THINGS MAGICAL in the collections of the Rare Book and Special Collections Division by Leonard N. Beck

What a melancholy as a mantle-tree? Will you see any tricks, of legerdemain, slight of hand, cleanly conveyance, Or deceptio visus? What will you see, gentleman, to drive you out of these dumps?... I am a jugler: I have the superficial skill of all the seven liberal sciences at my fingers' end.

A Pleasant Comedy Called Wily Beguiled[i]

In 1974 votaries of the happy magic which amazes to amuse and cheats with forethought but without malice celebrate the centennial of the birth of Harry Houdini. As every public reference librarian knows, the man whose motto was "The Impossible Possible" continues to occupy the popular imagination. He was and is the first of magicians: if other magicians are remarkable, Houdini is incredible. That word was used by so sophisticated an observer as Edmund Wilson in conveying the exhilaration experienced from seeing in Houdini's performance "a human skill or faculty earned to its furthest point, to a point where its feats seem incredible."

The Library of Congress has an obligation to the memory of Harry Houdini. The books and periodicals of the Houdini Collection came to the Library in 1927; his theater programs, playbills posters, and memorabilia found their way to the Theater Library of the University of Texas somewhat later. Following Houdini's example, John McManus, air force officer and corporation executive, and Morris N. Young, of New York, combined their collections of magica in a generous gift to the Library in 1955. The holding in the Rare Book Division can provide a panoramic view of the richly idiosyncratic literature of what Mr. Young called "illusion practices," the magician's manipulation of the imagination of others.

Obviously, this note cannot hope to mine all riches of these holdings or to do anything more than to break enough ground to let the glittering ore shine through. It must be left to the historian of the theater to write of the small Olympus Houdini occupies together with the other greater-than-life showmen. The bibliography of the association of natural magic and theater magic—or, to repeat our epigraph, the jugglers "superficial skill of all the seven liberal sciences"—is possibly a rich enough vein for this notes mining. While drawing largely upon the Houdini and McManus-Young Collections, it will permit occasional reference to other collections in the Rare Book Division not ordinarily thought of as containing magic. As bibliographers rather than historians and therefore travelers more interested in the journey than in the arrival, we can examine the bibliographical landmarks along the road to modem magic without overmuch concern for synthesis or conclusion making, once the excursus of the next paragraphs is disposed of. Thereafter we will imitate the mode of presentation for matters magical established by Gyngell, the early 19th-century conjuror. After each feat he would bow to his audience and declaim enigmatically Ladies and gentlemen, the next will be something else!"

The juggler's reasons for acquiring his superficial skill in the seven liberal sciences can be briefly explored. Giambattista della Porta stated that the natural magician extracts "from the very heart of nature the secrets enclosed therein—then he makes public the things he has found ... so that all may know of them—and be full of good will towards the Artificer and praise him and honour his great powers."[ii] Once natural magic is properly understood as the study of the precepts of nature in order to develop

natural powers, and not to violate natural laws as black magic does, its relationship with science is manifest.

Speaking for science, one of its founding fathers, Francis Bacon, wrote in the New Atlantis: "We that have so many things truly natural, which induce admiration, could in a world of particulars deceive the senses, if we would disguise these things, and labour to make them seem more miraculous."[iii] The miracles of natural magic, like those of science, are miracles only in the etymological sense of calling forth admiration. Since this, of course, is the one effect for which the juggler strives, he wrapped himself in the cloak of the natural magician and adapted to his purposes the achievements of nature science.

Natural Magic
But his dominion that exceeds in this, Stretcheth as far as doth the mind of man: A sound Magician is a Demi-god.
Christopher Marlowe. *Doctor Faustus*

Agrippa's portrait as it appears on the title page of third book of *De Occulta Philosophia* (1533), expresses the qualities of dignity and strength 'which are his contribution to the concept of the magician. Frances Yates comments in Giordano Bruno and the Hermetic Tradition (Chicago: University of Chicago Press, 1964) p.142, that "For Agrippa necromancy and conjuring were Renaissance in spirit, not the old hole-in-the-corner business of the persecuted medieval magician. They come invested with the noble robes of Renaissance magic, with the dignity of the Renaissance Magus."

