente scrivere tutte le sorti di lettere et caratteri

**14 Astle, Thomas, 1735-1803**

*The origin and progress of writing.*  
2nd edition, with additions  
London: J. White, 1803

First published in 1784, this work of the English antiquarian Thomas Astle is a major contribution to the literature of palaeography. Writing, claims Astle, is that which distinguishes civilized man from the savage. Concerning the nature of writing, he maintains that “all marks whatever are significant by compact, and ... letters do not derive their powers from their forms, but from the sounds which men have agreed to annex to them.” Of particular significance in *Origin* are the sections on medieval writing, still of use to students. Portions on oriental languages, however, are now outdated. The work includes 31 plates showing numerous alphabets and scripts. Astle has added to this second edition an appendix on the radical letters of the Pelasgians, or Etruscans, discussing their derivation from the Phoenician alphabet. Astle was also active throughout his life as an indexer, his most important works in this area being a catalog of the

Harleian manuscripts (1759) and a catalog of manuscripts and charters in the Cottonian Library (1777). [R]

**15 Teesfen, J.**

*Verzameling von Schriften en anderen Oflujusch voor hat examen.* 2 volumes  
Volume 1, 37 pp., volume 2, 86 pp.  
Manuscripts, 1831

The Semeiology Collection includes a number of manuscript materials, including these two bound volumes of calligraphy samples. The texts, in Dutch, German, and English, include biblical passages, various alphabets, decrees, proverbs, musical scores, accounts, and a map. Both volumes bear the bookplate of A.G. de Bruyn. [D]

**16 Silvestre, J.B. (Joseph Balthazar), b. 1791**

*Paléographie universelle.* 4 volumes  
Paris: Firmin Didot frères, 1841

The work of a painter and artist, *Paléographie universelle* is an interesting piece of its kind. The 296 plates include specimens of numerous styles of calligraphy, oriental and western. Some of them are accompanied by engraved facsimiles of



illuminated miniatures. The accuracy of the various scripts represented differs greatly. Konstantin von Tischendorff (1815-1874), the German biblical scholar, has pointed out that the Greek material in the work is marked by numerous errors and confusion of letters due to Silvestre's ignorance of the Greek language. More recent scripts are the work's strong point. The accompanying text is the work of Jacques Joseph Champollion-Figeac (1778-1867), curator of manuscripts at the Bibliothèque Royale, Jean François Champollion (1790-1832), founder of Egyptology, and Jacques Joseph's son Aimé Louis Champollion-Figeac (1813-1894), the director of archives at the Bibliothèque Royale. [R]

### 17 Simons, Anna

*Beispiele zur Geschichte der Buchstabenschrift*  
Berlin: Heintze & Blanckeriz, ca. 1920

Throughout the long-running correspondence between Philip Arnold and a succession of librarians in Washington University's Department of Special Collections, it is frequently noted how well the Semeiology Collection complements the Libraries' strengths in the arts and history of the

book. This portfolio of facsimile reproductions of scripts by the German calligrapher Anna Simons is a case in point. Simons studied lettering with Edward Johnston, whose work for the Doves and Cranach presses is well represented in the collections at Washington University. Simons was also active in the private press movement, her work at the Bremer Presse contributing to the evolution of modern book design. [D]



**18 Diderot, Denis, 1713-1784**

*Lettre sur les aveugles a l'usage de ceux qui voyent*

Londres [i.e. Paris]: s.n., 1749

Best known for his magnificent *Encyclopédie* (Paris, 1751-1772), in this work Diderot presents a theory of survival by superior adaptation. As an example of adaptation, he maintains that the blind might be taught to read through the sense of touch. The Semeiology Collection holds numerous early books on writing systems developed for the blind, including examples of 19th-century embossed texts read by hand. [H]

**19 Diderot, Denis, 1713-1784**

*Lettre sur les sourds et muets*  
Amsterdam: 1772

In these two essays Diderot seeks to show the dependence of man's ideas upon the five senses, and the way in which the intellect is affected when deprived of one of them. Philosophically, the two pieces are important in that they expound an early form of the principle of the relativity of knowledge. *Lettre sur les sourds et muets* first appeared in 1751. Addressing the problem of the origin, nature, and aesthetic value of language, Diderot maintains that French has certain advantages over Greek and Latin. Within this context he considers the effect of deaf-mutism. This edition of the work also includes his *Lettre sur les aveugles*, although the title page lists only the *Lettre sur les sourds et muets*. [R]

**20 Guillié, Docteur (Sébastien), 1780-1865**

*Notice historique sur l'instruction des jeunes aveugles*

Paris: Imprimé par les jeunes aveugles, 1819

Guillié is the author of several works on the eye, and on education of the blind. *Notice* is a rare work, printed with script letters in bold relief on light cardboard sheets, a technique invented by Valentin Haüy (1745-1822). It includes a history of the Institution Royale des Jeunes Aveugles de Paris, founded in 1784, of which Guillié was director. A second section gives details on the manner of making books in relief and on teaching reading in relief. *Notice* is essentially a revision of the first two chapters of part three of Guillié's *Essai sur l'instruction des aveugles* (Paris, 1817). [R]

**21 Frere, James Hatley, 1779-1866** (see opposite)

*The Gospel according to Saint Matthew*

London: Blackheath Society for Embossing the Scriptures for the Blind by Barritt and Co., 1841

Known also as a biblical exegete, Frere in about 1838 introduced a phonetic system for enabling the blind to read. To reduce the bulk of embossed books, Frere based his system upon shorthand rather than the standard alphabet. His system consists of raised characters, including straight lines, whole and half circles, hooked lines, and angles, set in return lines; that is, lines reading alternately from left to right and right to left. Frere devised a cheap method for stereotyping his books, employing copper wires formed in the shape of his characters and soldered onto the embossing plate. *Saint Matthew* is part of a nine-volume series of the New Testament embossed in Frere's system. During his lifetime, he was also able to have printed the *Book of Isaiah* (London, 1843-1849). His system was not widely adopted because it was found to have adverse effects

UNDER THE PATRONAGE OF THE NOBILITY, CLERGY, GENTRY, AND COMMITTEES  
 HOME-TEACHING SOCIETIES FOR THE BLIND IN GREAT BRITAIN AND FOREIGN

MOON'S IMPROVED SYSTEM  
 FOR THE USE



OF EMBOSSED  
 OF THE B

A	b	C	D	E	f	g	h	I	.
⠠	⠨	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠
N	O	P	q	r	∇	T	U	V	W
⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠
:g for ing	:t for ment	:n for tion	:s for ness	Division of Verse	1	2	3	4	5
⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠
						6	7	8	9
									0
									Short Stop

**INSTRUCTIONS.**—The common Alphabet has been tried for 56 years, and can be felt by comparatively few; but the letters of this Alphabet only, are easily read by persons upwards of 70 and 80 years old. Seven of the letters are exactly the same as those of the common Alphabet, with parts left out, to make them open to the touch: these parts are marked by DOTTED LINES in the letters over the raised Characters. The 6 or 7 row of very simple form: they are printed entirely in dotted lines above. Words ending in *ing*, *ment*, *tion*, and *ness*, have the last letter put for the whole one above the other, giving notice of the contraction. The first letters of *Lord*, *God*, *Jesus*, and *Christ*, always stand for those holy names. There are should pass the forefinger of his righthand along the line, the forefinger of his lefthand following, to help him to keep his place. On arriving at guides his finger to the end of the line below, which is then read backwards, from right to left; and he thus avoids losing his place, or making any p lines are reversed only in position—not in shape. For example, in the word *ness*, the *ss* would be placed to the left reading forward; and to the ri side by side, are used for a full stop. A single dot for any shorter stop. The Character *q*, turned downwards, is a mark of interrogation. A p in the form of a triangle, pointing upwards at the beginning, and downwards at the end, is the parenthesis. Verses are divided by two short lines or

LONDON:

Sold at the Working Men's Educational Union, 24 and 25, King William Street, Trafalgar Square; and by W. Moon, 104, Queen's Road, Brighton.

The Holy Scriptures can be had of the British and Foreign Bible Society, 10, East Street, Blackfriars Road, London.

ES OF SCHOOLS AND

IGN COUNTRIES

SSED READING

LIND.

J K L T

J < L 7

X Y Z &

> J 2 5

il Stop. Parenthesis ( ) Interrogation ?

... ..

abet, consisting each of one or two  
and 12 are like the common letters  
aining letters are new Characters  
e syllable—aa, ig for ig—two dots,  
e no other Contractions. The pupil  
the end of the first line, a bracket  
ouse. The letters in the backward  
ght, reading backward. Two dots,  
arenthesis is marked by three dots  
is above the other.

onden.

upon pronunciation. This copy of *Saint Matthew* includes a short pamphlet by Frere explaining how to teach his system. [R]

22 Moon, William, 1818-1894 (see opposite)

*The three Epistles of Saint John: embossed for the blind, on Moon's improved system*

Brighton: W. Moon's Establishment for English and Foreign Books and Maps for the Blind, 1858

After becoming blind in 1840, William Moon taught himself to read by the aid of the various embossed systems then in use, and became convinced that none was really suited to the purpose. Aged persons experienced difficulty in reading by touch, and the complexities of stenographic systems made them hard to learn. Basing his efforts on the work of James Hatley Frere (1779-1866), Moon in 1847 brought out a system using only nine basic characters, placed in various positions to represent the letters of the alphabet. It is still in use today along with that developed by Louis Braille (1809-1852) just 13 years earlier. Many works, both sacred and secular, were brought out in embossed type using Moon's system during his lifetime. *Epistles of Saint John* was taken from a larger series of the complete New Testament. It appears to be a unique copy, prepared especially for George V (1819-1878), the last king of Hanover, who was blind. [R]

22 Moon, William, 1818-1894 *The three Epistles of Saint John: embossed for the blind, on Moon's improved system*



**23 Trithemius, Johannes, 1462-1516** (see page 30)

*Polygraphiae*

Basel?: Ioannis Haselbergi, 1518

This is the first printed book on cryptography and is so comprehensive that it became the basis of much subsequent work. The volume consists of six books of alphabets that may be used in a variety of ways to encipher a text to conceal the intended message. Both substitution and transposition ciphers are described. Trithemius, Abbot of Sponheim, was a well-known and influential ecclesiastic. His *Steganographia*, written about 1500, was not printed until almost a century after his death, but it became notorious in manuscript form because of its use of occult and cabalistic terms and its discussion of magic. He may have written his *Polygraphiae* to quell rumors about *Steganographia*. The title and content of the two books are often confused. [H]

**24 Cypher with my Lord Paget**

S.l.: s.n., 1690

William, 6th Lord Paget of Beaudesert, was a supporter of the Revolution of 1688, British Ambassador in Vienna from 1689-1693, and later served at Constantinople, where he had much to do with bringing about the important treaty of Karlowitz of 1699. This printed and manuscript code sheet with autograph cipher was probably used in communications with Paget during the Vienna posting and is a good example of late 17th-century diplomatic practice. [H]

**25 Trithemius, Johannes, 1462-1516** (see page 26)

*Steganographia*

Norimbergae: Joh. Fridericvm Rvdigerum, 1721

Although first published in Frankfurt in 1606, *Steganographia* was apparently completed

sometime in 1500. The work became known prior to the publication in 1518 of the author's *Polygraphiae*, with which it is often confused. In it Trithemius gives 55 different kinds of ciphers and delineates numerous methods for putting messages into codes. Because of his use of bizarre terms and characters in the work, Trithemius became suspected of dealing in black magic. This edition of *Steganographia* includes extensive explanations of Trithemius's work by Wolfgang Ernst Heidel (fl. 1676-1721), one of several apologists for the book. [R]

**26 Caramuel Lobkowitz, Juan, 1606-1682**

*Steganographiae Trithemii et Claviculae Salomonis Germani declaration et vindicatio*  
Manuscript, ca. 1675-1700

This manuscript is a French translation of Trithemius's controversial *Steganographia*, printed in Lyons in 1531. It is a good example of a manuscript translated into the vernacular after the Latin original has been published so that it might be read by a wider audience. The end of the text is confusing, because it contains a note about permission to print having been granted in Salamanca in 1534. This may be fictitious or perhaps was connected with the original text from which it was translated. The watermarks in the paper provide more trustworthy evidence, indicating that it was of French origin between about 1675 and 1700.

Caramuel was a Spanish theologian who had a varied career, serving Emperor Ferdinand III and Pope Alexander VII. He occupied some of the highest positions in the Cistercian order and was therefore probably knowledgeable about secret correspondence and related matters. [H]



27 **Silvestri, Jacopo**

*Opus novum*

Romae: M. Silber, 1526

Silvestri's little book is the second printed work on cryptography and, more important, the first practical handbook on cryptology and cryptanalysis. It contains the first presentation in print of the cipher disk, the grille, and several aspects of cryptanalysis, such as rules of Latin orthography affecting decipherment. This is the only book Silvestri is known to have published. Six cipher methods are explained: the skytale, the Caesar cipher, transposition, a syllabic system, a representational code system, and a homophonic substitution. Girolamo Cardano (1501-1576) is almost universally credited with the invention of the grille, but Silvestri plainly describes such a device, as seen in the figure here. Little is known about Silvestri, but it has been surmised that he worked as cipher clerk in the Vatican. [H]

28 **Bellaso, Giovanni Battista**

*La cifra*

Venetia: s.n., 1553

This six-page text has a manuscript with a cipher key laid in. The title page is especially interesting, because it has a cipher blind-stamped in a blank space that was probably saved for that purpose owing to the distance between the fleuron and the imprint. None of the catalogues or bibliographies consulted mentions its presence, however, so in the 1980s, Washington University's rare book cataloger corresponded with libraries in the United States and Europe known to hold copies of the book; most replied that they did not see a blind impression. [H]

29 **Trithemius, Johannes, 1462-1516**

*Polygraphie, et universelle escripture cabalistique*

Paris: I. Keruer, 1561

Begun at the request of the Duke of Bavaria, this very early treatise on cryptography by the Abbot of Sponheim was probably first published in 1518, although the dedication is dated 1508. Having been accused of dealing in black magic, Trithemius was at first reluctant to publish the work,

and this may account for the discrepancy in dates. The work describes both substitution and transposition ciphers. *Polygraphiae* became the basis of much subsequent work in cryptography. First written in Latin, the present edition of 1561 is the French translation of Gabriel de Collange (d. 1572). Collange has also designed for this edition 13 volvelles for use in applying various types of ciphers. This translation became the object of a well-known plagiarism when, in 1620, Dominique de Hottinga, a Frisian, published *Polygraphie* under his own name. [H]

30 **Porta, Giambattista della, 1535?-1615**

(see pages 29 and 31)

*De furtiuis literarum notis*

Neapoli: Mariam Scotum, 1563

Along with Trithemius and Vignère, Porta is generally regarded as one of the founders of modern cryptography. This first edition of his encyclopedic work on the subject includes historical sections on deciphering and on cryptography in the ancient world. Porta is known chiefly for his invention of a series of 12 alphabet ciphers in which letters of the second half of the alphabet are made to stand for letters of the first half, a key word indicating what substitutes are used. The earliest known cipher of its kind, its chief value lies in its compactness and convenience to prepare. Porta's work may have been known to Vigenère, and it is acknowledged by Matteo Argenti (fl. 1610), cryptographer of the Papal States, as the chief source of his own work. Porta is also known for proposing the sympathetic telegraph, a device whereby a magnetized needle may be used to activate another needle at a distant point. [R]

31 **Vigenère, Blaise de, 1523-1596**

*Traicté des chiffres, ou, Secretes manieres d'escrire*

Paris: Abel L'Angelier, 1586

Regarded as one of the founders of modern cryptography, Vigenère deals principally with the history of cryptography and the processes of cipherment. The work includes the first



description of the multi-alphabet cipher, or “alphabet square.” Although some writers consider this to be Vigenère’s invention, more likely it was devised by Leone Battista Alberti (1404-1472) or one of the early cryptographers of the Papal States. In any case, the alphabet square is generally regarded as the most perfect of the simpler polyalphabetical substitution ciphers. Also contained in the *Traicté des chiffres* is the first known European representation of the Japanese language. [R·H]

**32 Wilkins, John, 1614-1672**

*Mercury, or, The secret and swift messenger*  
London: John Maynard and Timothy Wilkins, 1641

Wilkins was the inventor of a cipher employing musical notation. Philip Thicknesse (1719-1792) elaborated this method in a 1772 book discussing a harmonic alphabet, wherein musical notes are made to represent letters of the alphabet. Thicknesse considered the harmonic alphabet to be the least liable to suspicion. Wilkins is also known for his *An essay towards a real character, and a philosophical language* (1668), also held in the Semeiology Collection. [H]

**33 Kircher, Athanasius, 1602-1680** (see page 24)

*Polygraphia nova et universalis ex combinatoria arte detecta*  
Romae: Ex typographia Varesij, 1663

This work by the German scholar and mathematician is based principally on the writings of Johannes Trithemius. Joaquín García Carmona and others also see the influence of Blaise de Vigenère (1523-1596), whose multi-alphabet cipher seems to have been transformed by Kircher into a numerical cipher. Of special interest in *Polygraphia* is part 1, where Kircher proposes a system of pasigraphy, or universal writing, employing numerals to stand for words of similar meaning in Latin, Italian, French, German, and Spanish. Parts 2 and 3 deal with cryptographic methods now largely abandoned. [R]

**34 Schott, Gaspar, 1608-1666** (see page 26)

*Schola steganographica*  
Norimbergae: Johannis Andreae Endteri, & Wolfgangi junioris haeredum, excudebat Jobus Hertz, 1665

Schott taught ethics and mathematics in Palermo and Würzburg and wrote extensively on scientific subjects and magic. His *Steganographica* is a compendium on the art of writing in cipher, wherein the text is incomprehensible except to those who possess the key to the system used. Schott reviews the earlier cryptographic work of Trithemius, Selenus, Cardano, Porta, and Kircher and develops his own methods. Many forms of secret writing and hidden communication systems are discussed, as well as shorthand, sign language for the deaf, and secret codes concealed in music. [H]

**35 Lana Terzi, Francesco, 1631-1687**

*Prodromo; overo, Saggio di alcune inventioni nuove premesso all'Arte maestra*  
Brescia: Rizzardi, 1670

Italian naturalist and physicist Lana Terzi deals principally with problems of aeronautics, mechanical engineering, and microscopy, including a section on the construction of flying machines. Of special note are the opening sections, wherein alphabet and numerical ciphers are described. *Prodromo* includes an early illustrated description of a cipher employing musical notation, a method initially proposed by John Wilkins, Bishop of Chester, in his *Mercury; or, The secret and swift messenger* (London, 1641). Lana Terzi also proposes methods of writing for the blind and of teaching the deaf to speak, which he himself put into practice. [R]

**36 Falconer, John, 1577-1656**

*Cryptomenysis patefacta; or, The art of secret information disclosed without a key*  
London: D. Brown, 1685

John Falconer was a distant relative of David Hume’s family and a supporter of King James II. Held in high regard by Philip Thicknesse (1719-1792), the works of Falconer on secret writing and the conveying of concealed messages include



*Cryptomenysis patefacta* and *Rules for explaining and decyphering all manner of secret writing* (London, 1692). Of special interest in *Cryptomenysis* is a section on semeiology, which Falconer defines as “methods of secret information by signs and gestures.” Among such signs and gestures Falconer includes Egyptian hieroglyphs and finger alphabets (dactylology). A brief analysis of selected writings of Johannes Trithemius (1462-1516) concludes the work. *Cryptomenysis* was greatly influenced by Gaspar Schott (1608-1666) and John Wilkins, Bishop of Chester (1614-1672). [R·H]

**37 Rodríguez, Cristóbal, 1677?-ca. 1735**

*Bibliotheca universal de la polygraphia española*  
Madrid: A. Marín, 1738

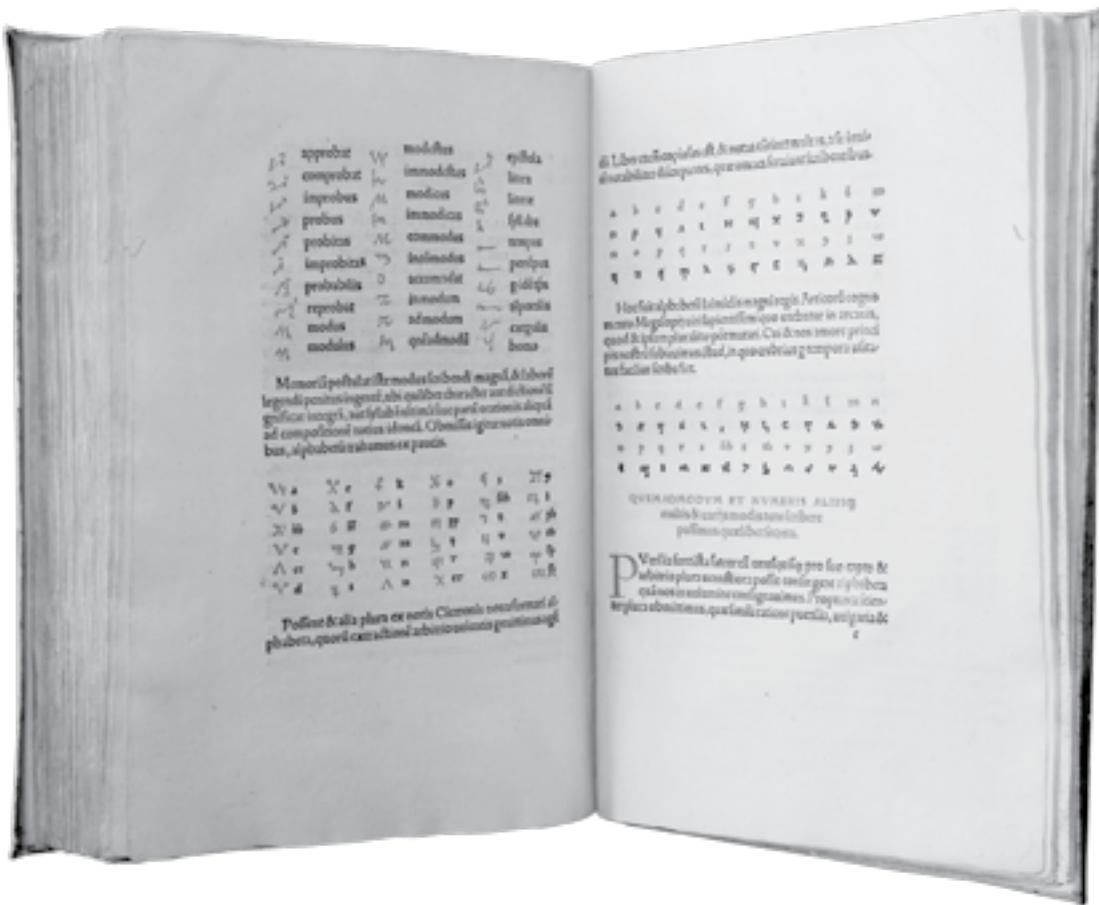
This work is generally considered to be the first complete study of cryptography and palaeography in Spain. It consists chiefly of numerous tables of alphabets and signs, and of facsimiles of

scripts and documents written in abbreviated forms. Rodríguez, archivist of the Cathedral of Avila and commissioner of the Inquisition at Valladolid, has inserted many transcriptions and explanatory material. The lengthy and erudite introduction by Blas Antonio Nassarre y Ferriz (1689-1751) deals with writing in Spain prior to the Arab invasion in 711. [R]

**38 Thicknesse, Philip, 1719-1792**

*A treatise on the art of decyphering, and of writing in cypher*  
London: W. Brown, 1772

This work deals primarily with the theory of secret writing rather than the practical applications of cryptographic methods. Thicknesse notes that he was moved to write this treatise by a comment concerning the neglect of the art of decyphering in the *Advancement of learning* by Francis Bacon (1561-1626), who had proposed a system of cryptography based on the so-called



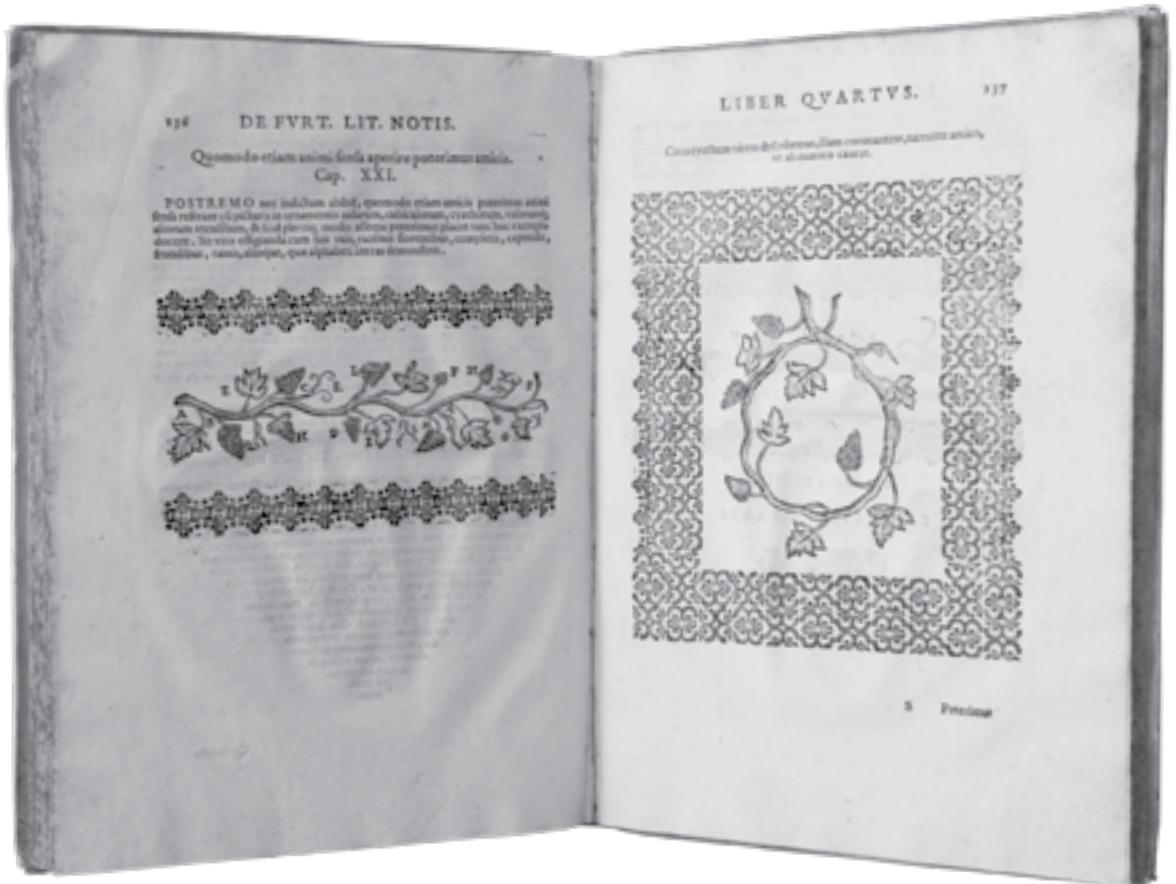
23 Trithemius, Johannes, 1462-1516 Polygraphice

double cipher. Of special interest is Thiccknesse's extensive section on the use of a harmonic alphabet, wherein musical notes are made to represent letters of the alphabet, elaborating in particular on the views of Bishop John Wilkins (1614-1672). Of the various methods for conveying secret messages, Thiccknesse considers the harmonic alphabet to be the least liable to suspicion. [R]

39 Cointet, Guy de

Arctic  
Los Angeles, 1971

Born in France and based in Los Angeles, de Cointet created language-based graphic art and performance pieces. In this work the artist employs a number of representational systems, including handwriting, symbols, and encrypted texts. Upon acquiring three of de Cointet's works for the Semeiology Collection, Philip Arnold wryly noted that "the three items under the name of Guy de Cointet were displayed by the Museum of Modern Art in Pasadena, California, as 'art.' I am unable to see them as 'art'; they are basically related to cryptography. ... They are an interesting (though unimportant) addition to the collection in that they show how broadly 'communication' can overlap other fields." [D]



40 Cointet, Guy de

*A captain from Portugal*  
Los Angeles, 1972

Philip Arnold, who was familiar with many of the cryptography and shorthand systems described in his collection, was able to decipher this short story by de Cointet. An excerpt from Arnold's decipherment provides a flavor of the work: "Lorna-Laura-Maria de Tarquino y Millet, a young married woman, the natural daughter of Robert of Italy, and Oona-Luna LeBlanc, her second cousin of fifteen, were chatting while walking in the bakaraguass. There, shooting up like columns of ivory ringed with brown were wax-palms one hundred and twenty feet high." [D]

41 Movie poster for *Enigma*

Cryptographers are the heroes of the 2001 film *Enigma*, based on the novel by Robert Harris. Taking some liberties with the facts, the film tells the story of how the Nazi German Enigma cipher was cracked by a team of World War II codebreakers at Bletchley Park. This movie poster is one of the more lighthearted items among a collection of scholarly cryptology-related materials from the collection of Francis Guelker, Washington University class of 1954. The collection of archival materials and some 100 books was acquired for the Semeiology Collection in 2003. [D]

the old testam <sup>t</sup>	151	mican	15	Above
genesis	29	nahum	9	abbominable
exodus	2	habacuk	2	abominable
leuiticus	8+	zeyhaniah	2	abominaton
numbers	5	haggai	8	about all things
deuteronomic	2	zechariah	22	abound
josua	5	malachie	2	about
judges	2+	-----		
ruth	2	ynewtestam <sup>t</sup>	1	accept & except
samuell	20	mathew	10	knowledge & acknowledge
kings	2	marke	2	accomplish
chronicles	2	luke	1	accord
nehemiah	2	iohn	8	one or owne
ester	2	acts	22	accord
job	2	rom:	2	account
psalmes	2	cor:	2	accuse
prouerbs	2	gall:	2	admonish
ecclesiastes	2	ephes:	2	aduantage
song of solo:	2	philippian	2	aduersary
canticles	2	colos:	2	adultery
isaiah	2	thesal:	2	aduersity
jeremiah	2	timo:	2	aduocate
lamentacon's	2	titus	2	afterwards
ezekiell	2	philemon	2	againc
daniel	2	hebrewes	2	against
hosea	2	james	2	againc &
joel	2	peter	2	againc
obadiab	2	jude	2	agree
jonah	2	reucla:	2	all
		amen		

alone		arguement
allowed &	2	arise
hallowed	2	arme harme
alpe	2	art heart
allsufficient	2	assemble
& else	2	asend
allsufficiency	2	asended
already	2	assist
although	2	aspoone
alltymes	2	attribute &
alwayes	2	attributes
althings	2	avoyd
ambassador	2	authority
amend	2	awakew
amendmt	2	& awoke
amount	2	away
angel	2	
if sabne angels	2	B
anger	2	Babe
any	2	
annoint &	2	babylon
annointed	2	backslide
another	2	backward
another tyme	2	baptize
answere	2	baptisme
antichrist	2	cause &
antichristian	2	because
apostle	2	befall
appeare	2	before
appoint	2	began beg
		begotten

**42 Shelton, Thomas, 1601-1650?**

*Zeiglographia; or, A new art of short-writing never before published*

London: Printed by M.S., 1659

Users of the Semeiology Collection examine types of writing in order to understand the means by which information is conveyed. Within the history of types of writing, stenography and cryptography have common origins; in this respect, shorthand may be regarded as a kind of cryptographic system. First published in 1649, this is Shelton's second important book on shorthand, following *Tachygraphy* (London, 1641). In the preface, Shelton states his aim "to so frame the letters, to fit with each other, that none could be composed to more advantage for speed." Books on shorthand which also explain the method used are included in the Semeiology Collection up to about 1700; there are also 19th-century books about shorthand systems. Books written in shorthand per se are not collected. [H]

**43 N.B. (Noah Bridges), fl. 1661** (see opposite and page 34)

*Stenographie and crytographie*

London: J.G. for the author, 1659

Stenographer and mathematician Noah Bridges was a royalist supporter of King Charles I. His *Stenographie* is a practical work on shorthand and secret writing. Bridges' system is the first to make extensive use of dots rather than alphabetic symbols to represent initial and final vowels. A much-expanded second edition appeared in 1662. The work was brought out again in 1665 with 22 pages of additional material under the title *Rarities; or, The incomparable curiosities in secret writing explained*. [R·H]

**44 Ramsay, Charles Aloysius, fl. 1689**

*Tacheographia, seu Ars celeriter & compendiosè quaelibet inter perorandum verba*

Parisiis: 1683

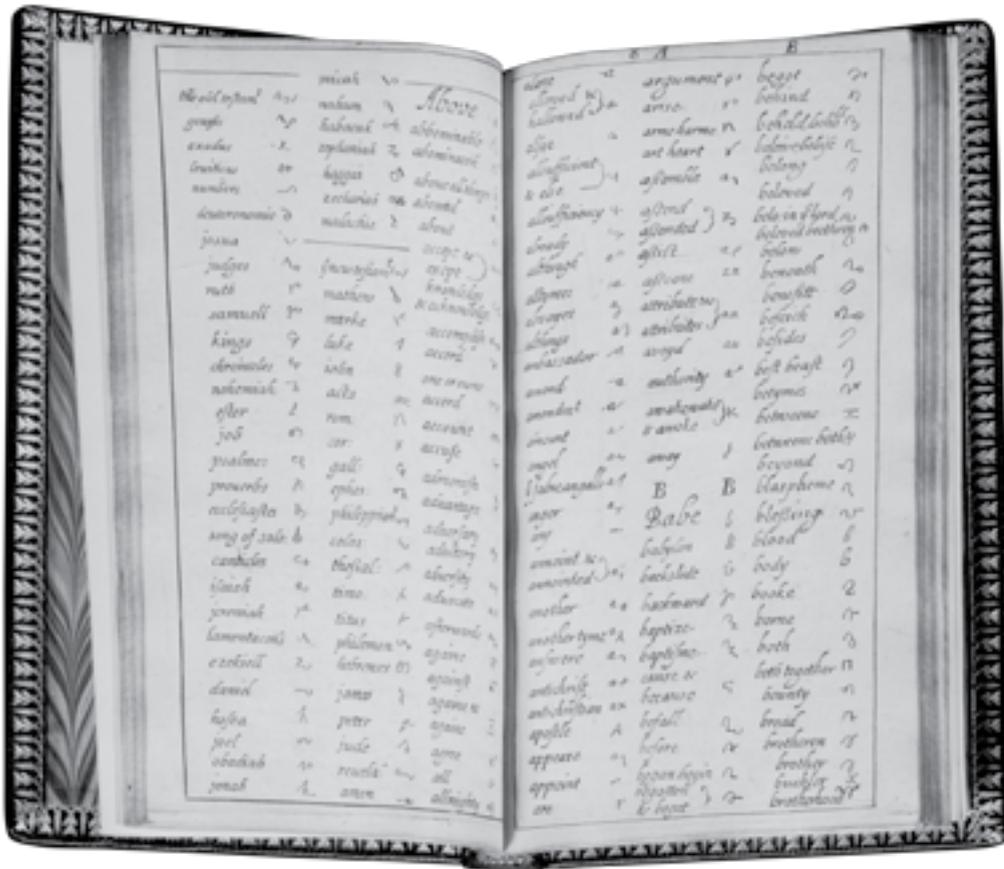
Originally published at Frankfurt am Main in 1678, this title is considered the earliest independent German manual on stenography. This Paris edition of 1683 includes both Latin and French versions on parallel pages. Ramsay's work is a slight modification of the system proposed in Thomas Shelton's *Tachygraphy* (London, 1635), known chiefly at the present time for its use by Samuel Pepys (1633-1703) in writing his *Diary*. The French version exhibits the greatest divergence from Shelton's method, including the adoption of simple signs for several alphanumeric characters. *Tacheographia* includes an appendix on processes of cipherment. [R]

**45 Mason, William, fl. 1672-1709**

*La plume volante. Or, The art of short-hand improv'd*

London: Printed for the author, 1707

The most important English stenographer of the 17th century, Mason produced three works on shorthand of which *La plume volante* is the last. Mason derives part of his system from that of Jeremiah Rich, published in 1646. He employs alphabetic signs, symbols, and arbitraries. Mason's system is the first to make use of a small circle for "s" in addition to its alphabetic sign. His work was re-issued by Thomas Gurney in 1740. Gurney's own position as shorthand writer of the Central Criminal Court in London secured the perpetuation of Mason's shorthand method to the present day. This copy of *La plume volante* bears the bookplate of Hugh Cecil, 5th Earl of Lonsdale (d. 1944). [R]



43 N.B. (Noah Bridges), fl. 1661 Stenographie and crytographie

46 Carpentier, Pierre, 1697-1767

*Alphabetum Tironianum, seu Notas Tironis explicandi methodus*

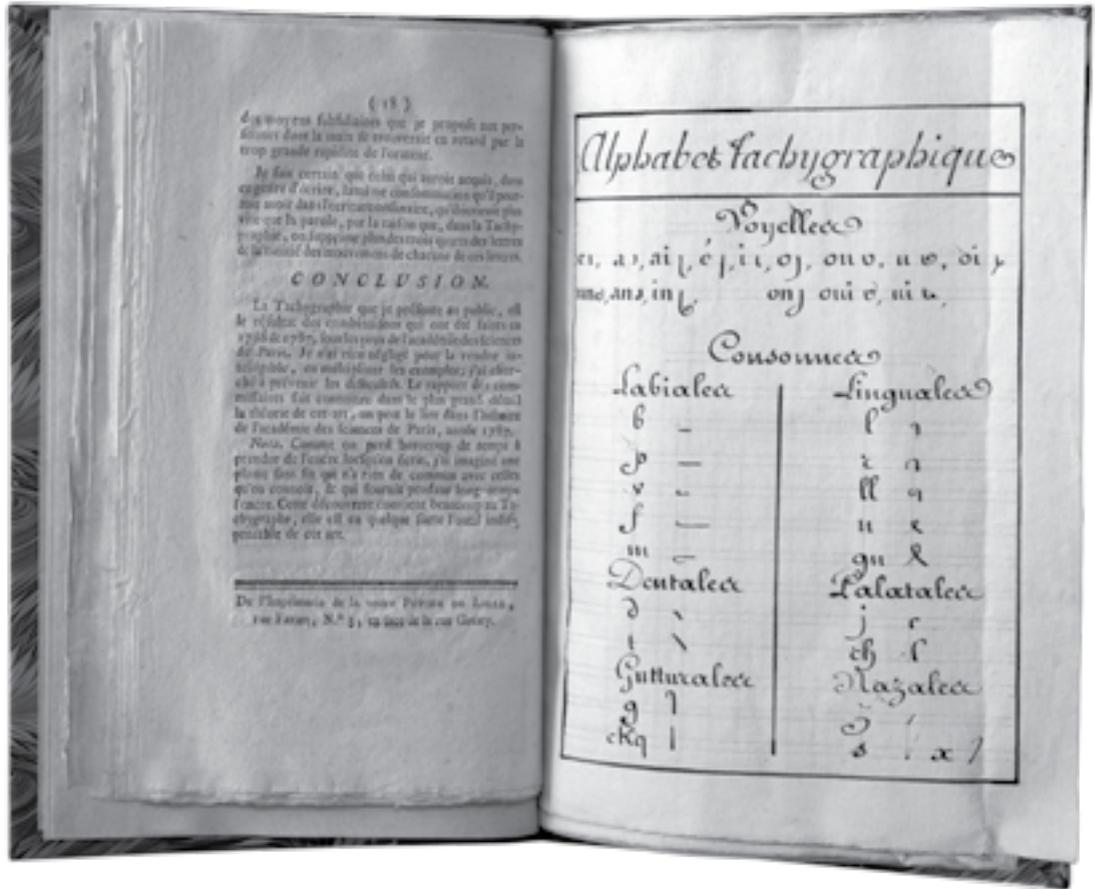
Lutetiae Parisiorum: Hippolytum-Ludovicum Guerin & Jacobum Guerin, 1747

Carpentier's work is an early attempt to explain the cipherment and decipherment of Tironian notes, said to have been invented by M. Tullius Tiro, freedman of Cicero. One of the earliest forms of shorthand, Tironian notes utilize a tachygraphic system, that is, one in which the alphabetic characters used have an ideographic value. One of its features, that of employing initial letters to represent words, is still in use today, as, for example, the use of "A.D." for "Anno Domini" and "N.B." for "nota bene." Carpentier devotes considerable attention to the Latin manuscript number 2718 at the Bibliothèque Nationale, Paris. His work has been largely discredited by later studies. [R·H]

47 Taylor, Samuel, 1749-1811

*An essay intended to establish a standard for the universal system of stenography, or, short hand writing*  
London: Printed for the author, 1786

This is the first edition, first issue, of Taylor's work, perhaps one of the most influential in the field of stenography. Like that of John Byrom, whose *Universal English short-hand* appeared in 1767, Taylor's system is noted for its brevity. It consists of only a consonantal alphabet of 19 letters and a few abbreviating rules. Many later editions appeared, the most important being that edited by William Harding in 1823. Taylor's work established the art of stenography in England, and his system came into general use on the continent and in the United States. This copy bears the author's autograph signature, together with the bookplate of Charles Bathurst. [R]



## 48 Coulon de Thévenot, Jean Félicité, 1754-1813

(see above)

*L'art d'écrire aussi vite qu'on parle*

Paris: chez l'auteur, 1795

Originally published in 1777, Coulon de Thévenot here presents the first shorthand system of significance invented in France. His system is noted for disjoining vowels from consonants. The work saw numerous editions. The present edition incorporates revisions made by the author in 1786 and 1787. While generally shorthand books of this period were printed from engraved plates, this edition of *L'art d'écrire* has the symbols and characters used inserted by hand. [R·H]

## 49 Martí, Francisco de Paula, 1762-1827

*Tachigrafía de la lengua castellana*

Barcelona: A. Roca, 1816

The father of Spanish stenography, Francisco Martí first published his shorthand system in 1803. His alphabet is a combination of those of Coulon de Thévenot and Samuel Taylor. Martí's method became the basis of several later shorthand systems, including that of Francisco Serra y Ginesta (1816). His work also enjoyed the support of the Spanish government, which on November 21, 1802, set up a public professorship of shorthand at Madrid. Martí became the first to hold this position. [R]

mentionem heic injicere, ac notas ipsas ingeniis cu-  
 riosioribus enucleandas proponere, ut nihil celem  
 quod in hoc literaturæ genere, unquã observaverim.  
 Quatuor autẽ quantum adhuc observare licuit, saxa &  
 lapides hisce insigniti extant in locis. In Scania qui-  
 dem Daniae duobus: In Asloensi Norvegiæ Diœcesi  
 tem duobus, sed res ipsa oculis subjecta, lectorem de  
 singulis melius instruet.

Monumentum  
 Leragricense.