It was Robert-Houdin, greatest of Houdini's precursors, who defined the stage magician as an actor playing the role of a magician. The prototype magician is, then, the amalgam of fact and fiction created of such awesome figures as Albertus Magnus, Trithemius, Paracelsus, or Agrippa von Nettesheim. These were natural magicians because they had mastered "the secret miracles of nature" (the phrase is the title of Lemnius' De miraculis occultis naturae, Frankfurt, 1611) and their knowledge was literally power. The most elevated Renaissance depiction of the natural magician is Prospero in Shakespeare's Tempest. The most famous exponent of Renaissance natural magic, and of Renaissance skepticism, was the ambiguous' Agrippa von Nettersheim (1486?-1535) who influenced William Blake and Albrecht Durer, and whom young Dr. Frankenstein read before beginning his unhappy experiments.

Agrippa's *De Incertitudine et Vanitate Scientarum* (translated in the McManus-Young, London, 1674 copy as The Vanity of Arts and Sciences), which concludes that all human knowledge is riddled with error, was written at the same time as the three books of his *De Occulta Philosophia*. [1674 is a typo in the essay. The work was published in 1694.] Perhaps Agrippa saw no contradiction in rejecting the knowledge of his time for a new knowledge to be achieved by illumination, revelation, or the reinterpretation of an ancient esoteric doctrine.
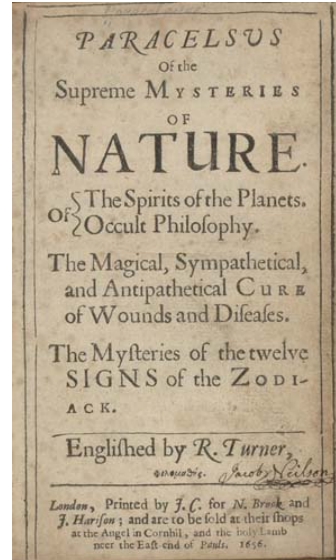
Image from Henry Cornelius Agrippa's fourth book of *De Occulta Philosophia*. Turner's *Paracelsus*, of 1656

It is indicative of the complex intellectual atmosphere of the period that this occult text should be preceded by six verses from Cambridge scholars praising the translator's work. Five years later Newton came to Cambridge University. Robert Turner fought a rearguard action against the displacement of the Renaissance animistic world view by the new mechanistic one. Turner's *Paracelsus*, of 1656, announces his intention of publishing the "famous art of *Steganography*, Authore Tritemio, to speak our own language, and perhaps the *Occult Philosophy* of Agrippa digested into a plainer method."

The first book of the *De Occulta Philosophia* treats of the natural magic of the four elements (earth, air, fire, and water) of this sublunary "elemental" world. Printing was began in 1531, interrupted by the Inquisitor Conrad Colyn of Ulm, and resumed in 1533. The 1531 edition was described by David Clement's *Bibliotheque Curieuse* (1750) as "presque entierement disparu." The Lessing J. Rosenwald Collection on the history of the illustrated book has both editions of this fons et origo of natural magic.

Its demon-conjuring hardcore black magic explains the similar rarity of the apocryphal fourth book of the *De occulta philosophia*. The Rare Book Division has a copy of the *London edition of 1655* of this heady pseudo-Agrippa cum cabala mixture. Houdini owned the 1855 *German edition* published by Scheible of Stuttgart, the bookseller -publisher specializing in Faustiana. The fourth book, perhaps more than the others, justifies Robert Southey's description of the Agrippine texts:

> The letters were written with blood therein And the leaves were made of dead men's skin.
> Cornelius Agrippa; a Ballad

The dedicatory epistle of *De occulta philosophia* is addressed to Agrippa's teacher, the Abbot Johannes Trithemius. (1462-1516), whom librarians know as a founder of universal bibliography, but who was famed in his own time for having resurrected the shade of Anne of Brittany. The story has been explained as an ingenious use of mirrors or of an early version of the magic lantern elaborated by Porta and Athanasius Kircher in the next two centuries. Popularized by the "Fantasmagorie" theater, set up in Napoleonic France by Etienne Robertson (whose *Memoires Recreatifs* of 1831-33 are in the Houdini Collection), the magic lantern is a standard component of parlor-magic literature, appearing, for example, as the first item *Popular Amusements* (Philadelphia, 1838) in the Rare Book Division's Juvenile Collection.