Primum hisce notis consignatũ monumentũ *Ler-  
 agria in Blekingia* conspicitur & in hunc modũ se habet



**50 Kircher, Athanasius, 1602-1680**

*Prodromus coptus sive aegyptiacus*  
Romae: S. Cong. de propag. Fide, 1636

This is one of several works in which Kircher, Professor of Oriental Languages at Würzburg and Rome, brought to the attention of the scholarly world the importance of Egyptian hieroglyphs. *Prodromus* is concerned primarily with the study of the Coptic language and the institutions of Coptic Christians. In a lengthy section devoted to the language, Kircher compares Coptic to Greek, Hebrew, and other oriental languages. He gives particular attention to the possibility of finding Coptic words and names in Egyptian hieroglyphs. [R·H]

**51 Worm, Ole, 1588-1654** (see opposite and page 38)

*Runic, seu, Danica literatura antiquissima*  
Hafniae: Melchioris Martzan, 1636

This is one of the earliest works on runes — the alphabet of ancient Germanic peoples — and on early Danish literature, prepared by a Danish physician interested in prehistoric archaeology. In this pioneer work, Worm collected everything that had been written on the subject and also provided his own theories. He was mostly concerned with the development of runic writing and gave many examples of runic poetry. At the end of the book is a letter, *De monumento Trygveldensi*, addressed to Tycho Brahe (1546-1601), the Danish astronomer, who apparently shared Worm's interest in runic remains. [H]

**52 Worm, Ole, 1588-1654**

*Danicorum monumentorum*  
Hafniae: I. Moltkenium, 1643

This work by Worm is particularly important for its description of many Danish monuments and inscriptions now lost. Worm devotes a major portion of the work to the study of runes. Bound with this copy of *Danicorum monumentorum* is a copy of the author's *Fasti Danici* (Copenhagen, 1643), a work dealing with runic calendars. This volume bears the bookplate of John Campbell, 3rd Earl of Breadalbane (ca. 1696-1782). [R]

**53 Pignoria, Lorenzo, 1571-1631**

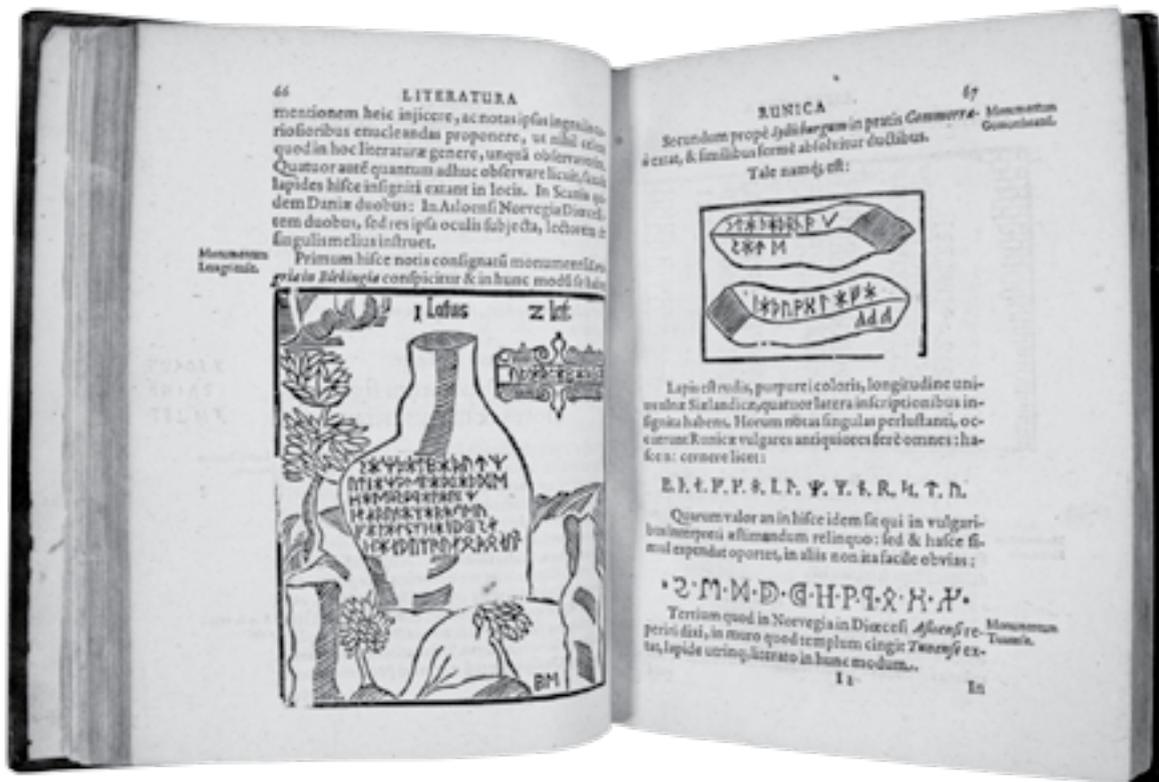
*Mensa Isiaca, qua sacrorum apud Aegyptios ratio*  
Amstelodami: Sumptibus Andreae Frisii, 1669

Pignoria was the first to describe, in 1605, the Isiac table, the famous stone tablet supposed to explain the process of initiation into the cult of Isis, the Egyptian nature goddess. *Mensa Isiaca* is one of several significant early works on hieroglyphic writing found in the Semeiology Collection; others include important 16th-century editions of the Greek writer Horapollo. [H]

**54 Champollion, Jean-François, 1790-1832**

*Précis du système hiéroglyphique des anciens Égyptiens*. 2nd edition. 2 volumes in 1  
Paris: Imprimerie royale, 1827-1828

Known as the founder of Egyptology, Champollion recorded in this work the result of his efforts to decipher Egyptian hieroglyphs. By equations of demotic and hieroglyphic characters, he was able to identify native Egyptian names and to demonstrate the relationship between the ancient Egyptian and Coptic languages. Although he was unable to decipher the Rosetta Stone inscription, Champollion's work clearly



51 Worm, Ole, 1588-1654. Runic, seu, Danica literatura antiquissima

established the alphabetic character of Egyptian hieroglyphic writing. *Précis* first appeared in 1824. It was supplemented by *Grammaire Egyptienne* (Paris, 1836-1841) and *Dictionnaire Egyptien* (Paris, 1841-1843), both edited from manuscripts by Champollion's brother, Jacques Joseph Champollion-Figeac (1778-1867). Before his death, Champollion succeeded in translating lengthy texts in hieroglyphic and hieratic, but his work was contested by many after his death. [R]

Brasseur's fellow archaeologist, Joseph Marius Alexis Aubin (b. 1802). In it Aubin demonstrates how Mexican pictographs were used not only to represent objects, but also to stand for the syllables forming a word. *Histoire* paved the way for Brasseur's announcement in 1863 of his own discovery of a key to the Mexican hieroglyphs. Unfortunately, his attempts at decipherment were failures, and his hieroglyphic key is of questionable value. [R]

55 Brasseur de Bourbourg, abbé, 1814-1874

*Histoire des nations civilisées du Mexique et de l'Amérique-Centrale*. 4 volumes  
Paris: A. Bertrand, 1857-1859

A Belgian ethnographer and Roman Catholic priest, Father Brasseur spent much of his life as a missionary in Mexico and Central America. *Histoire* is the first of several works on that area's people and language. Several sections give general comments on the languages of Mexico. Of particular note is the work's introduction by

56 Chadwick, John, 1920-1998

*The decipherment of Linear B*  
Cambridge: University Press, 1959

Writing primarily for the layman, Chadwick here presents an account of the decipherment of the famous tablet found at Knossos in Crete and Pylos in Greece. The work of British architect and amateur cryptographer Michael Ventris (1922-1957), the project brought to light the oldest form of Greek, commonly referred to as Mycenaean Greek, or Linear B. A companion

volume to Chadwick and Ventris's *Documents in Mycenaean Greek* (Cambridge, 1956), *Decipherment*, first published in 1958, explains in detail the processes used by Ventris. First announced in 1953, Ventris's technique includes the use of the combinatory method and statistical analysis. Chadwick's book is, in part, a defense of Ventris's work, which has won wide but not universal acceptance, the most important critic being A.J. Beattie, professor of Greek at Edinburgh. [R]

**57 Gordon, Cyrus Herzl, 1908-2001**

*Forgotten scripts: their ongoing discovery and decipherment*. Revised and enlarged edition  
New York: Basic Books, 1982

Like the Chadwick volume, this work by the scholar of biblical studies and Near Eastern languages is written in an accessible style. After receiving his PhD from the University of Pennsylvania and conducting fieldwork in the Near East, Gordon headed a cryptanalysis team in the U.S. military. In this work, he provides an overview of cryptographic methods and their application to ancient languages, discussing how various languages such as Sumerian, Linear B, and others were deciphered. [D]

**58 Evreinov, Eduard Vladimirovich, et al.**

*Primenenie elektronnykh vychislitel'nykh mashin v issledovanii pis'mennosti drevnikh maiia*. 3 volumes  
Novosibirsk: Izd-vo Sibirskogo Otdeleniia AN SSSR, 1961

Under the sponsorship of the Academy of Sciences at Novosibirsk, this work presents an attempt to interpret Mayan hieroglyphs by the use of computer technology. Volumes 1 and 2 give facsimiles of the Mayan manuscripts Codex Tro-Cortesianus at the Museo de América in Madrid and Codex Dresdensis Maya at the Sächsische Landesbibliothek, Dresden. Each section of manuscript is accompanied by a numeric transcription of the hieroglyphs and a proposed textual transliteration. Volume 3 is a systematized catalog of the hieroglyphs in the Madrid and Dresden codices, together with their computer-program equivalents. [R]

**59 Codex Cospi, Calendario messicano 4093:**  
*Biblioteca universitaria Bologna* 2 volumes  
Einleitung und Summary [von] K. A. Nowotny  
Graz, Austria: Akademische Druck u. Verlagsanstalt, 1968

This handsome facsimile reproduces one of the few surviving pre-Hispanic Mesoamerican codices. A ritual calendar painted on deerskin, its provenance is uncertain, but it is thought to be Aztec or Mixtec. Various of the astronomical cycles shown have yet to be interpreted, but there has been some discussion of the iconography relating to the Venus tables: "The rising of Venus just ahead of the sun was a decidedly baleful event to the Aztecs" (Levenson, *Circa 1492*, p. 544). A number of adverse events associated with this condition are depicted. [D]

ORBIS FATA REGIT.

TANTO MONTA.

PAR ONERI INCEDIT



CMXXXII.

CMXXXIII.

CMXXXVI.

NEC PLURIBUS IMPAR.

MOLI SUFFICIT ARDUE.

OMNIBUS UNUS.



CMXXXVII.

CMXXXVIII.

CMXXXIX.

MIHI TERRA LACUSQUE

UNDARUM TERREQUE POTENS.

DUO PROTEGIT UNUS.



CMXL.

CMXLI.

CMXLII.

FRANGUNTUR NESCIAM VINCI

CULMINA SUMMA PETENS

ET BELLI ET TESSERA PACIS.



**60 Rabanus Maurus, Archbishop of Mainz, 784?-856**

*De Laudib[us] sancte Crucis opus*  
Phorçheim: T. Anshelm, 1503

This remarkable book is the first printed edition of the author's poem "In Praise of the Holy Cross." The piece is printed as a figure poem, that is, a poem over which are superimposed a variety of figures. These include Christ Crucified, evangelistic symbols, cherubim, and King Louis the Pious of France. Some pages were printed entirely from movable type. In more complicated instances, the entire page is cut with its figures on wood, in imitation of type. In still other cases, the letters immediately surrounding the figure are cut on the block, while the remaining area of the page is filled in with movable type. Although figure poems were common in manuscripts, *De Laudibus sancte Crucis* is the first instance of this form of symbolic poetry to appear in printed form. Included in the work are several neo-Latin poems by Johann Reuchlin (1455-1522), Sebastian Brant (1458-1521), and other humanists. [R·H]

**61 Alciati, Andrea, 1492-1550**

*Diverse imprese accomodate a diuerse moralità*  
Lione: Gulielmo Rovillio, 1551

Influenced by Egyptian hieroglyphics, which he considered ideographs, Alciati was the first to fully develop emblems, defined by Mario Praz as "things (representations of objects) which illustrate a conceit." Allegorical pictures were commonplace in the Renaissance, but Alciati attached verses, often taken from the Greek and Latin poets, to his. In combination, the emblems were understood to have not only allegorical power but layers of meaning dependent on a knowledge of the references and allusions. This may be seen in the emblem of the serpent with a

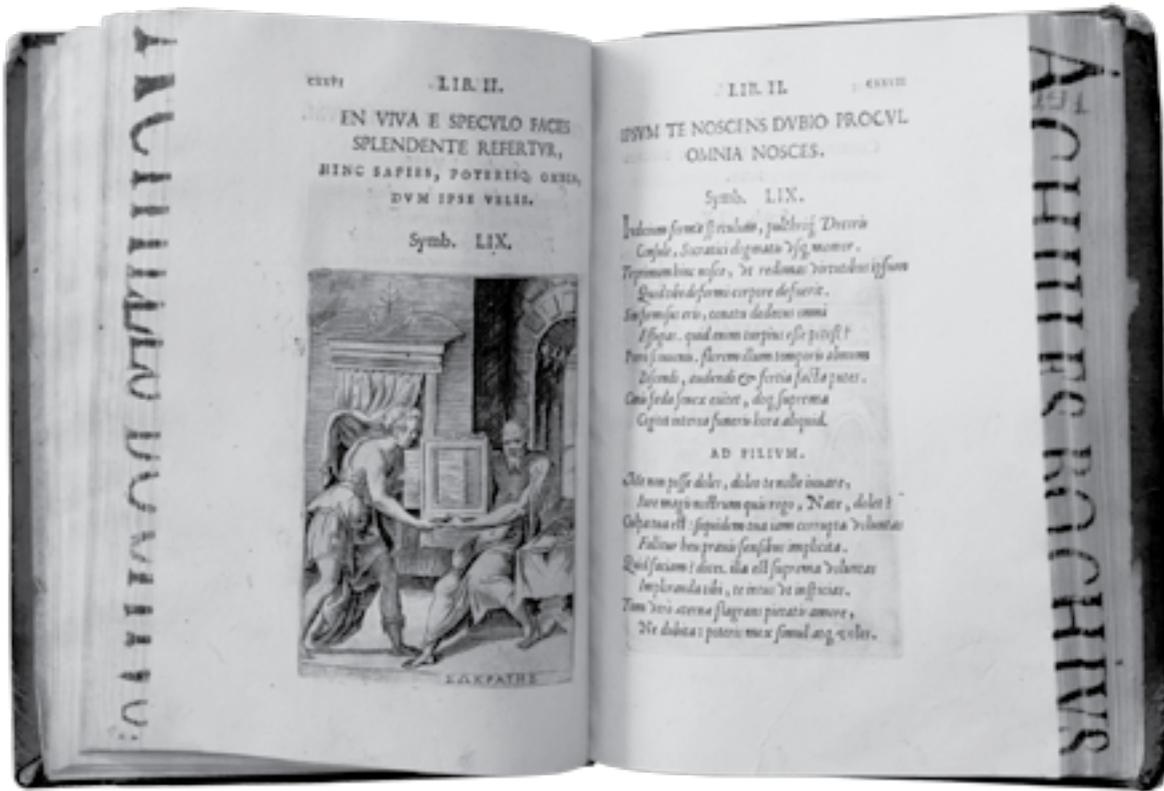
tail in his mouth surrounding a sea-beast, who is blowing on a conch shell. The motto reads: "From the study of literature one acquires immortality." The verse describes the picture, but the viewer would need to know that the sea-beast is the god Triton, that the trumpet represents fame, and that the serpent stands for eternity. In toto, the emblem conveys the message of the motto. [H]

**62 Horapollo**

*De sacris Aegyptiorum notis*. 2 volumes in 1  
Parisiis: Galeotum à Prato &  
Ioannem Ruellium, 1574

Renaissance humanists rediscovered Horapollo's ancient writings on hieroglyphics, finding in his studies confirmation of the view that ancient texts of all kinds contained not only literal information but allegorical meaning encoded in symbols. Indeed, to 16th-century classicists, the whole universe was seen to be a sort of rebus, the deciphering of which would produce moral lessons. Horapollo's "translations" of the hieroglyphs were especially valuable because he interpreted them as visual forms of abstract ideas, in other words, as emblems. The iconography of Horapollo was in turn incorporated into 16th- and 17th-century art and literature. Modern scholars of this period now closely examine texts like this one in order to understand the context in which such art was created.

The Latin by Bernardinus Trebatius is the earliest translation from the Greek; the French translator is anonymous. The illustrations have been ascribed to Jean Goujon. The Semeiology Collection also holds several early 16th-century editions of Horapollo's *Hieroglyphica* as well as an important 1727 edition. [H]



63 Bocchi, Achille, 1488-1562 *Symbolicarum quaestionum, de universo genere, quas serio ludebat, libri quinque*

63 Bocchi, Achille, 1488-1562 (see above)

*Symbolicarum quaestionum, de universo genere, quas serio ludebat, libri quinque*  
Bononiae: Societatem Typographiae Bononiensis, 1574

In *The art of memory* (1966), Frances Yates connects the Renaissance Italian emblems (*imprese*) to the use of memory images, explaining their frequent source in Hermetic-Cabalist symbols; *imprese* are relevant to her discussion of Giulio Camillo's Memory Theater. Achille Bocchi, whose verses are illustrated by 151 emblematic copper engravings by Guilio Bonasone, was among the writers on symbols and *imprese* included in Camillo's circle of friends.

The book is open to the engraving of Mercurius Trismegistus invoking silence. He holds aloft the seven-branched golden candlestick of the Apocalypse. Scholars have shown that the striking illustrations throughout Bocchi's book influenced English artists William Blake and Samuel Palmer two centuries later. [H]

64 Camilli, Camillo, d. 1615

*Imprese illustri di diversi*. 3 volumes in 1  
Venetia: Francesco Ziletti, 1586

An assemblage of books only becomes a true collection when subject parameters are set for making it so. Books depicting symbols are legion, and it would be tempting to add as many as could be found. The Semeiology Collection excludes, for example, emblem books that have plates illustrating moral poems or discourses unless they also explain the symbols that are used. Camilli's book is illustrated with 108 allegorical and emblematic figures engraved on copper by Girolamo Porro. The book's design is unusually successful in that woodcut decorations have been used. It is rare for metal engravings and woodcuts to look so well together. [H]

**65 Capaccio, Giulio Cesare, 1552-1634**

*Delle imprese*. 3 volumes in 1  
Napoli: G.G. Carlino & A. Pace, 1592

This is the first edition of an encyclopedic work on emblems and devices, divided into three parts. In the first two books, Capaccio examines in detail theories of emblems and devices and discusses as well the interpretation of hieroglyphics, the symbols on coins, and the significance of colors. Part 3 contains oval emblems based on the animal kingdom. According to the bibliographer John Landwehr, this is the first emblematic item to deal with flora and fauna. [H]

**66 Valeriano, Pierio, 1477-1560** (see page 45)

*Hieroglyphica, seu De sacris Aegyptiorum aliarumque gentium literis commentarii*  
Lyons: Thomas Soubbron, 1594

Originally published in Basel in 1556 and dedicated to Cosimo de' Medici (1519-1574), *Hieroglyphica* is the first modern study of Egyptian hieroglyphs. In the humanist tradition of Alciati, Valeriano brings together the allegorical symbolism of medieval bestiaries and the symbolic approach to Egyptian writing. While drawing on Horapollon, Valeriano views his own *Hieroglyphica* as a supplement to and improvement upon that author. Thus, like Horapollon, he endeavors to explain Egyptian hieroglyphs as abstract concepts in visual form, as pictorial symbols revealing divine truths. At the same time, Valeriano attempts to explain other pagan mysteries, and therefore collates a wide variety of passages from ancient authors that deal with visual symbolism. However, *Hieroglyphica* is more often marked by the erudition and imagination of its author than by sound judgment, and its chief weakness is Valeriano's Neoplatonist insistence on drawing a wholly consistent allegorical interpretation of all ancient mythology. This particular edition includes notes by Celio Agostino Curione (1538-1567). [R]

**67 Camerarius, Joachim, 1534-1598**

*Symbolorum & emblematum ex animalibus quadrupedibus desumptorum centuria altera collecta*  
Noribergae: P. Kaufmann, 1595

Camerarius opens his work on the symbolism of animals with a six-page laudatory poem. The text has 100 circular copperplates by Hans Sibmacher, with a motto, a distich, and prose commentaries. Bound with this is Camerarius's similar work on plants, published in 1593. He also produced a volume on insects in 1597 and one on fish and reptiles in 1605. Copies of all of these are held in the Semeiology Collection. [H]

**68 Porphyrius, Publilius Optatianus**

*Panegyricus dictus Constantino Augusto. Ex codice manuscripto Paulli Velseri*  
Augustae: Ad Insigne Pinus, 1595

This is the first separate edition of these ingeniously printed poems, believed to be the earliest acrostic verses. Some are square poems, having as many lines as each line contains letters. Other poems represent figures or objects. Still others have certain letters that can be marked to form patterns and at the same time special verses or maxims. An earlier owner has faintly colored the pattern in these. At the end is a 72-line poem consisting of 18 quatrains, for each of which the same 20 words are used in a different order. Porphyrius was a Christian poet from Africa. He was exiled for some reason, but allowed to return after addressing this panegyric to Emperor Constantine. This very rare book has been handsomely restored and bound in modern vellum over boards. [H]

69 **Rinaldi, Giovanni de**

*Il mostruosissimo mostro*

Venetia: L. Spineda, 1599

First published at Ferrara in 1584, Rinaldi's work also appeared under the title *Il vago, et dilettevole, giardino* (Pavia, 1593). The two parts of this work deal with the iconology of colors and the symbolism of herbs and flowers. Rinaldi aims at teaching the manner of explicating emblems and allegories. Bound with this copy are two similar works by Pellegrino Morato and Sicile. The *Significato de' colori e de' mazzoli* (Venice, 1599) of Fulvio Pellegrino Morato deals with the symbolism of flowers and colors. The *Trattato dei colori delle arme nelle livree et nelle divise* (Venice, 1599) of Sicile, herald to Alphonso V, King of Aragon, deals with color symbolism in heraldry. [R]

70 **Estienne, Henry, sieur des Fossez**

*The art of making devises ... translated into English by Tho. Blount*

London: Printed by W.E. and I.G. and are to be sold by R. Marriot, 1646

Estienne's work first appeared in French at Paris in 1645. Dealing primarily with theoretical aspects, *The art of making devises* also discusses their design, their relationship to emblems, and the common derivation of both from Egyptian hieroglyphs. The appearance of Estienne's work in a translation by Thomas Blount (1618-1679) reflects a widespread taste for device and emblem literature in England, despite the genre's failure to flourish there. Its poor engravings reflect the imitative character of the illustrations used in many 17th-century British books of emblems and devices. [R]

71 **Alciati, Andrea, 1492-1550**

*Declaración magistral sobre las Emblemas de Andres Alciati.*

Valencia: Geronimo Vilagrassa, a costa de Geronimo Sanchiz, 1670

Originally published in Latin under the title *Emblematum liber* at Augsburg in 1531, Alciati's work became perhaps the most widely used

and admired of the emblem books produced during the 16th and 17th centuries and was translated into French, Italian, and Spanish. Many of the verses are translations from the *Planudean anthology*, while others are derived from Pliny, Stobaeus, and Pausanias. In this edition of 1670 the verses, in Latin, are accompanied by poorly executed wood and copper engravings of an unknown artist. Appended to each emblem are extensive notes in Spanish by Diego López (d. 1655), a schoolmaster at Toro, Spain, whose edition of Alciati first appeared at Najera in 1615. [R]

72 **Sandrart, Joachim von, 1606-1688**

*Iconologia deorum, oder Abbildung der götter, welche von den alten verehret Worden*

Nürnberg: C.S. Froberger, in Verlegung des Authoris, 1680

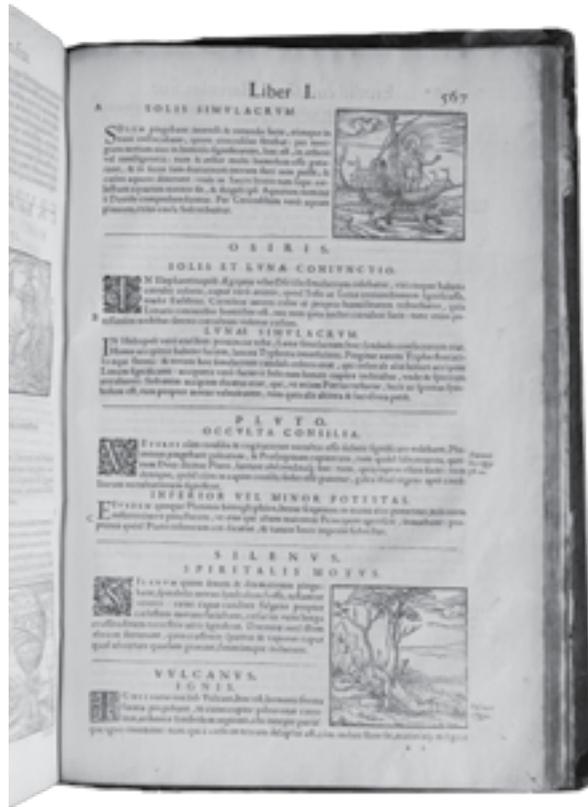
This is the first edition of Sandrart's directory for the representations of the ancient gods, clarifying the mythological allusions and allegorical mystifications then commonly used. Although the book relies heavily on earlier writers such as Ripa (*Iconologia*, 1644), also found in the Semeiology Collection, Sandrart has reinterpreted their imagery. He also adds a dozen pages of original material describing the symbolic meaning of certain animals and plants and of other items such as mirrors. The book is known to be very rare today. [H]

73 **Bosch, Jacob** (see page 40)

*Symbolographia, sive De arte symbolica sermones septem*

Augustae Vindelicorum; Dilingae: J.C. Bencard, 1702

Prominent among the producers of emblem and device books were members of the various religious orders. A device has been defined by Mario Praz as "a symbolical representation of a purpose, a wish, a line of conduct ... by means of a motto and picture which reciprocally interpret each other." In *Symbolographia* the Jesuit Bosch produced a work dealing with the entire range of hieroglyphic devices, portraying religious, heroic, moral, and character-of-life themes.



Preceding each group of devices are short explanatory notations concerning the allegorical symbolism employed. Included are 2,052 devices engraved by Johan Georg Wolfgang and Jacob Müller. First published in 1701, this issue includes an engraved portrait of Karl, Archduke of Austria (1685-1740), later Emperor Karl VI, to whom the work is dedicated. [R]

#### 74 Horapollo

*Hieroglyphica graece & latine*

Trajecti ad Rhenum: Melchior Leonardum Charlois, 1727

Horapollo's *Hieroglyphica* began a fashion for Egyptian hieroglyphs whose influence continued well into the 18th century. The Greek text, said to have been translated from an Egyptian original by a certain Philippus, otherwise unknown, was first published in an edition of Aesop printed at Venice in 1505 by Aldo Pio Manuzio. A Latin translation appeared at Augsburg in 1515, and numerous editions followed. This edition of 1727

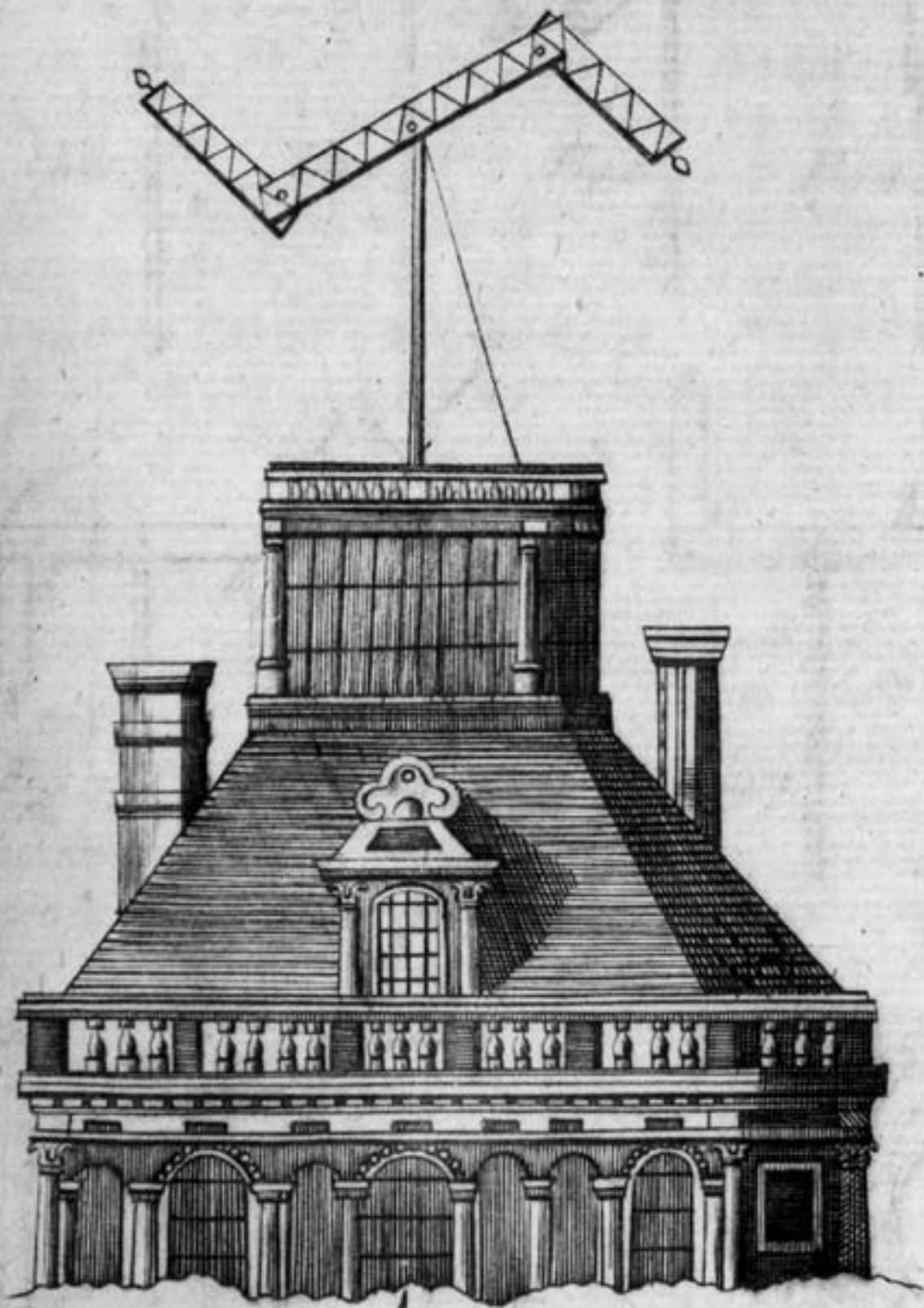
contains both the Greek and Latin texts, and includes commentaries by Jean Mercier (d. 1570), David Hoeshel (1556-1617), and Nicolas Caussin (1583-1651), author of *Symbolica Aegyptiorum sapientia* (Cologne, 1522). This copy bears the signed autograph presentation of the editor, Johannes Cornelius de Pauw (d. 1749).

Horapollo's work, in essence, is an explanation of Egyptian hieroglyphs interpreted as visual forms of abstract ideas, in other words, as emblems. Although the work of Jean François Champollion (1790-1832) and later writers has shown this view to be in error, nevertheless, at least 13 of Horapollo's hieroglyphs are known to be correct. Horapollo's work also had its influence on letter forms. As George Boas has pointed out, Geoffroy Tory, whose *Champ fleury* appeared in Paris in 1529, views the shape of letters as having a mystical meaning, a view taken by Tory from Horapollo and passed on by him to François Rabelais (1490-1553). [R]

#### 75 Delachénaye, B.

*Abécédaire de flore, ou Langage des fleurs*  
Paris: P. Didot l'Ainé, 1811

In this work, Delachénaye offers his reader an alphabet of flowers. By substituting flowers, most of whose names begin with successive letters of the alphabet, for various individual letters, one would have, he claims, an appropriate visual alphabet to represent or symbolize beautiful thoughts and words. Appended to the main work are three sections containing descriptions of flowers and birds, followed by a brief essay on the symbolic use of flowers in emblems and devices. [R]



*Telegraph  
auf dem Louvre zu Paris.*

**76 Bergsträsser, Johann Andreas  
Benignus, 1732-1812**

*Ueber Signal-, Order und  
Zielschreiberei in die Ferne*

Frankfurt am Main: Andreäischen  
Buchhandlung, 1795

In this work, Bergsträsser develops a synthe-matographic, or “whole communication” system, employing a telegraphic apparatus that uses both visual and auditory signals. The author is particularly anxious to demonstrate the difference between his own scheme for signaling and that of the Frenchman Claude Chappe. Bergsträsser argues that Chappe merely modified an earlier optical system proposed by the English experimental philosopher Robert Hooke (1635-1703), while his own scheme is not subject to the limitations of sight. Bergsträsser sees his synthe-matograph as primarily suited to military uses. He is also the author of *Ueber sein am ein und zwanzigsten Decembr, 1784* (Hanau, 1785-1786), also on signaling. [R]

**77 Chappe, Claude, 1763-1805** (see opposite, page 49)

*Beschreibung und Abbildung des Telegraphen*  
Augsburg: C.F. Bürglen, 1801

Claude Chappe, a French engineer, developed perhaps the most widely used optical telegraph in France. The French Legislative Assembly adopted the device in 1792. The device itself consisted of a transverse bar mounted on a post. At the end of this bar two small arms were fastened with pivots, making it possible to form symbols of letters and numbers by various positions of the bars. In view of earlier proposals by Gaspar Schott (1608-1666) and Robert Hooke, and the military signaling described by the Greek writer Polybius (205-125 B.C.), the originality of the device was soon attacked by Johann Bergsträsser and others. Chappe’s invention was defended, however, by his elder brother, Ignace Urbain Jean Chappe, in his *Histoire de la télégraphie* (Paris, 1824). [R]

78 **Macdonald, John, 1759-1831** (see opposite)

*A treatise explanatory of a new system of naval, military and political telegraphic communication of general application*

London: T. Egerton, 1817

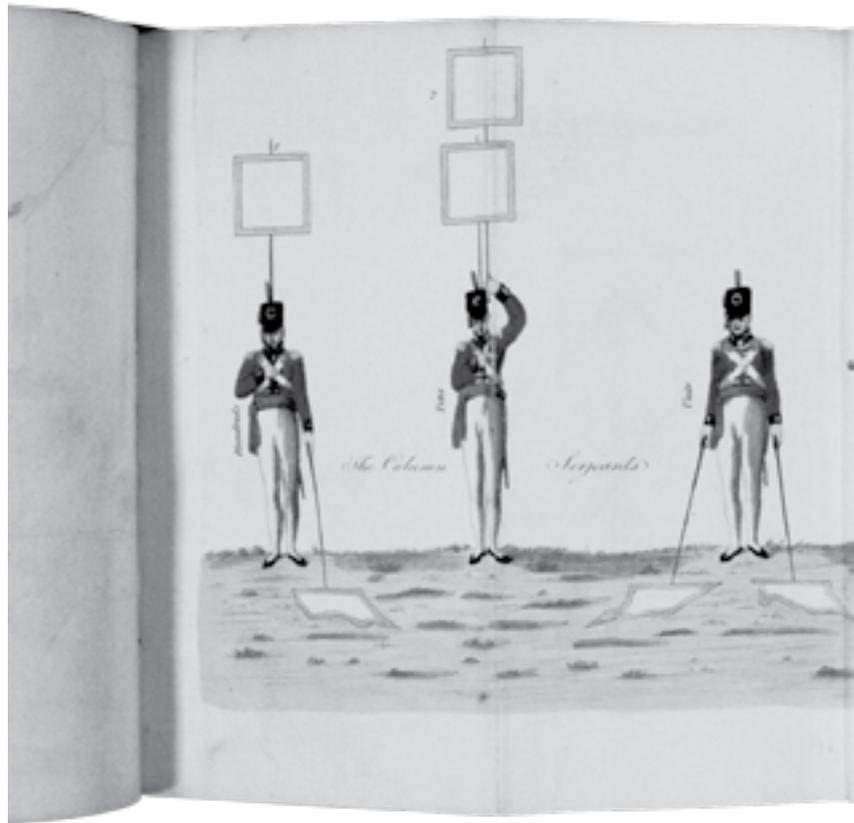
A civil and military engineer in Sumatra from 1783 until 1796, and later lieutenant-colonel of the Royal Clan Alpine Fencible Infantry in Ireland, MacDonald published several military works and was very much interested in the improvement of naval and military telegraphs. His first work on this subject, *A treatise on telegraphic communication*, appeared in London in 1808. *New system* is an expanded version of that work. The first part is an explanatory treatise on types of telegraphs for both night and day, land and sea use. The second part of the work is a telegraphic dictionary, that is, numeric equivalents for words and phrases to be used in signaling. It is of note that he suggests that, were such numeric dictionaries made bilingual, they could be made the basis of communication between two parties who do not know each other's language. This copy bears the author's signed autograph presentation inscription to Sir John MacGregor Murray. [R]

79 **Goddard, William, fl. 1800**

*Observations, strictures & remarks on telegraphic correspondence*

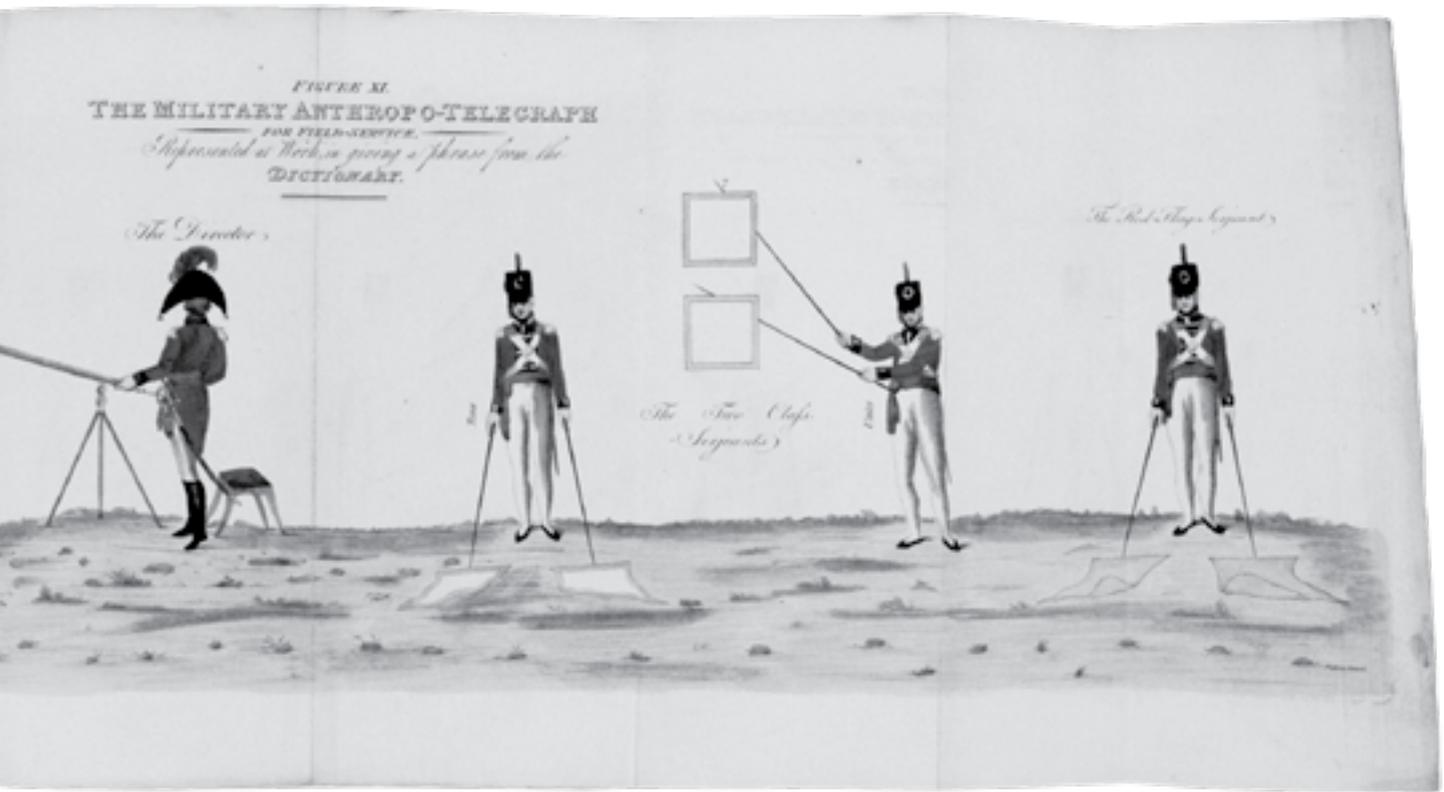
Manuscript, Chatham, England, 1803

In 1796, the British Admiralty set up an optical telegraphic system modeled on that of Chappe and based entirely on the use of the alphabet. In this unpublished work, Goddard sets forth his attempts to secure a change in the system used by the Admiralty by recording his discussions of the subject with William Marsden (1754-1836), secretary of the Admiralty and vice-president of the Royal Society. Goddard proposes both the use of the alphabet and the use of signals standing for entire sentences, previously agreed upon. The advantage of using signals for entire sentences would be to speed up greatly the

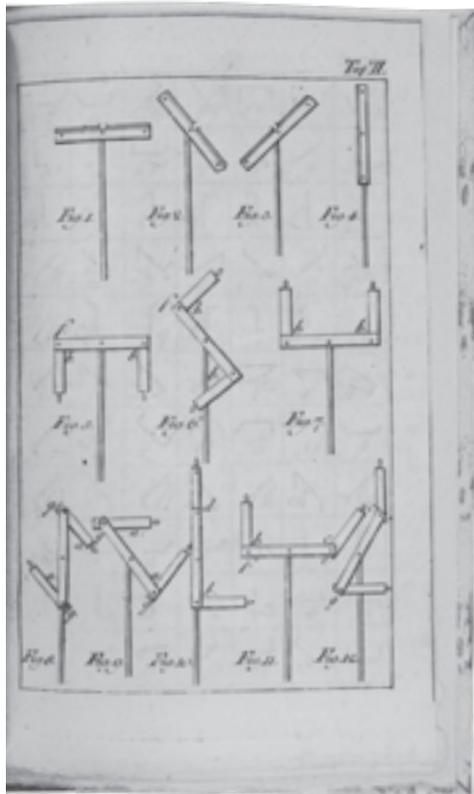


process of communication, especially under threat of fog or other meteorological conditions.

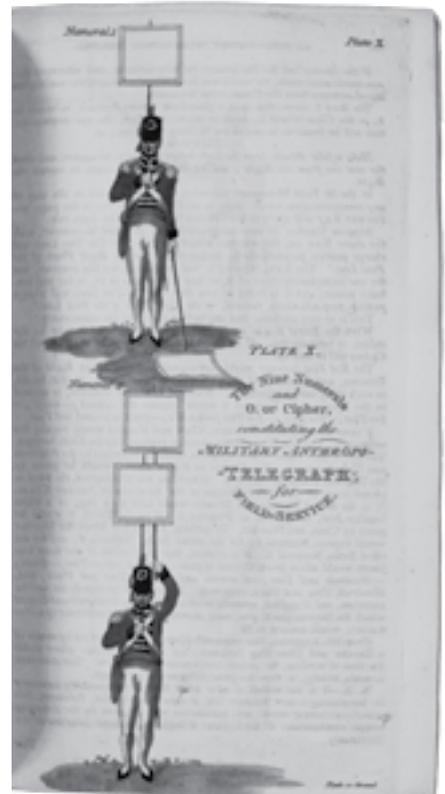
Bound in red morocco with marbled endpapers, the holograph consists of 32 unnumbered leaves. The versos of 29 are blank, while three others contain illustrations of telegraphic apparatus. On the back free endpaper there is mounted a volvelle. The holograph is signed: W. Goddard, Chatham, the 24th November 1803. The inside front cover bears the bookplate of William-Henry, Duke of Clarence (1765-1837), later King William IV of Great Britain. Below and above it are mounted the book label and bookplate of his illegitimate son, George Augustus Frederick Fitz-Clarence, 1st Earl of Munster (1794-1842). [R]

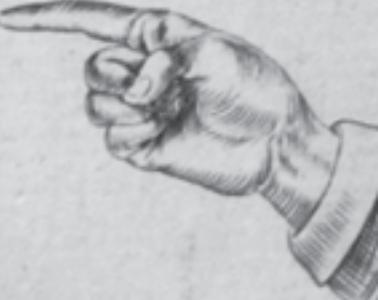
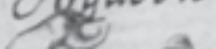
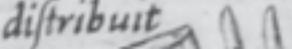
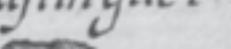


77 Chappe, Claude, 1763-1805. Beschreibung und Abbildung des Telegraphen



78 Macdonald, John, 1759-1831. A treatise explanatory of a new system of naval, military and political telegraphic communication of general application



<p>E Approbabit .</p> 	<p>F Enthymemata tundit .</p> 	<p>G Distinguet .</p> 	<p>H Disputabit .</p> 
<p>I Acrius Argumen tatur .</p> 	<p>K Demonstrat .</p> 	<p>L Magnanimitatem ostendit .</p> 	<p>M Indigitat .</p> 
<p>N Attentionem poscit .</p> 	<p>O Colligit .</p> 	<p>P Urge bit .</p> 	<p>Q Splendidiora explicat .</p> 
<p>R Ironiam ostendit</p> 	<p>S Leviter tangit</p> 	<p>T Subtiliora explicat</p> 	<p>V Exprobrabit</p> 
<p>W Arguebit</p> 	<p>X Memb : orati : distribuit</p> 	<p>Y Amplitudinem denotat .</p> 	<p>Z Contraria distinguet</p> 

**80 Bonet, Juan Pablo, 1579-1633**

*Reduction de las letras y arte para enseñar a ablar los mudos*

Madrid: Francisco Abarca de Angulo, 1620

Bonet was a philologist who presented himself as the inventor of the art of teaching the deaf to speak. Basically, he advocated training the deaf student in speech through reduction of letters of the alphabet to their phonetic value, by means of a manual alphabet. Bonet's book contains 21 engravings, each showing a letter from the Castilian alphabet with an accompanying hand-shape, often evocative of the letter in form. His handshapes are used to this day by deaf signers throughout continental Europe and the Americas as a way of spelling rapidly without paper and pencil. In his history of deaf education, *When the mind hears* (New York, 1984) Harlan Lane claims that Bonet plagiarized the methods of a Spanish predecessor, Pedro Ponce de Leon (1520-1584). [H]

**81 J.B. (John Bulwer), fl. 1648-1654**

(see opposite and page 52)

*Chirologia; or, The naturall language of the hand ... Whereunto is added Chironomia; or, The art of manuall rhetoricke.* 2 volumes in 1

London: Tho. Harper and are to be sold by R. Whitaker, 1644

A work dealing with communication by sign language and gesture, *Chirologia* won for its author the appellation "Chirosopher." The work's chief concern is the various ways in which the hand can be used to express both words and abstract concepts. Bulwer maintained that signs are the natural language of all persons, not just of the deaf. An early pioneer in the education of the deaf, Bulwer was the first to propose an "academy of the mute." He developed the technique of

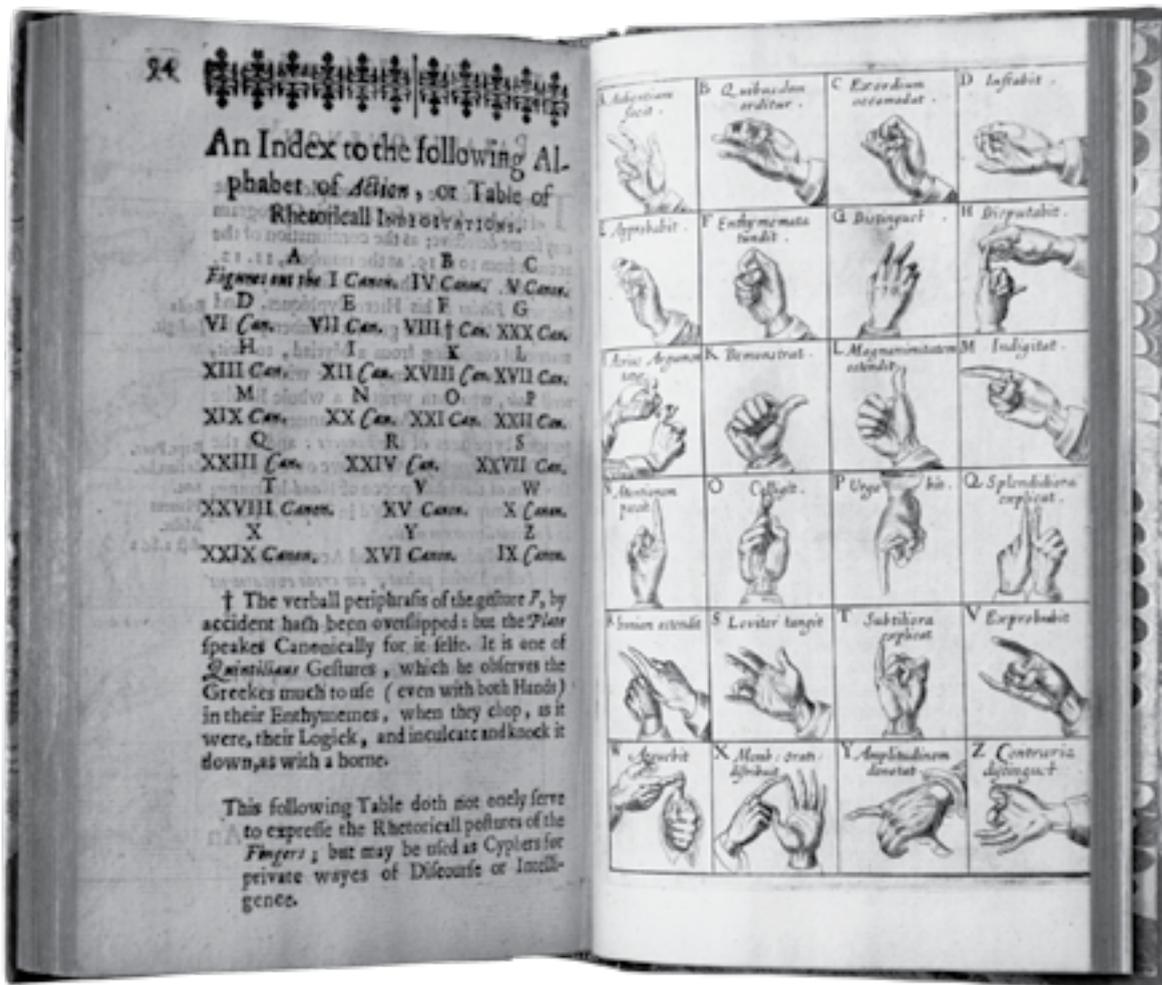
lip-reading, first proposed in his *Philocophus; or, The deafe and dumbe man's friend* (London, 1648), a copy of which is included in the Semeiology Collection, and he brought attention to the capacity to enjoy music through the medium of the teeth. Bulwer knew of the manual alphabet, but makes no suggestions with regard to speaking with the fingers. His work evidences the strong influence of Juan Pablo Bonet (1579-1633), whose *Reduction de las letras y arte para enseñar a ablar los mudos* (Madrid, 1620) is also held in the Semeiology Collection. [R·H]

**82 L'Epée, Charles-Michel de, 1712-1789**

*Institution des sourds et muets, par la voie des signes méthodiques*

Paris: Nyon l'ainé, 1776

A lawyer and a priest, L'Epée turned his attention to the instruction of the deaf upon being deprived of his priestly functions because of his Jansenist sympathies. In 1755 he founded his own school for teaching the deaf, which in 1791 became the Institution Nationale des Sourds-Muets à Paris by action of the National Assembly. In *Institution des sourds et muets*, first published in 1774, L'Epée puts forth his theories on teaching the deaf to communicate by signs, a method which he was the first to fully develop. He emphasizes the importance of having the pupil master signs and writing before advancing to lip-reading and articulation. L'Epée was much influenced by Joan Pablo Bonet's advocacy of teaching a manual alphabet to the student, and by the *Dissertatio de loquela* (Amsterdam, 1700) of Jan Coenrad Amman on the production of vocal sounds. Opposition to his methods came chiefly from Giacobbo Rodriguez Pereira (1715-1780). [R]



81 J.B. (John Bulwer), fl. 1648-1654, *Chirologia; or, The naturall language of the hand...* Whereunto is added Chironomia, or, The art of manuell rhetoricke.

83 Sicard, M. l'abbé (Roch Ambroise Cucurron), 1742-1822

*Théorie des signes: pour l'instruction des sourds-muets.* 2 volumes  
Paris: A l'Imprimerie de l'Institution des Sourds-Muets, 1808

Originally director of the school for deaf-mutes at Bordeaux, the Abbé Sicard succeeded Charles Michel de L'Épée at Paris upon the latter's death in 1789. This is the first edition of *Théorie des signes*, in which Sicard adopts and develops L'Épée's views on signs as the natural language of the deaf, giving the reader extensive descriptions of various signs used by the deaf for concrete objects, abstract concepts, and grammatical relations. Appended to volume 2 is a short essay by Sicard on Jean Massieu, one of several pupils to whom the Abbé addressed questions at public lectures, held in London, to demonstrate

his methods in comparison to the oral method of teaching speech then common in England. The Abbé Sicard's methods may also be examined in his *Cours d'instruction d'un sourd-muet de naissance* (Paris, 1800). [R]

84 *Collection of hand alphabets* (see opposite)  
Mostly 19th century

The broadsheets in this small archival collection were probably used as instruction guides in 19th-century European schools for the deaf and mute. The sheets depict hand alphabets for use in a number of languages, including English, French, German, Hungarian, and Russian. [D]

Hand

# Ру́чная Азбу́ка Глухо-и́льмыхъ.

аА 	бБ 	вВ 	гГ 
дД 	еЕ 	жЖ 	зЗ 
иИ 	іІ 	кК 	лЛ 
мМ 	нН 	оО 	пП 
рР 	сС 	тТ 	уУ 
фФ 	хХ 	цЦ 	чЧ 
шШ 	щЩ 	ъЪ 	ыЫ 
ьЬ 	ѣѢ 	ѐЁ 	юЮ 
ѡѠ 	ѢѢ 	ѤѤ 	

84 One of a collection of hand alphabets, mostly 19th century, in the Philip Mills Arnold Papers.



Et quoniam hec pars si humidior sit quam oporteat male retinet acceptas species: hinc est quod plerique huic defectui mederi intendentes: diversis modisunctionum hanc partem exciccare molunt. In modo tur: de quo alibi locus opportunus: diversi di studendi uersa sentiunt: caute autem adhiberi remedium. In nouo consultius mihi persuasum habeo: tu vel nostram ma o. u. de hoc habeto intentionem vel que ipse apud ex. l. rarum pertiores legeris medicos tene. Quod ad hunc locum attinet naturali memorie non medicina sed locis et imaginibus suffragandum censuimus

**85 Mattiolo, da Perugia, d. 1480?**

*De memoria*

Strasbourg: Heinrich Knoblochtzter, ca. 1476-1484

This is the first printed text on memory, its conservation and its improvement, both by mnemotechnic devices and medicinal aids. The book is a rare scientific incunable set in Gothic type, with four attractive woodcut initials. The Semeiology Collection copy has been beautifully restored and rebound in modern limp vellum. [H]

**86 Publicius, Jacobus**

*Ars oratoria ; Ars epistolandi supra scriptiones epistolarum ; et, Ars memorativa*

Augsburg: Erhard Ratdolt, 1490

A work written sometime prior to 1460, the *Ars oratoria* is primarily a piece on rhetoric. Faithful to medieval tradition, it has appended to it a brief treatise on memory. Following the methods of Thomas Aquinas, Publicius views the mental images used by the mnemonist as corporeal similitudes of the items to be remembered. Publicius uses the heavenly spheres — planets, stars, paradise — as memory *loci*. The work was first published separately at Cologne in 1480. [R·H]

**87 Petrus, von Rosenheim, ca. 1380-1433**

(see page 59)

*Rationarium evangelistarum*

Pforzheim: Thomas Anshelm, 1505

Following in the classical tradition, this book combines memory *loci* with striking visual images to prompt users to memorize the events and ideas set out in the Christian Gospels. Further, bits of poetry and prose are keyed numerically to objects and symbols in order to reinforce consistent association of image with concept. Early versions of *Rationarium evangelistarum*

survive in 14th-century Germanic manuscripts. The woodcuts appear in several 16th-century printed editions. [H]

**88 *Rhetoricorum libri recenter castigati interpretibus. Ciceronis De inventione libri duo***  
Milan: Giovanni Angelo Scinzenzeler, 1511?

This anonymous work of ca. 86-82 B.C., commonly called the *Rhetorica ad Herennium*, is the only surviving Latin rhetorical treatise describing in detail the classical art of memory. It was attributed to Marcus Tullius Cicero during the Renaissance, but this attribution is highly unlikely. With the exception of Lullism, the *Ad Herennium* formed the basis of all memory systems developed during the Middle Ages. The author's mnemonic system involves the use of *loci*, such as buildings, in which the mind puts symbolic pictures, or images, of data to be remembered. To recollect material, the person would mentally walk through the memory building and “see” the items to be recalled. Edited by Francesco Maturanzio (d. 1518) and others, the volume includes a genuine work of Cicero, *De inventione*, often printed or bound with the *Ad Herennium*.

This volume, in a contemporary vellum binding, is clearly a composite, dating from 1511. Different types are used for the *Ad Herennium* and *De inventione*. The foliation, although continuous, is in Arabic and Roman numerals respectively for each work. The title page bears a woodcut like that in several Leonard Pachel issues of the *Ad Herennium*. The register on the verso of the last leaf of the volume includes only the *De inventione*. Below this register there is the printer's mark of Giovanni Angelo Scinzenzeler. Apparently Scinzenzeler has taken excess signatures

of the *Ad Herennium* from the 1511 Pachel edition of both works, and bound them with his own printing of Scinzenzeler's own complete printing of the two works appearing in 1512. No other copies of this composite issue are known. The standard citations have reference only to complete editions of the two works appearing in 1509, 1511, and 1512. [R·H]

**89 Romberch, Johann Horst von, fl. 1505-1532**

(see opposite)

*Congestorium artificiosae memoriae*

Venetijs: Melchior Sessam, 1533

Originally published in 1520, Horst von Romberch's work draws on a wide variety of sources, including the *Rhetorica ad Herennium*, Quintilian, Francesco Petrarca (1304-1374), and Peter of Ravenna (b. 1448). He gives to the usual use of memory *loci* (mental places for storing data) the novel twist of employing Dante's Hell, Purgatory, and Paradise. In discussing mental images or symbols of information to be recalled, he offers the reader a section on visual alphabets, in which the images used resemble the shape of letters. The final portion of *Congestorium* deals with the memorization of grammar and of abstract concepts from the sciences and theology. This portion was much influenced by Thomas Aquinas (1225?-1274). [R·H]

**90 Camillo, Giulio, ca. 1480-ca. 1544**

*L'idea del teatro*

Firenze: L. Torrentino, 1550

In the ages before printing, a powerful memory was an essential tool of the mind, especially for formal public speaking. In her book *The art of memory* (1966), Frances Yates explores the rationale for the continuing interest in memory and mnemonics during the Renaissance, particularly the emphasis on magical or occult memory systems. An understanding of Camillo's Memory Theater (which was an actual structure one could walk through) is crucial to an understanding of the subject, and she devotes a chapter to it, connecting Camillo's structure to the Hermetic and Cabalist traditions that

inspired it. Camillo never wrote about his Memory Theater but he dictated an outline to a friend and the text was published after his death in the edition shown here. [H]

**91 Rossellius, Cosmas, d. 1578**

*Thesaurus artificiosae memoriae*

Venetijs: Antonium Paduanum, 1579

Published posthumously, *Thesaurus* is in the medieval tradition of memory systems. Particularly favorable to the Dantesque type of memory *loci*, Rossellius encourages the mnemonist to picture in his mind Hell and Paradise with the vividness of a Renaissance painting. He also advocates the use of the constellations as *loci*. The usual visual alphabet is given extensive treatment. In this context Rossellius describes a digital alphabet, or sign manual, for the fingers. Accompanying the description are five woodcuts containing the earliest known representation of a digital sign language. Together with Horst von Romberch, Rossellius became one of the most widely read and influential writers of the 16th century on the art of memory. [R·H]

**92 Dolce, Lodovico, 1508-1568** (see page 58)

*Dialogo di m. Lodovico Dolce, nel quale si ragiona del modo di accrescere & conservar la memoria*

Venetia: Giovanbattista Sessa & fratelli, 1586

This is a translation and paraphrase in dialogue form of Johann Horst von Romberch's *Congestorium artificiosae memoriae*. The book includes a striking plate showing the Abbey Memory System, a mnemotechnical method of memorizing real places on real buildings. Things to be remembered may also be "placed" as images in the buildings. These systems are based on the classical art of memory as practiced in the Greek and Latin world. The plates are made without attribution from the blocks used for the 1520 Venice edition of the *Congestorium*. It has been suggested that seeing the blocks may have been the impetus for Dolce to "translate" Romberch's writings. [H]

93 Narvaez de las Ynfantas, Petro

*Ordo universi et humanarum  
scientiarum prima monumenta*  
Cordubes: Bosci, 1591

This remarkable broadside was developed as a teaching tool to demonstrate the organization of universal knowledge. Andrea Bacci, a professor at the University of Rome, used the well-known early modern model of man as a microcosm of the universe to summarize current thinking in the various fields of human enquiry, including theology, philosophy, medicine, and astronomy. The broadside appears to be an unauthorized copy of Bacci's engraving of 1580. [D]

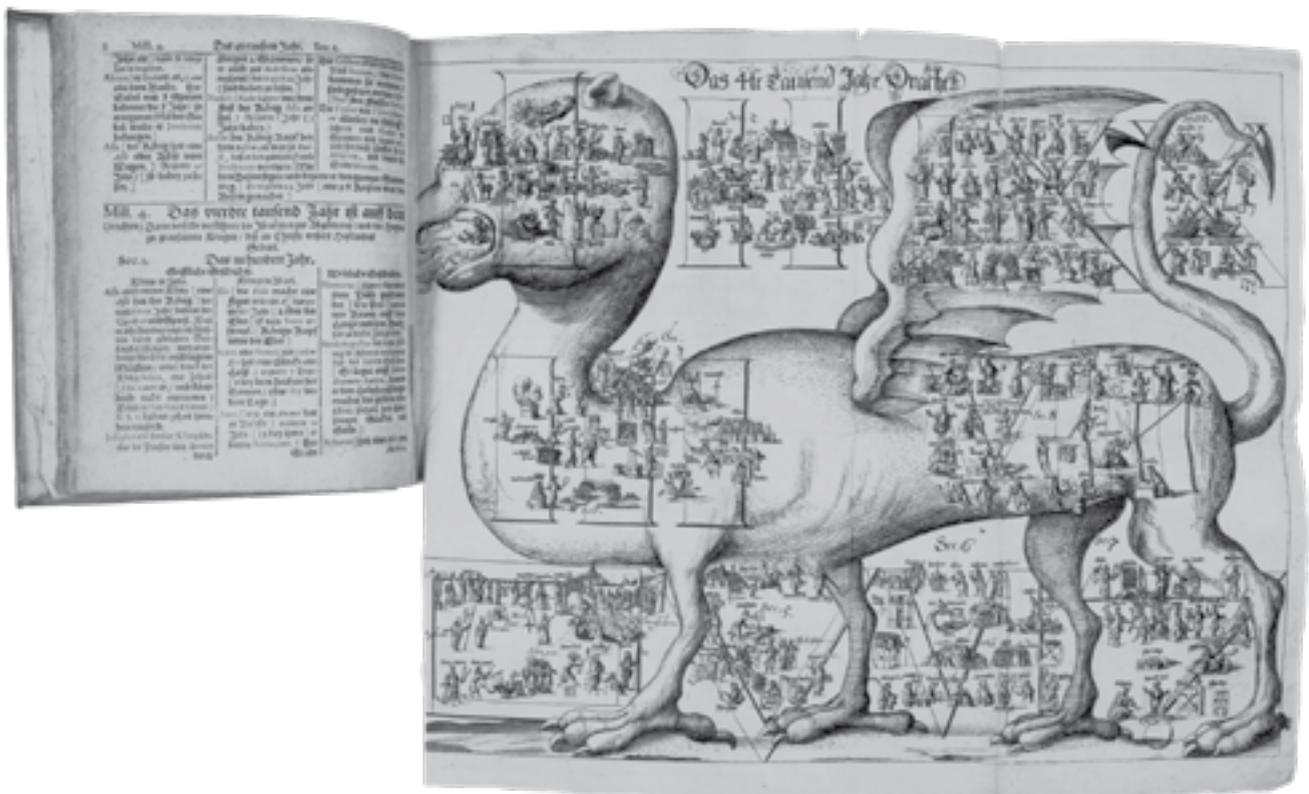
94 Llull, Ramon, 1232?-1316

*Opera*  
Argentorati: haeredum L. Zetzneri, 1609

A contemporary of Thomas Aquinas, Llull developed his memory system at a time when the medieval mnemonic techniques derived from rhetoric were at their height. Up to his time, mnemonics aimed solely at facilitating the imme-

diante recall of data. Llull introduced a new dimension by making his Art, as he called it, a means to an end, the discovery of truth. This was possible, he claimed, because his Art was based upon divine attributes (goodness, wisdom, and the like) and thus reflected the highest truth, the Trinity. Another feature of his system is the use of letter notation rather than corporeal images, then customary in memory systems, to designate concepts. Finally, Llull introduced the use of movement into mnemonics. The most important instance of this is the combinatory wheel, made up of moving concentric circles marked with figures. By revolving the wheels mentally, various combinations of the concepts represented by the figures were possible.

This edition of Llull's works includes a commentary by Heinrich Cornelius Agrippa von Nettesheim (1486?-1535), better known for his work on Hermetic and cabalist magic, *De occulta philosophia* (Paris, 1531). Appended also is a piece on Llull by Giordano Bruno (1548-1600), whose



98 Buno, Johannes, 1677-1697 *Historische Bilder / darinnen idea historice universalis*



92 Dolce, Lodovico, 1508-1568 Dialogo di m. Lodovico Dolce, nel quale si ragiona del modo di accrescere & conservar la memoria

work on memory as a Hermetic secret, *De umbris idearum* (Paris, 1582), freely adopts Lull's combinatory wheel technique. [R]

**95 Lull, Ramon, 1232?-1316**

*Ars demonstrativa* and *Ars brevis*  
Manuscript. Citta di Castello, Italy, 1615

The foundations of Lull's Art are "demonstrated" in the two texts shown here in a 17th-century manuscript which is to date unrecorded. Normally we would not expect manuscripts to be created as late as 1615, but the printed texts were very scarce and so his followers continued to make copies for study.

The tenets of the *Ars demonstrativa* are set out in alphabet notations and combinatory wheel figures which, according to Anthony Bonner, function in three ways: 1) to serve as visual reminders of the concepts, 2) to facilitate mnemonic recall, and 3) to show how the

elements of the Art are grouped and how they may be combined. The wheels invented by Lull in the 13th century are believed by some to be the inspiration for volvelles used in cryptography. The presence of this manuscript text in the Semeiology Collection is a very good example of the intertwining threads that come together in the communication subjects documented in the collection. In Lull we see aspects of cryptography, shorthand notation, memory systems, symbolic representations, and rhetorical devices bearing on language and meaning — in short, a multiplicity of signs. [H]

**96 Willis, John, d. 1625**

*Mnemonicæ; sive, Reminiscendi ars*  
Londini: Humfredum Lownes, sumptibus  
Nathanaelis Browne, 1618

*Mnemonicæ* is interesting chiefly because of its use of the Elizabethan theater as a memory locus. Dividing a theater in half, lengthwise, Willis

produces what he terms a memory repository having two rooms, designed for use as a very simple mnemotechnic, such as shopping lists or prices. The importance of Willis's work lies in its probable influence on Robert Fludd (1574-1637). In the second part of his *Utriusque cosmoi maioris scilicet et minoris, metaphysica, physica atque technica historia* (Oppenheim, 1619), Fludd develops this use of the theater as a memory *locus* along Hermetic-cabalistic lines. Frances Yates points out that Fludd uses as his model *locus* the famous Globe Theater in London. Willis may also be the inspiration behind Fludd's theaters of Night and Day in the zodiac, parts of an occult memory system. *Mnemonica* was translated into English by Leonard Sowersby in 1661. [R·H]

**97 Le Cuirot, Adrian**

*Le magasin des sciences, ou, Vray art de memoire descouvert par Schenkelius*  
Paris: Dominique Le Cuirot, 1623

Published by the author's brother, this is the first edition in French of Lambert Schenkel's *Detectus: seu, Memoria artificialis hactenus occulta* (1617), supplemented with five shorter tracts not appearing in the Latin original, including Trithemius's pictorial alphabet, documented elsewhere in the Semeiology Collection. The text concerns mnemonics, which offer artificial aids for extending the capabilities of a person's natural memory. [H]

**98 Buno, Johannes, 1617-1697** (see below)

*Historische Bilder / darinnen  
Idea historiae universalis*  
Lüneburg: In Verlegung des Auctoris, 1672

The pedagogue Johannes Buno employed complex visual aids in his memory-based curriculum. The use of these striking images as mnemonic devices is described by Stephen Ferguson in his article "System and Schema: Tabulae of the Fifteenth to Eighteenth Centuries." The tabulae "are charts, plans, maps, or tables summarizing an extensive body of information usually within the space of just one page. The intent of such a summary is quick reference, or aid to the memory, or to provide a ready means

for seeing complex relationships." Buno employed his mnemonic system for teaching such diverse subjects as Roman law, biblical and secular history, and Latin grammar. [D]

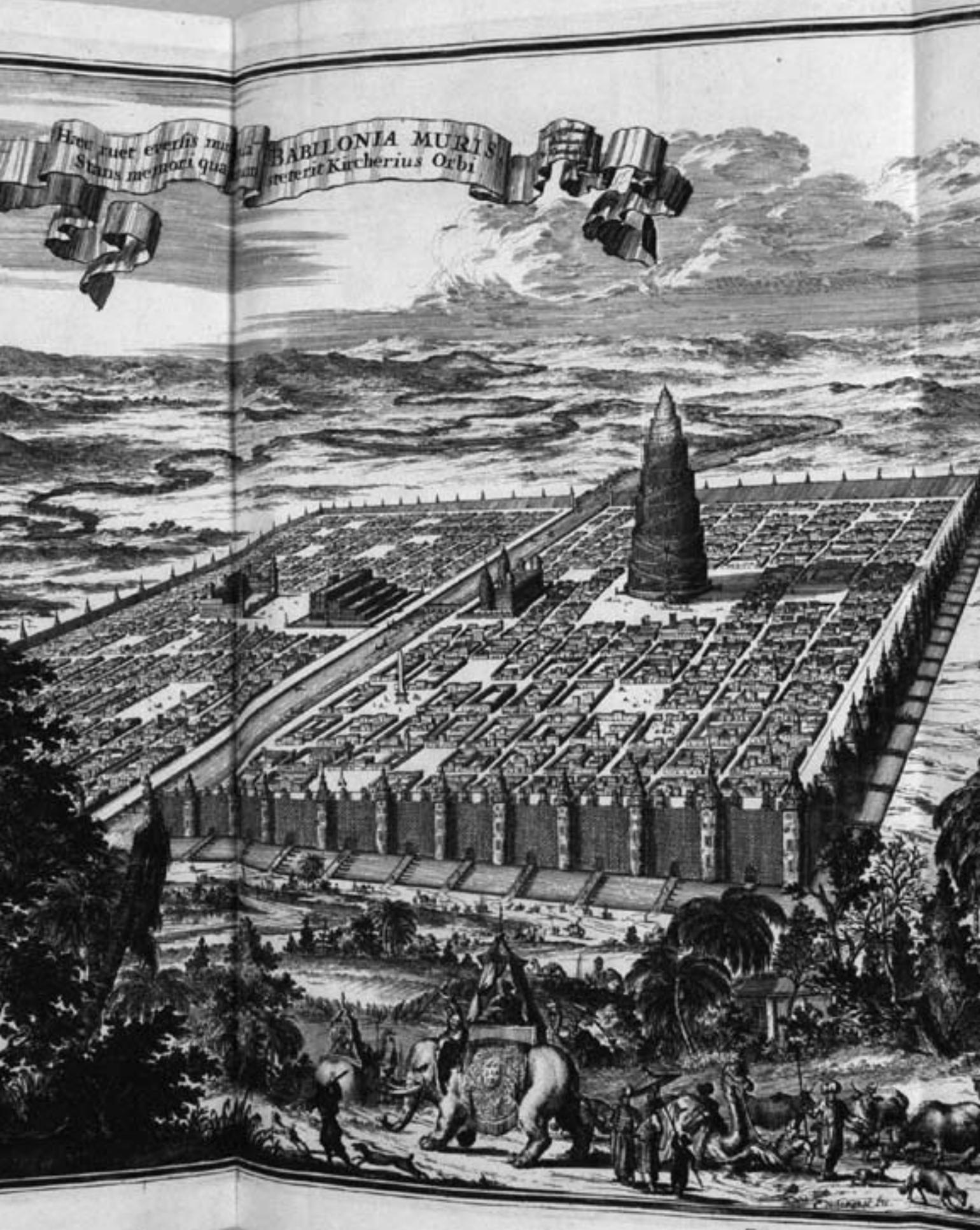
**99 Luria, A. R. (Aleksandr Romanovich), 1902-1977;  
Translated from the Russian by Lynn Solotaroff**

*The mind of a mnemonist: a little book about a vast memory*  
New York: Basic Books, 1968

This work by the Soviet neuropsychologist Alexander Luria describes the unusual mnemonic ability of Solomon Shereshevsky, a journalist. Shereshevsky, called "S." throughout Luria's account, could remember seemingly unlimited lists of words or numbers by "placing" them along a street, then mentally walking down the street to recall them one-by-one — an example of the medieval system of *loci* evidently developed independently by the journalist. Shereshevsky also experienced synesthesia, a condition where sensory data related to one sense is experienced in another, for example an image eliciting a sound response. In Shereshevsky's case, the synesthesia was particularly strong, with each sensation experienced in all five senses; it is thought that this may have contributed to his extraordinary memory. [D]



87 Petrus, von Rosenheim. ca. 1380-1433. *Rationarium evangelistarum*



Hæc ruit everis m...  
Stans ne mori qua...

BABILONIA MURIS  
steterit Kacherius Orbi

**100 Albertano, da Brescia, 13th century**

*Tractatus de doctrina dicendi et tacendi*  
Strassburg: Printer of Henricus  
Ariminensis, ca. 1476

This handsome incunable, rebound in modern vellum, is one of the earliest printed books in the Semeiology Collection. The subject, in its semiotic context, is the conduct of conversation. The work became popular, reaching 18 editions before 1497. [H]

**101 Mancinelli, Antonio, 1452-ca. 1505**

*Scribendi orandique modus*  
Venetiis: Simonem Bevilaqua, 1493

Another interesting incunable, printed by Simon Bevilaqua, who printed in several Italian cities before locating in Paris in 1515. The book, which discusses forms of Latin grammar and rhetoric, is also instructive for students of 15th-century printing because the initial letters intended to be drawn in by hand have not been executed. The pages appear today much as they would have looked over 500 years ago when they left the pressman's hands. [H]

**102 Rhodiginus, Lodovicus Caelius, 1469-1525**

*Sicuti antiquarum lectionum commentarios concinnarat olim vindex Ceselius*  
Venetiis: In aedibus Aldi et Andreae soceri, 1516

This encyclopedic work on many fields of learning was printed at the great Venetian printing house established by Aldus Manutius (1450-1515). The press's well-known device is here printed in red. The anchor and dolphin symbol had been known to ancient philosophers and was later used on coins, where Aldus may have seen it. According to Erasmus, a friend of Aldus, the anchor represents the period of deliberation

before a work is begun, the dolphin the speed of its completion. A number of contemporary and later scholars have made copious notes and marginal commentaries; an entry on the title is dated 1534. The book is in a 16th-century stamped vellum binding with brass bosses and clasps. [H]

**103 Bibliander, Theodorus, ca. 1504-1564**

*De ratione communi omnium linguarum & literarum commentaries*  
Tigvri: C. Frosch., 1548

In this commentary on the general relationship of all languages and letters, Bibliander tried to prove that all languages and writing systems are related. The book also includes a six-page chapter on "Secret Writing," making it the fourth known book on cryptography, and hence of added interest in the context of the Semeiology Collection. Bibliander, a Swiss, was born in 1504 and died of the plague in 1564. He became a prominent theologian and authored at least 14 books, mainly on religious subjects. He was also skilled in oriental languages, edited a version of the Bible, and translated the Koran. [H]

**104 Gessner, Conrad, 1516-1565**

*Mithridates. De differentiis linguarum tum veterum tum quæ hodie apud diversas nationes in toto orbe terrarum in usu sunt*  
Tigvri: Froschouerus, 1555

Gessner, a German-Swiss writer and naturalist, is remembered for numerous accomplishments, especially in zoology and bibliography. At age 29 he published his *Bibliotheca universalis* (1545), a catalogue in Latin, Greek, and Hebrew of all writers who had ever lived. Three years later, the second part appeared, and one year later, a

theological encyclopedia. *Mithridates*, an account of about 130 known languages, with the Lord's Prayer in 22 tongues, was published in the midst of his four-volume masterpiece, *Historia animalium* (1551-1558). [H]

**105 Rambaud, Honorat** (see opposite)

*La declaration des abus que l'on commet en escrivant*  
Lyon: lean de Tournes, 1578

Several earlier French orthographic reformers had proposed systems of phonetic spelling, but none was to develop a specific notation, particularly one as radical as Rambaud's. His is the first comprehensive attempt to create a phonetic notation, anticipating modern systems by over three centuries. The system employs eight vowels, 41 consonants, and three "neutrals." Rambaud was an obscure Marseilles schoolmaster. [H]

**106 Wilkins, John, 1614-1672**

*An essay towards a real character, and a philosophical language*  
London: S. Gellibrand [etc.], 1668

One of the founders of the Royal Society and its first secretary, John Wilkins has been characterized by Thomas De Quincey as "a learned man, but with a vein of romance about him." *Real character* was suggested to Wilkins by George Dalgarno's *Ars signorum* (London, 1661). The first half of this work deals with the origin of written forms, the character and features of grammar, and a philosophical discussion of the origin of living things. The second half proposes and describes a new universal language. Wilkins' scheme employs both actions and relationships. Its chief shortcoming, according to Charles Kasiel Bliss, is the excessive demands placed on memorization by the use of symbols bearing no relationship to that for which they stand. Wilkins is also known for his *Mercury; or, The secret and swift messenger* (London, 1641), on methods of rapid and secret correspondence. [R]

**107 Wallis, John, 1616-1703**

*Johannis Wallis ... Grammatica linguae anglicanae. Editio quarta, prioribus auctior*  
Oxoniae: L. Lichfield, et prostant venales apud J. Crosley, 1674

English grammarian, cryptographer, and mathematician John Wallis first published this work in 1653. Demonstrating an acute philosophic intellect, he aims to describe the English language, its forms and origin. Prefixed to the work is the short tract "De Loquela," describing in detail the various methods of producing articulate sounds. The tract led him to devise a method for teaching the deaf to speak, tested successfully on two patients. Wallis is also known for his decipherment of royalist papers intercepted in 1642. He himself describes this in sections inserted in *An essay on the art of decyphering* (London, 1737) by John Davys, a copy of which is also included in the Semeiology Collection. [R·H]

**108 Kircher, Athanasius, 1602-1680** (see page 60)

*Turris Babel, sive, Archontologia qua primo priscorum post diluvium hominum vita*  
Amstelodam: Janssonio-Waesbergiana, 1679

Kircher, a Jesuit and a Renaissance polymath, spread his interest and learning over a stupendous range of subjects, publishing 30 major books in his lifetime. The Semeiology Collection holds the seven titles relevant to it, on Egyptian hieroglyphs, on universal language and the origins of language, and on cryptography. *Turris Babel*, Kircher's elaborate exposition on ancient civilizations and languages, is mainly of interest now to scholars of the history of language. Kircher must have begun work on *Turris Babel* long before it was published, because several of the plates, drawn to his design, are dated nine years earlier. Along with his 1675 book *Arca Noe*, concerning the Great Flood, the companion volumes are his attempt at a complete prehistory of mankind, rooted in the total veracity of the Old Testament. The work includes a famous depiction of the Tower of Babel by Livius Creyl, engraved by C. Decker in 1670. [H]



- 109 Chamberlayne, John, 1666-1723, editor  
*Oratio dominica in diversas omnium fere gentium linguas versa et propriis eiusque linguae characteribus expressa*  
 Amstelaedami: G. & D. Goerei, 1715

One approach to philology is to study the same text in a variety of languages. In this extremely rare type specimen book, the Lord's Prayer is printed in 150 different languages: 30 Asian, 20 African, 87 European, and 13 American languages, including different historic forms and dialects within those languages. Among the more unusual languages are Mohawk, Virginia Indian, a Caribbean and a Brazilian tongue, Orkney, Singhalese, Tamil, and Annamite. The lengthy preface lays the groundwork for meaningful linguistic comparisons among the specimens. Appended to the work are several related texts, including a significant essay by Leibniz on the state of contemporary language research. [H]

- 110 Bougeant, G.-H. (Guillaume-Hyacinthe), 1690-1743  
*Amusement philosophique sur le langage des bestes*  
 Paris: Gissey [etc.], 1739

Beginning with the Cartesian definition of animal intellect, Bougeant, a Jesuit, here argues that animal communication constitutes a language. Bougeant was imprisoned for publishing the book, but an expanded edition was issued in 1750 in Amsterdam and again in Paris. An English translation appeared in London in 1739. Copies of all of these may be found in the Semeiology Collection. The idea that animals communicate with each other is as old as mankind. Today, zoosemiotics flourishes in several directions. [H]

- 111 Michaelis, Johann David, 1717-1791  
*A dissertation on the influence of opinions on language, and of language on opinions*  
 London: W. Owen [etc.], 1769

A theologian and orientalist, Michaelis first issued *Dissertation* in German at Bremen in 1762.



conceptions. He maintains that once such hieroglyphs are found and deciphered, it will be possible to unmask the secrets of the ancient world. *Monde primitif* demonstrates an encyclopaedic knowledge on the part of the author. It concludes with etymological dictionaries of Greek, English, and French. A portion of *Monde primitif* was published separately in Paris in 1776 under the title *Histoire naturelle de la parole*. [R]

**113 Harris, James, 1709-1780**

*Hermes: or, A philosophical inquiry concerning universal grammar.*

3rd edition, revised and corrected

London: I. Nourse and P. Vaillant, 1771

Classical scholar and Member of Parliament for Christchurch, James Harris is best known for his *Hermes*. It is meaning, claims the author, that distinguishes language from other forms of sound. Therefore, the more complex and developed the ideas of a people are, the more complex and developed will be its language. Harris divides all words into one of two categories, those having significance of themselves, and those having significance only in association with other words. *Hermes* first appeared in 1751. It was translated into French by François Thurot (1768-1832) by order of the French Directory in 1796. [R]

**114 Monboddo, James Burnett, Lord, 1714-1799**

*Of the origin and progress of language.*

6 volumes

Edinburgh: J. Balfour ; London:

T. Cadell [etc.], 1774-1809

In this work, the Scottish judge and anthropologist Lord Monboddo clearly reflects his own preference for ancient learning and contempt for that of more modern date. In *Origin* he traces man's development into a social state. Language is the consequence of this social state, he claims; it is not natural to man. Included in the work are such topics as rhetoric, comparative essays on Greek, Latin, English, French, and Italian, and on the arrangement of words. Among the theories here presented by Monboddo is the view that

orangutang is a class of human species, its inability to speak being a mere accident. He advocated studying man as one of the animals and looking at savage tribes to learn the origins of civilization. He thus foreshadows Darwinism and shows points of contact with neo-Kantianism. Because the publishers failed to print a sufficient number of copies, volumes 1 and 3 were reprinted as a "second edition." This set is mixed, having the second edition of volumes 1 and 3. [R]

**115 Ria, J. P. de** (see opposite)

*Palais de soixante-quatre fenêtres*

Petersbourg: 1788

This is the only edition of a curious work on universal languages, based on a unique phonetic alphabet rooted in the number eight. The language is to be spoken as it is written and is to correlate philosophic/spiritual content with the symbol system, which uses eight cosmic "figures," eight vowels, eight hard and eight soft consonants. To form the "64 windows" Ria combines the "figures," vowels, consonants, the numbers 1-8, and three sets of eight musical notes. Ria completes the text with discussion of a universal dictionary based on his phonetic system which he believes will lead to a single classless society in which all men will serve each other in contentedness and with just reward. [H]



**116 Beck, Cave, 1623-1706?**

*The universal character, by which all the nations in the world may understand one anothers conceptions, reading out of one common writing their own mother tongues*

London: Tho. Maxey for William Weekley, 1657

One of several early efforts to develop a universal language, Beck's system is designed to be either written or spoken. It is based upon the use of Arabic numerals to express the radical works in any language, the key being a numerical glossary of the language being used. Letters of the alphabet are employed to express grammatical modification of any given word, while compound words are formed by the use of 200 connective characters. The work was published in French (1657). This copy of *Universal character* comes from the collection of William Beckford (1760-1852), author of *Vathek*, from whom it passed into the library of his son-in-law, Alexander Douglas-Hamilton, 10th Duke of Hamilton (1767-1852). [R]

**117 Vismes, Anne Pierre Jacques de** (see page 69)

*Pasilogie, ou de la musique: considérée comme langue universelle*

Paris: Prault, 1806

Anne Vismes, the French composer and writer, here argues in favor of music as a form of universal writing. He claims that, in origin, language is essentially a musical form. For example, he points to the practice among ancient people of joining music and poetry, and claims that there is a relationship between letters, especially vowels, and the various musical scales used in the ancient world. *Pasilogie* argues that music has an infinitely greater capacity for expression through combinations of sounds and harmonies than has human speech. Vismes concludes his work by proposing the use of an enharmonic international alphabet of 21 letters for use in science, commerce, and politics. [R]

**118** *The description and explanation of a "universal character;" or, manner of writing, that may be intelligible to the inhabitants of every country, although ignorant of each others language*

Bath: J. Hollway, ca. 1835 (see opposite)

The author of this curious treatise describing a symbolic language is unknown. Published sometime in the 1830s, it attempts to reduce to a minimum the number of arbitrary symbols to be memorized. The author develops a pasigraphic scheme which employs pictographs to represent material things or terms derived from bodily organs and senses, and it uses 24 arbitrary symbols to designate concepts such as size, direction, and quality, as well as to indicate the grammatical use to which a pictograph is put. The work concludes with a pictographic dictionary and several examples of pictographic writing in the author's method. [R]

119 Antrim, Benajah Jay

*Pantography, or Universal drawings, in the comparison of their natural and arbitrary laws, with the nature and importance of pasigraphy, as the science of letters*

Philadelphia: Pub. by the author and for sale by Thomas Cowperthwait & Co., 1843

Antrim here proposes a scheme of universal language based upon sound. He advocates the use of a unique character or symbol to represent each sound made by men in their various languages, thus foreshadowing the so-called International Phonetic Alphabet now in use among linguists. Antrim argues that using such symbols as the basis for a common alphabet, the learning of different languages would be facilitated by requiring only a knowledge of the sense of the sounds in a given language. The work concludes with a comparative study of eastern and western written forms and alphabets. [R]

120 Bliss, Charles Kasriel

*International semantography; a non-alphabetical symbol writing readable in all languages.* 3 volumes

Sydney: n.p., 1948-1949

In Bliss's own words, this work is an attempt "to realise the dream of Descartes and Leibnitz of 300 years ago: simple, clear, non-ambiguous universal symbols for the whole range of language." Bliss bases his scheme on international symbols now used among scientists, such as Arabic numerals and chemical formulae, and on the widely used International Road Signs and Signals. He attempts to employ only those symbols which outline geometrically the things they represent. That is, he puts forward a scheme which is almost entirely ideographic. A research chemist, Bliss also edits *The semantography series* (Sydney, 1949- ) for the Institute of Semantography. [R]

# ODE DE SAPHO,

TRADUITE DU GREC, PAR M. L'ABBÉ DELILLE;

MISE EN MUSIQUE, PAR Madame HYPOLITE DEVISMES.

Heu-reux ce - lui qui près de toi pou-

pi-re, qui sur lui seul at - ti - re ces beaux yeux, ce doux ac-

cent et ce ten - dre sou - ri - re; il est é - gal, il est é - gal aux dieux;

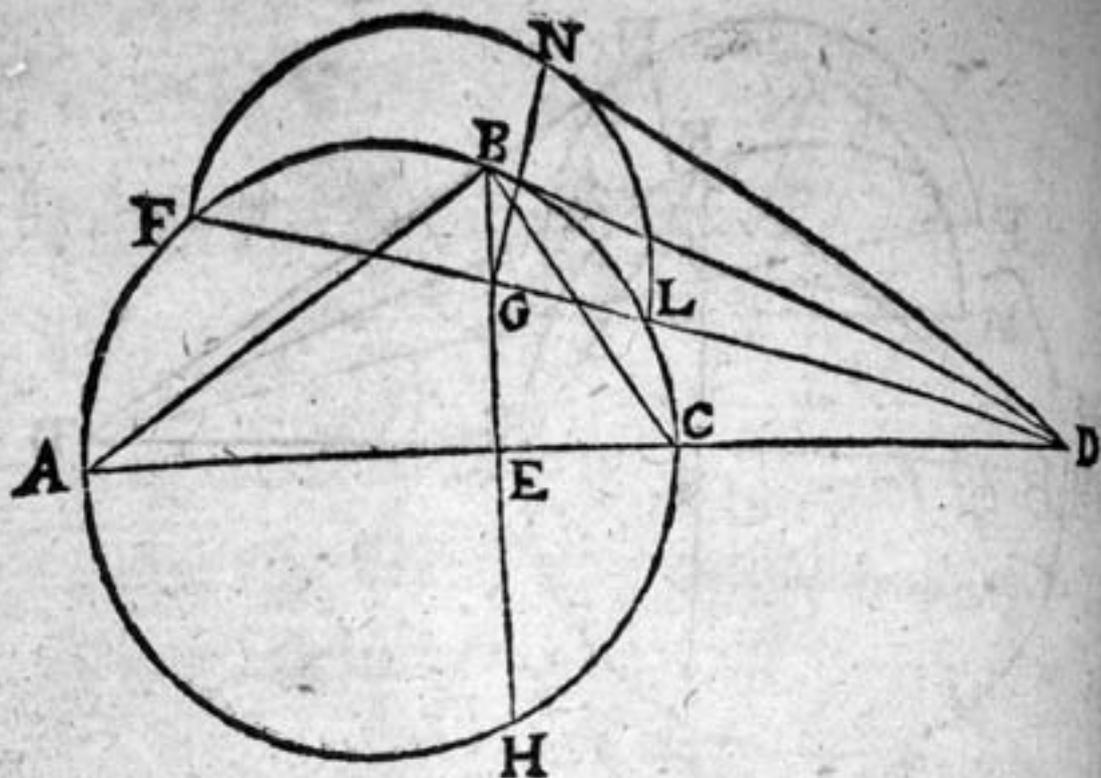
il est é - gal, il est é - gal aux dieux.

2.<sup>e</sup>

De veine en veine une subite flamme  
Court dans mon sein sitôt que je te vois,  
Et dans le trouble où s'égare mon ame,  
Je demeure sans voix.

5.<sup>e</sup>

Je n'entends plus un voile sur ma vue,  
Je rêve et tombe en de douces langueurs;  
Et sans haleine, interdite, éperdue,  
Je tremble, je me meurs.



1. a. 1  $\square.fdl \ 2|2 \ \square.de + \square.eb,$   
 3. f. 1. d. 2  $\square.eb \ 2|2 \ \square.heb,$   
 5. 2  $\square.heb \ 2|2 \ \square.hgb + \square.eg,$   
 1. a. f  $\square.fdl \ 2|2 \ \square.de + \square.hgb + \square.eg,$   
 47. 1  $\square.gd \ 2|2 \ \square.de + \square.eg,$   
 1. a. f  $\square.fdl \ 2|2 \ \square.gd + \square.hgb,$   
 35. 3  $\square.hgb \ 2|2 \ \square.fgl,$   
 f. 5. 2  $\square.fgl \ 2|2 \ \square.gn,$   
 1. a. f,  
 & 47. 1  $\square.fdl \ 2|2 \ \square.gd + \square.gn \cup \square.nd,$   
 37. 3  $dn \text{ est tangen.}$   
 2. concl.  $fd \pi dl \ 2|2 \ fg \pi gl.$   
 α

**121 Hérigone, Pierre** (see opposite and page 72)

*Cursus mathematicus: nova, brevis, et clara methodo demonstratus per notas reales & universales*. 1 of 6 volumes  
Paris: S. Piget, 1644

In his work on *A history of mathematical notations*, Cajori wryly notes that “a full recognition of the importance of notation and an almost reckless eagerness to introduce an exhaustive set of symbols is exhibited in the *Cursus mathematicus*” (§189). The work also represents an early example of the use of symbols in mathematical logic. After purchasing the volume, Mr. Arnold decided not to include works describing mathematical symbols in the Semeiology Collection; this volume is therefore housed in the Special general collection. [D]

**122 Arnauld, Antoine, 1612-1694, and Pierre Nicole, 1625-1695**

*Logic: or, The art of thinking*  
London: T.B. for H. Sawbridge, 1685

*La logique ou, L'art de penser*, also known as the *Port-Royal Logic*, was first published in 1662; this first translation into English was based on the revised edition of 1683. In her introduction to the 1996 modern critical edition of the work, the editor describes its place in the history of philosophy and logic: “In general the semantics of the *Port-Royal Logic* are situated in the context of the Cartesian theory of ideas. Its value to us today resides in its curious combination of deep insights and confusions. For if any single work embodies the standpoint from which to understand the major shifts taking place in logic and in theories of language from the seventeenth century to the present, it is the *Port-Royal Logic*” (Jill Vance Buroker, p. x). [D]

**123 De Morgan, Augustus, 1806-1871**

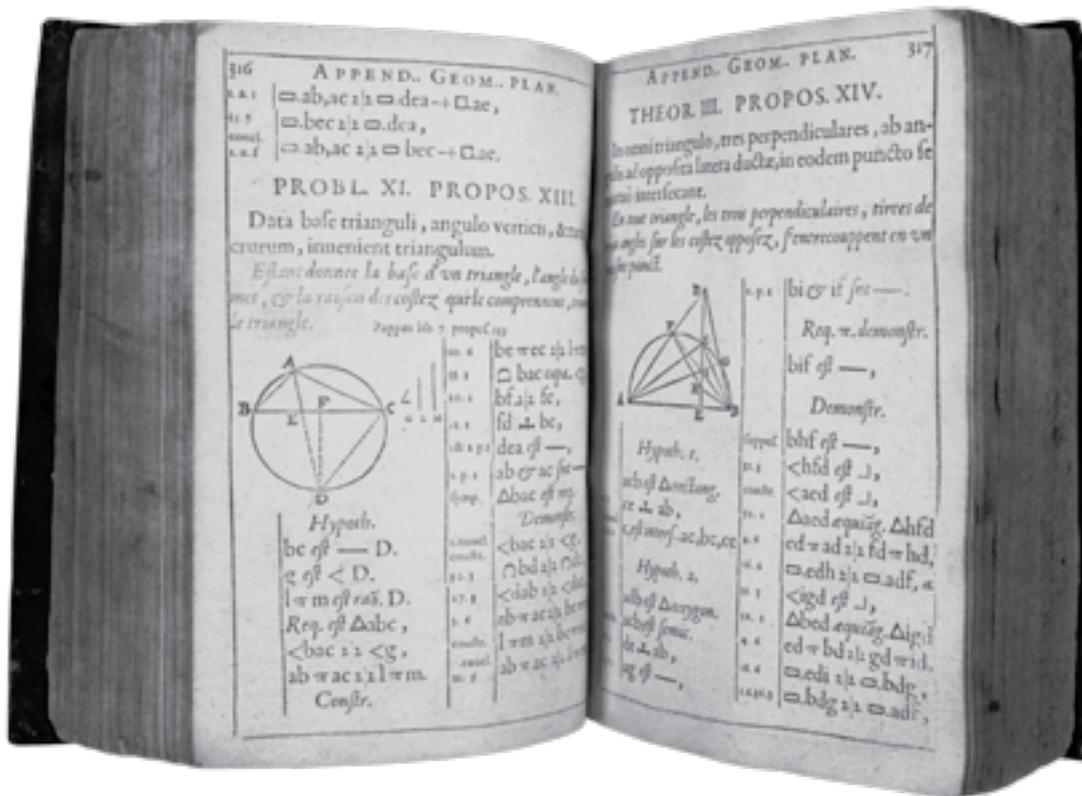
*Formal logic; or, The Calculus of inference, necessary and probable*  
London: Taylor and Walton, 1847

In this work the English mathematician and logician De Morgan develops his thoughts about the syllogism, and especially the concept of the quantification of the predicate. This concept, which addresses limitations in Aristotelian logic, was the basis of a controversy between De Morgan and the Scottish logician William R. Hamilton; the author includes a spirited account of their exchange in an appendix. Beginning with an extended discussion of the field of logic and its origin in “Objects, Ideas, and Names,” De Morgan states that “the purpose of the present treatise is only the examination of some of the manifestations of thinking power in their relation to the language in which they are expressed” (p. 27). [D]

**124 Shannon, Claude Elwood, 1916-2001, and Warren Weaver, 1894-1978**

*The mathematical theory of communication; Recent contributions to the mathematical theory of communication*  
Urbana: University of Illinois Press, 1949

A founding figure in information theory, the mathematician and cryptographer Claude Shannon originally published his landmark paper in a 1948 issue of the *Bell system technical journal*. The editors of Shannon’s papers, Sloane and Wyner, summarize the work: “In this paper it was shown that all information sources — telegraph keys, people speaking, television cameras and so on — have a ‘source rate’ associated with them which can be measured in bits per second. Communication channels have a ‘capacity’ measured in the same units. The information can



121 Héronne, Pierre Cursus mathematicus: nova, brevi, et clara methodo demonstratus per notas

be transmitted over the channel if and only if the source rate does not exceed the channel capacity." An expository summary by Warren Weaver is included at the end of the book. [D]

own sake, but rather the most complete edition. Perhaps the inclusion of an index made this sixth impression a practical choice for him. [D]

125 Wittgenstein, Ludwig, 1889-1951; with an introduction by Bertrand Russell  
*Tractatus logico-philosophicus*  
 London: Routledge & Kegan Paul, 1955

126 Carnap, Rudolf, 1891-1970; translated by Amethe Seaton (Countess von Zeppelin)  
*The logical syntax of language*  
 New York: Humanities Press ;  
 London: K. Paul, 1951

Wittgenstein's terse and brilliant work on the nature of language and representation appears in the Semeiology Collection in the form of this late printing of the 1922 bilingual edition. As an artifact of publishing history — with its flawed English translation by Cambridge undergraduate Frank Ramsey and the introduction by Bertrand Russell that Wittgenstein found so objectionable — the volume captures the turmoil and complexity of Wittgenstein's intellectual activity at this time. Philip Arnold noted periodically throughout his correspondence that he was uninterested in collecting first editions for their

Rudolf Carnap was a member of the Vienna Circle of philosophers whose discussions focused on concepts related to Wittgenstein's *Tractatus*. *The logical syntax of language*, originally published in German in 1934 and in this English translation in 1937, is Carnap's response to that work. His work on the syntactic structures of philosophical problems and language is thought to have facilitated the development of natural language processing. [D]

127 **Locke, William N. and A. Donald Booth, editors**

*Machine translation of languages:  
fourteen essays*

Cambridge: Published jointly by Technology Press of the Massachusetts Institute of Technology and Wiley, New York, 1955

This collection of papers appeared just six years after scientist and mathematician Warren Weaver published his memorandum on how computers might be used in the non-numerical application of translation work, an outgrowth of his responsibilities overseeing decipherment-related operations research during World War II. Describing the paper in his introduction to *Readings in machine translation* (2003), Sergei Nirenburg notes that “Translation of natural language seemed to be a very natural extension for the methods used in breaking codes. It is no surprise, therefore, that the treatise universally considered as the major impetus for the original interest in MT [machine translation] proceeds intellectually from the metaphor of cryptography” (p. 4). The 13 papers in addition to Warren’s provide a snapshot of the developmental stages of computational linguistics and related fields. [D]

128 **UNESCO**

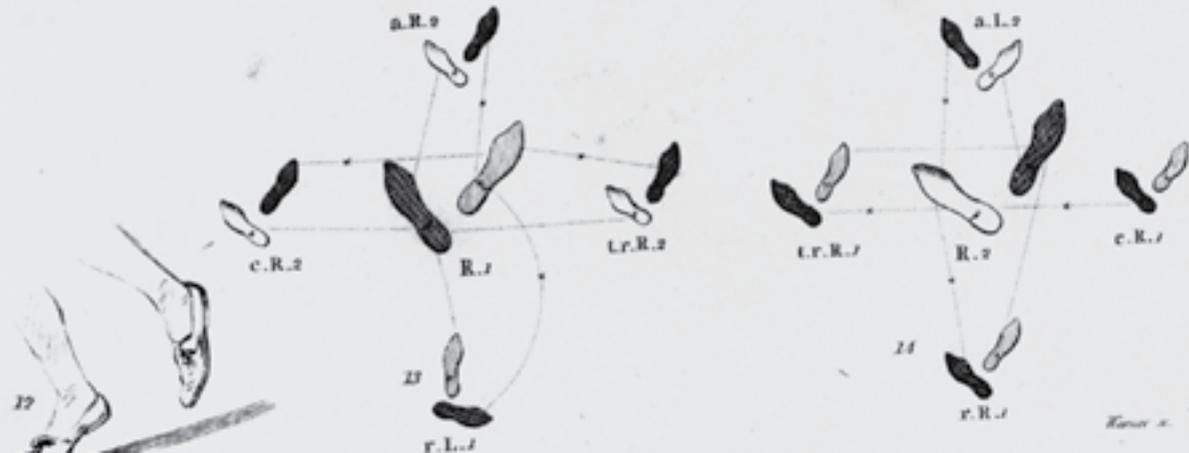
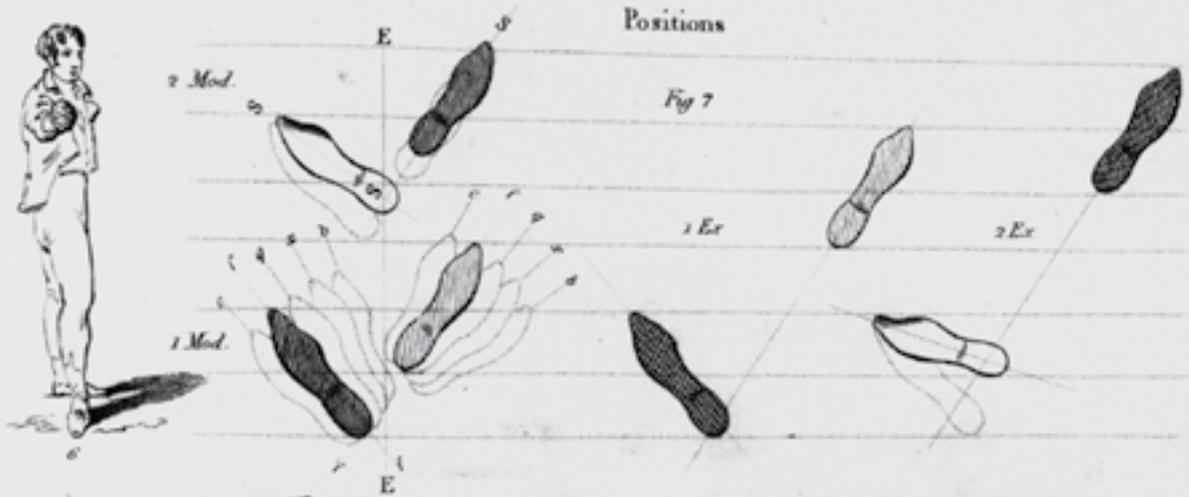
*Scientific and technical translating: and other aspects of the language problem*  
Paris, 1957

Contributors from 21 countries participated in the far-reaching UNESCO study documented by this report on the problems of sharing scientific literature in an international environment. “Individual chapters in this report deal with the quantitative appraisal of the translations problem, qualitative aspects of translating, methods and organizations for translating, and making translations available. In one chapter can be found suggestions for aiding foreign language study for scientists, and methods for the recruiting and training of staff translators. Additional topics discussed are speculative ideas on adapting existing languages or an artificial language, such as Interlingua, for international use” (Parker,

*Bulletin of the Medical Library Association*, April, 1958). The complex mingling of linguistic and political concerns is a recurring theme throughout the multi-century scope of the Semeiology Collection. [D]

129 *Semiotica: journal of the International Association for Semiotic Studies*  
Hague: Mouton, 1969-

In a letter dated November 25, 1970, Philip Arnold writes that “The new journal *Semiotica* is covering ground quite closely related to the field of my collection. I found it interesting that a journal has been started to deal with this subject matter, because it has always seemed in the past to fall between the boundaries of other recognized fields.” The journal’s editor at that time, Thomas A. Sebeok, includes a laudatory description of the Semeiology Collection in the January 1974 issue. [D]



**130 Reisch, Gregor, d. 1525**

*Margarita philosophica*

Basilee: Michael Furter and Jo. Schott, 1508

This is one of the most remarkable books of the early 16th century and has been called “the first modern encyclopedia.” The copy in the Semeiology Collection is complete with a highly regarded folding woodcut map of the world, missing from most copies. *Margarita philosophica* has been greatly sought after by collectors for its fine woodcut illustrations and the variety of subjects treated, including arithmetic, music, geometry, astronomy, astrology, natural philosophy, anatomy, and the senses of the brain. Reisch, confessor to Maximilian I, expressly composed the work as a compendium of all the sciences. The Semeiology Collection’s interest in the book rests mainly with the sections on the study of grammar, dialectics, and rhetoric. [H]

**131 Engel, Johann Jacob, 1741-1802**

*Practical illustrations of rhetorical gesture and action; adapted to the English drama: from a work on the subject by M. Engel by Henry Siddons.* 2nd edition, improved  
London: Sherwood, Neely and Jones, 1822

Originally published in 1785-1786, *Ideen zu einer Mimik*, by the German Enlightenment writer, playwright, and tutor to the future King Friedrich Wilhelm III, is well represented in the Semeiology Collection; editions appear in German (1812), Dutch (1790), Italian (1820), and in this adaptation in English. Engel devised a complex classification system for the body movement described in his work, with distinctions drawn, for example, “between gestures that express concepts and those that express states of mind. The distinctions he draws are partly in terms of causes (mechanical, voluntary, involuntary

and partly in terms of semiotic status: whether the expression is a symptom, a gesture of depiction, a gesture which, in its action, directly displays the actor’s intention ... or a gesture as a signifier of mental activity” (Kendon, *Gesture: visible action as utterance*, p. 87). The work is handsomely illustrated with 69 engravings of actors in motion. [D]

**132 Austin, Gilbert** (see opposite, page 77)

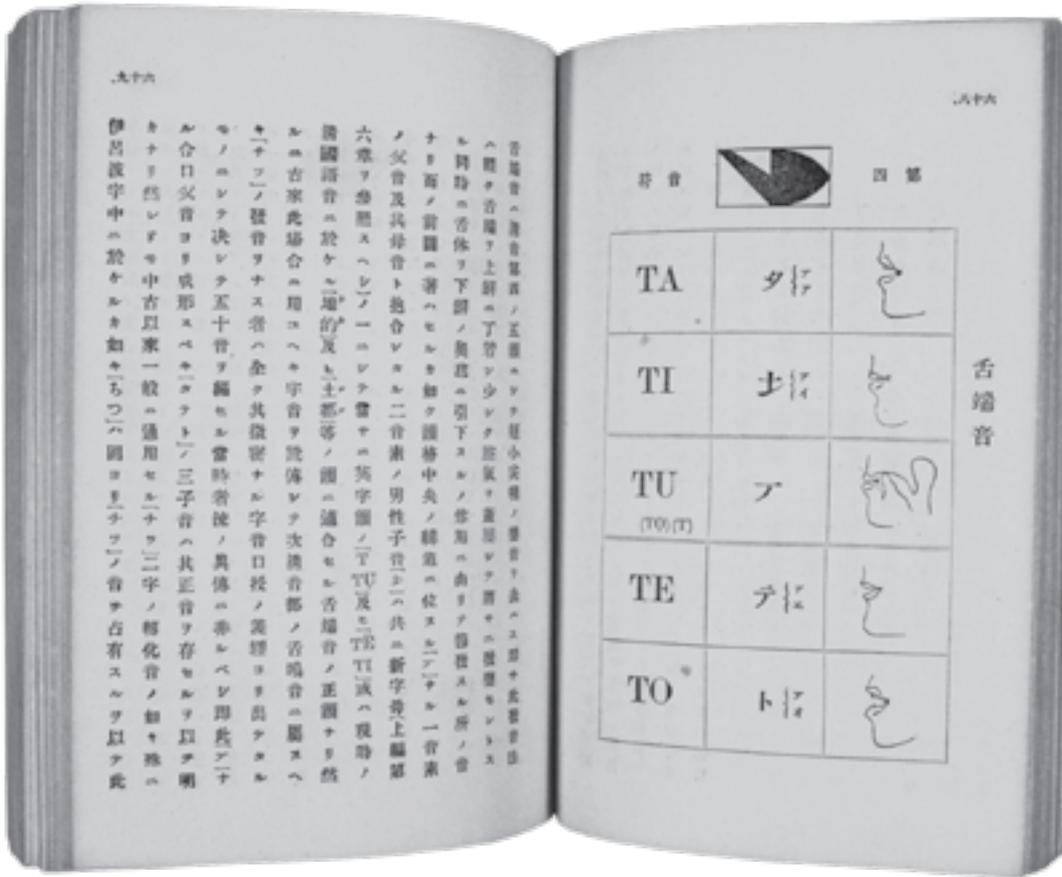
*Chironomia, or, A treatise on rhetorical delivery: comprehending many precepts, both ancient and modern, for the proper regulation of the voice, the countenance, and gesture*  
London: T. Cadell and W. Davies, 1806

Like Johann Engel above, Gilbert Austin was an author and educator specializing in gesture as a means of nonverbal communication. His work, too, describes and classifies actions, with advice on how they may be used to enhance rhetorical delivery. As always, Philip Arnold was interested in the analysis and description of a given communication system; Austin draws on both ancient and contemporary sources to provide concrete examples of effective body-oriented rhetorical technique. [D]

**133 Ōtsuki, Genkan, 1785-1837**

*Seion hatsubi.* 2 volumes  
Edo: Suharaya Sasuke, 1826?

A physician and son of Otsuki Bansui, the noted promoter of Dutch studies in Japan, Otsuki Genkan here offers the reader a manual on the pronunciation of the Dutch language. Employing the Japanese syllabary and Chinese characters, he indicates the manner in which Western languages would be pronounced. He also compares the pronunciation of Japanese and Western languages. Appended to the second



135 Ikeda, T. K. A new spelling book, with remarks and rules on the elements of sounds and principles of pronunciation based on Webster's dictionary of the English language

volume is an essay on the origin of the Roman alphabet. Genkan's works include *Ran'en nissho*, *Rangakuhan* among others. [R]

134 Monroe, Mrs. Lewis B.

*Sounds of the English language for class drill in articulation, with diagrams illustrating Bell's visible speech; Monroe's vocal gymnastic charts, embodying the daily physical drill of the Boston University School of Oratory*  
Boston: Boston School Supply Co., 1881

After Lewis B. Monroe passed away in 1879, his widow authored the elocution-based readers made popular by her late husband. She also produced this massive portfolio of illustrations and diagrams, comprising two oratory-related works, for display in the classroom. One side of each sheet shows Monroe's system of postures for facilitating breathing and enhancing the content of speeches. The reverse of each sheet,

based on Alexander Melville Bell's method of teaching the deaf to speak, shows the position of lips, teeth, throat, and tongue in speaking, along with the orthographic system he developed to represent the sounds. Bell's son, Alexander Graham Bell, made enhancements to the system before developing his own method of visually representing speech using a spectrograph. [D]

135 Ikeda, T. K. (see above)

*A new spelling book, with remarks and rules on the elements of sounds and principles of pronunciation based on Webster's dictionary of the English language*  
Tow Kyow [Tokyo]: Kaiseidow: Hakubunsha & Maruya: Kyowekishowsha, ca. 1888

This work for Japanese students of English includes descriptions and diagrams illustrating the pronunciation of English words. Various sounds are categorized based on the placement

of the teeth, lips, throat, and so forth, used to produce them; graphic symbols are used to organize and identify the various sound classes. This is a presentation copy from the author. [D]

**136 Hall, Edward T., 1914-2009**

*The silent language*

Garden City, N.Y.: Doubleday, 1959

Born in Webster Groves, Missouri, Edward Hall was an anthropologist specializing in nonverbal communication and cross-cultural interaction. "After teaching anthropology at the University of Denver and Bennington College in Vermont, Mr. Hall directed a program for the Foreign Service Institute in Washington designed to help State Department employees negotiate cultural differences when they took on overseas assignments. At the same time, he carried out research at the Washington School of Psychiatry that led to his most influential book, *The silent language* (1959), which outlined his theory of explicit versus informal forms of communication" (Obituary, *NYT*, Aug. 5, 2009). [D]

**137 Rosenblith, Walter A., editor**

*Processing neuroelectric data*

Cambridge: M.I.T. Press, 1962

In the obituary published by the Massachusetts Institute of Technology, where he acted as professor, associate provost, and provost over the course of 30 years, Walter Rosenblith is said to have "pioneered the use of computers and mathematical models in the study of the brain as a biophysical information handling system" (*MITnews*, May 8, 2002). This technical report by several authors describes the challenges involved in the quantification, processing, and interpretation of neuroelectric data, as well as the potential uses of this data in neuroanatomical and behavioral studies. [D]

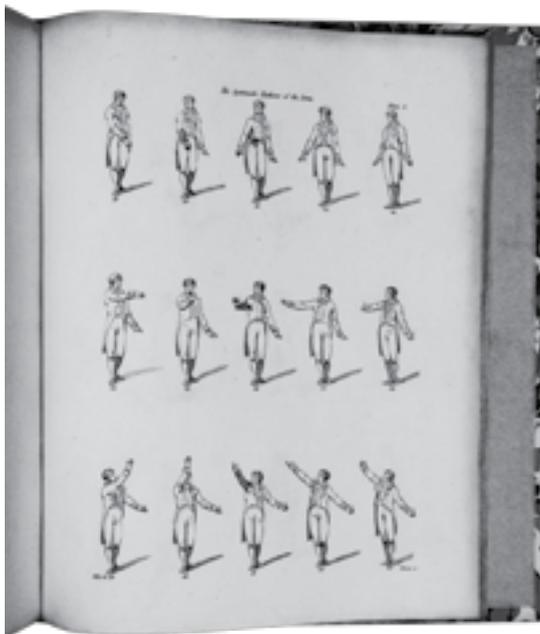
**138 Davis, Martha, 1942-**

*Understanding body movement:  
an annotated bibliography*

Bloomington: Indiana University Press, 1982

First published in 1972, this bibliography by communications scholar and clinical psychologist Martha Davis includes some 900 entries on movement behavior, mostly from 1900-1971, from such disparate fields as "child development, psychology and psychiatry, ethology and animal behavior, anthropology, sociology, and the performing arts. Literature concerning dance, drama, and mime was considered particularly important, because these arts have accumulated knowledge about movement behavior for centuries. New areas such as dance therapy, body-awareness techniques, and special body movement training were also surveyed for works containing analyses and psychological interpretation of movement, posture, muscular tension, and so on" (p. ix). [D]

132 Austin, Gilbert Chironomia, or, A treatise on rhetorical delivery; comprehending many precepts, both ancient and modern, for the proper regulation of the voice, the countenance, and gesture





# Related Collections

Erin K. Davis, Curator of Rare Books

Philip Mills Arnold was methodical to a fault in defining the scope of the Semeiology Collection, identifying important developments in the field and collecting landmark works in its major areas of enquiry. His correspondence is filled, however, with references to book purchases that fall outside the collection's scope; these, he good naturedly donated to the Libraries' general (non-semeiology) special collections.

In fact, given his studied reticence (an in-house letter from department head Holly Hall cautioned that "he dislikes effusiveness"), the full range of Mr. Arnold's interests and largesse is probably not as well known as it should be. I've attempted to compile here descriptions of his non-semeiology collections, as well as the ways his generosity continues to benefit the Libraries to this day. Other examples no doubt exist.

## **P.M. Arnold Bequest**

When Philip M. Arnold passed away in 1994, he left his entire estate, along with a four-million-dollar endowment, to the Washington University Libraries. Items from his home, including figurines and carpets, can be seen throughout the various libraries — these small tokens are daily reminders of the warmth and generosity of this longtime friend and patron. The endowment typically generates several hundred thousands of dollars per year, which is used to purchase books for Special Collections and the Libraries' general collections. Books purchased with this fund are identified in the Libraries' online catalog with a donor note: Gift of P.M. Arnold Bequest.

## **Boethius**

The Department of Special Collections is home to Mr. Arnold's collection of works by the late-classical writer Boethius. Prior to his 1982 donation of the collection, Mr. Arnold paused to reflect on his endeavors: "I have some misgivings about the ultimate utility of my Boethius collection. I now have 2 fifteenth century manuscripts, 3 fifteenth century printed books, 13 sixteenth century books, 5 seventeenth century books, and a few later ones. Do you suppose that such a repetition of the same work would ever be used, or will they just be museum pieces?" (October 15, 1979). Department head Holly Hall outlined the importance of the collection in her reply of November 8 and, as the present curator, I can vouch for the fact that it is a well used and warmly consulted scholarly resource. The collection now numbers nearly 60 editions; of these, a handful are modern critical editions and the rest are of the 19th century and earlier, with the greatest concentration in the 16th century. The collection continues to grow, most recently in 2010 with the acquisition of two 16th-century Italian translations produced for a contest organized by Duke Cosimo I de' Medici of Florence.

## Comets

Mr. Arnold's remarkable comet collection — 34 works in 33 volumes, the earliest 1531 and all but a few printed before 1900 — came to the Libraries in 1986. The donation and a celebratory exhibition of the same year coincided with the return of Halley's comet. The exhibition's brochure, *Starry Messengers: Comets and Cometary Science to 1759*, provides an overview: "This exhibition seeks to document just what man has learned, believed, and written about comets over most of the previous two millennia. Throughout this period comets have provoked feelings of awe, wonderment, and dread — starry messengers which boded ill for mankind. It was not until Edmond Halley proposed a theory of cometary motion — later proved when the comet since named for him returned as predicted in 1759 — that comets began to lose much of their mystery. It seems appropriate at this time, then, to examine Halley's remarkable achievement in light of what preceded it; for 1986 should, like 1759, be another watershed year for cometary science."

## Simone Porzio

Mr. Arnold donated his collection of books by the Italian humanist Simone Porzio (1497-1555) to the Washington University Libraries in 1966. In a letter of November 11, 1965, Mr. Arnold remarked that, based on his research, "it seems possible that my collection of Porzio's works is the most complete in the country." Upon donating the 13 early modern editions in this gem of a collection, he noted that the group represented 20-year's effort, and that, "Considering the increasing scarcity of such items, I may never find any more, although I intend to keep looking." The pleasure is palpable in a letter of November 25, 1981, in which he announces his donation of yet another newly-acquired volume, Porzio's *Modo di orare christianamente* (1551).

## Gaylord Music Library

Another of Mr. Arnold's interests was music. The books and many hundreds of CDs and LPs that came to the Music Library upon his death reveal a depth and knowledge that is perhaps unsurprising given the care with which he cultivated his interests. Items included the *New Grove Dictionary of Music and Musicians*, the *New Grove Dictionary of Opera*, and recordings of classical music, opera, and 20th-century experimental music.

## Philip Mills Arnold Papers

The Department of Special Collections' Modern Literature & Manuscripts unit administers Mr. Arnold's personal papers and realia in addition to his semeiology-related manuscripts and archival collections. Highlights include a collection of 19th-century printed sheets depicting hand alphabets, a bound set of calligraphy samples, and a 16th-century manuscript of Raymond Lull's *Ars demonstrative et ars brevis*, all of which are described in this catalog. Among Mr. Arnold's personal papers are his publications and other materials related to his professional activities at Philips Petroleum Company, as well as photographs, book dealer catalogs, and a selection of items from his estate. A finding aid describing the collection is available via the Department of Special Collections' website.

## Francis T. Guelker

In 2003, Washington University Libraries purchased the cryptology-related collection of Frank Guelker, a Washington University alumnus (B.S. Physics, 1954) and World War II cryptographer assigned to the 50th Signal Battalion of the VII Corps. Guelker's wartime experiences are related in the July 1984 issue of *Cryptologia* and in the May 7, 2004 issue of the *Washington University Record*. His collection, numbering some 100 books and four boxes of archival material, became part of the Semeiology Collection, complementing its existing strengths in the area of cryptographic studies.

# Appendix Scope of the Philip Mills Arnold Semeiology Collection (1966)

Philip Mills Arnold

*In a letter of June 13, 1966, William Matheson, head of Special Collections, submitted a list of over 100 Library of Congress subject headings for Mr. Arnold's consideration. Drawing on a preliminary conversation they had had about the collection, Matheson was attempting to get a better understanding of Mr. Arnold's collecting activity and also to prevent duplicate purchases, since the department was developing holdings in related (and complementary) areas. Mr. Arnold responded by dividing the subject headings into five categories: A) too general to be of use, B) outside the field, C) marginal to the field, D) within the field but not collected, and E) collected. Mr. Arnold then divided the collection into 11 major areas, distributing the subject headings among them and providing additional terms (these non-Library of Congress terms are identified with the parenthetical comment "not WU"). Mr. Arnold also wrote a brief description of the 11 collecting areas, occasionally commenting on specific subject headings, and he provided a list of specific books by way of example.*

*This appendix, an excerpt of Mr. Arnold's July 18, 1966 document, includes the text of Mr. Arnold's letter, his description of category E, and the descriptions of his collecting areas with their associated subject terms.*

*Erin K. Davis, Curator of Rare Books*

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July 18, 1966

Dear Mr. Matheson:

I have now had time to consider the material in your letter of June 13, and have prepared the attached remarks. After you have had time to consider them, I would appreciate having your comments and any suggestions that you might have about ways in which we could collaborate.

Sincerely yours,

[Phil. Arnold]

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Within Category E I have made eleven subdivisions, and have given them titles that I think are reasonably descriptive of what I am trying to collect. You may be astonished at the way I have grouped some headings, but if you will consider the groupings, it will give you a clue to the way I view the subject matter. I will comment on each of the eleven subdivisions.

#### 1. Semantics

Semantics (Philosophy)  
General Semantics  
Semantics, Comparative  
Lexicology  
Language and Languages, Etymology  
Meaning (Psychology)  
Semasiology (not WU)

Semantics is a rather general term, but I cannot think of a better one. Semasiology means practically the same thing, but it is not a well-known word. Since lexicology and etymology are closely connected with semantics, I include some material of that type in my collection; for example, early dictionaries (pre-Johnson). Of course, collecting dictionaries in general could fill a whole library, so I am selective about material of that kind.

#### 2. Logic, Symbolic and Mathematical

Symbolic Logic  
Analysis (Philosophy)

I think that symbolic logic is closely connected with the analysis of language and helps to understand how languages are constructed. I feel that symbolic logic might be considered a subdivision of semantics. Modern literature in the field is extensive, so what I am mainly looking for is early material, although I do have some recent material.

#### 3. Mathematical Linguistics

This is a new field, and not many books have been published in it. Most of the work has appeared in journals. Consequently, I do not have much, but expect to add to what I have.

#### 4. Communications Research

Information Theory  
Languages, Philosophy  
Languages, Psychology  
Children, Language  
Noise and Distortion (not WU)  
Brain Mechanisms (Communication) (not WU)  
Animal Communication (not WU)

There are different ways of looking at the philosophy and psychology of language. Some workers are investigating the field scientifically and not just speculatively. I try to find works that are not simply speculative. Most material of that kind is recent. Study of the language of children is an attempt to acquire information about the roots of language, and therefore is research on communication. Since there must be a receiving mechanism as well as a sending mechanism in communication, study of the mechanism by which the brain receives and analyzes information is also communications research.

#### 5. Translating and Interpreting

Machine Translation  
Programming Languages (Electronic Computers)

I think it obvious that translating and interpreting are an essential element of communication. People who engage in this activity are equivalent to what are called transducers in non-living systems. For example, it is necessary to have a transducer to convert a sound signal into an electrical signal that may be analyzed by electronic circuitry.

## 6. Pasigraphy and Pasilaly

Language, Universal  
Language, Artificial  
Novial  
Esperanto  
Ido  
Volapük (not WU)

These are rarely used terms, but they cover universal or artificial languages and some related subject matter. I am trying to find early material in this field. The literature is too voluminous after about 1875. Volapük (about 1879) was the first of the artificial languages that excited popular imagination. The number of books (and artificial languages) increased rapidly thereafter.

## 7. Signals and Signalling

Gesture  
Pantomime  
Deaf, Means of Communication  
Indians of N. America, Sign Language  
Drum Signals (not WU)  
Semaphores (not WU)  
Flag signals (not WU)  
Kinesics (not WU)  
Dactylology (not WU)  
Telegraphy

To make a distinction between “Signals and Signalling” and “Signs and Symbols” is arbitrary. Nevertheless, I have used these terms for major headings because I think they can be readily understood. Under “Signals and Signalling” I include communication means that involve activity or are dynamic, while I limit “Signs and Symbols” to written, printed, incised, or other passive means. If anyone wished to argue the point, I would readily admit that “Signals and Signalling” should be a subdivision of “Signs and Symbols”, which is more general in meaning. Telegraphy meant signalling with flags, smoke, heliographs, or semaphores until the electric telegraph was invented. I am looking for works that precede the electric telegraph, and works that cover the inception of electric telegraphy.

## 8. Signs and Symbols

Symbolism  
Christian Art and Symbolism  
Jewish Art and Symbolism  
Other Religions, Symbolism (not WU)  
Symbolism in Communication  
Crosses  
Devices  
Emblems  
Swastikas  
Petroglyphs  
Imprese (not WU)

I have included the term “Christian Art and Symbolism” because it is a Library heading; I limit my acquisitions to works that deal with the symbolic aspects. I do not have any works that deal with Jewish Art and Symbolism. There is a large literature on Masonic symbolism; I exclude that. Crosses and Swastikas are merely examples among many kinds of symbols. I have books that deal with them, but the kind of work I am seeking is more general in nature. We have previously corresponded about Emblems, and I have given you a list of the Emblem books that I have, giving the term Emblem the restricted meaning that it has in dealing with that class of literature. Imprese is almost the same as Emblems in Emblem books. I exclude mathematical symbols and musical notation in general.

## 9. Writing – Types, History, and Development

Writing  
Writing, Uncial  
Writing, Luxeuil  
Palaeography  
Diplomatics  
Alphabet  
Phonetic Alphabet  
Abbreviations  
Blind, Printing and Writing Systems

I do not look for books on penmanship, calligraphy, and similar artistic approaches to writing. I am interested in it as a means of conveying

information, not as an art form. I do not know what Luxeuil Writing is; I have never seen the term before, and it does not appear in any dictionary or glossary that I have. I include it here as a heading from the Library catalog. As for Printing and Writing Systems for the Blind, it might be argued that they are not “writing”, since they are intended to be perceived by touch instead of by sight. I think they should be construed as writing, because they can also be read by sight; I once learned to read Braille that way.

## 10. Cryptography

- Ciphers
- Cipher and Telegraph Codes
- Polygraphy (not WU)
- Tironian Notes
- Shorthand (or Stenography)

Cryptography may be regarded as an extension of writing. Many authors who deal with writing in general include sections on cryptography in their books. Similarly, shorthand or stenography may be regarded as a kind of cryptographic system. Stenography and cryptography had common origins. I am trying to find books on shorthand before about 1700, and on cryptography before 1940. Tironian notes are a special kind of stenography, and I acquire any book on them regardless of period, because there are few of them. I am looking for early books on telegraph code systems to show how the system developed. I have a few modern code books, but am not adding to them.

## 11. Decipherment of Lost Languages

- Cuneiform Writing
- Hieroglyphics
- Runes
- Cypriote Syllabary
- Minoan Writing
- Picture-Writing, Mexican
- Egyptian Language, Writing, Hieroglyphic
- Picture Writing, Central American
- Cretan Writing (not WU)
- Etruscan Language (not WU)

The decipherment of lost languages may be regarded as an extension of cryptography, but with some added complexities. What I try to find are works that are speculative about the language before it is deciphered, works that disclose a successful decipherment, and works during the period of controversy that immediately follows. After the decipherment is well established, I drop the language, because then it is almost the same as any other foreign language. Egyptian Hieroglyphics are interesting until after the period of Champollion; Etruscan is still a subject of interest.

HEAD OF SPECIAL COLLECTIONS Anne Posega  
CURATOR OF RARE BOOKS Erin K. Davis  
EDITORS Erin K. Davis, Joy Lowery, Evie Hemphill  
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in the John M. Olin Library Grand Staircase Lobby and  
Ginkgo Reading Room, October 25, 2010 — May 27, 2011

Not limited  
By language,  
It is ceaselessly expressed;  
So, too, the way of letters  
Can display but not exhaust it.

Dogen (1200-1253)

Translation by Steven Heine