Trithemius' *Polygraphia*, the first book on codes and ciphers, is represented in the George Fabyan Collection on the Shakespeare-Bacon controversy by two copies of the first edition of 1518 and by seven other printings. In addition, the Fabyan Collection holds the 1606, 1621, 1655, 1676, and **1721** editions of Trithemius' *Steganographia*, the second book of which purports to tell how to transmit thought without words. Called "second sight" when adapted to the stage, this quasi-telepathy is further represented in the Fabyan Collection by three editions (1641, 1694, 1695) of Bishop Wilkins' *Mercury* (subtitled "shewing, how a man may with privacy and speed communicate his thoughts to a friend at any distance"). It is seen once more in the section on the imagination in *Sylva Sylvarum* when Bacon recalls that a visitor at his father's house one day told a spectator what card another spectator would take in a demonstration of the psychological "force."

After Agrippa the greatest name in natural magic is that of Giovanni Battista della Porta, (1535?-1615), the intention of whose *Magiae Naturalis* is to take natural magic entirely away from the devil. "His magic is natural because the forces used are objectively present in nature, like the magnet which mysteriously points to the north. Porta's introduction announces that "I shall observe what our ancestors have said; then I shall shew by my own experience, whether they be true or false." He requires the magician to know mathematics perfectly, to master optics, and to be rich, for without money nothing can be done in these matters. The work grew with time; the original four books became 20 in the Naples (1589) edition. The emphasis also changed, moving always toward the utilitarian, until Porta's natural magic becomes like that combination of household hints, workshop notes, kitchen and sick room recipes and miscellaneous "half-told half-truths" known as the literature of secrets.
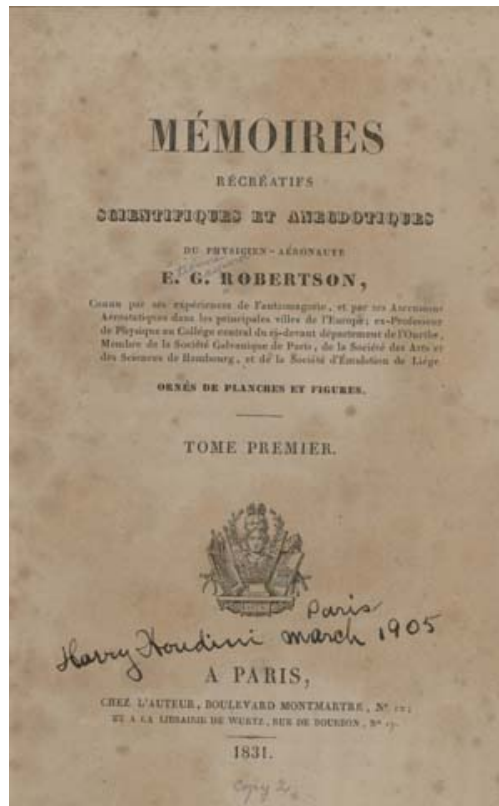
Houdini's copy of Robertson's work. Most popular of the presentations listed in his *Petit repertoire fantasmagorique* (1:294-304) was "Young burying his Daughter." The "Fantasmagorie" was one of the channels by which the *Night Thoughts* of the English poet Edward Young influenced French romanticism. In London the contemporary equivalent of the "Fantasmagorie" burned Moscow before the eye of Napoleon at every performance.
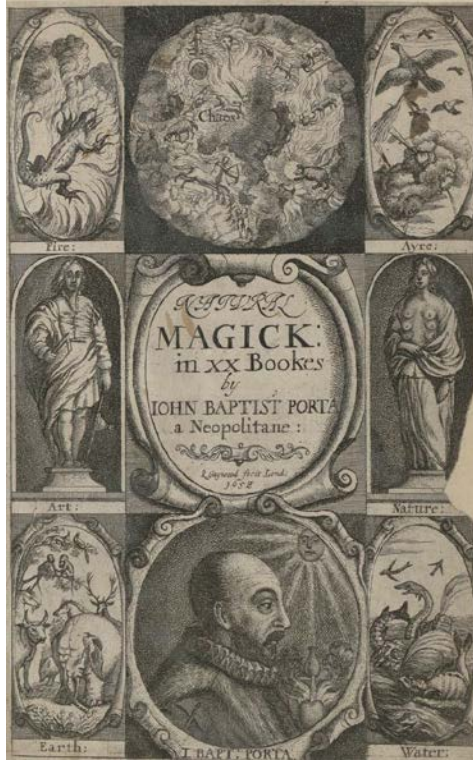
The fontispiece of <u>Natural Magick</u> (London: Printed, T. Young and S. Speed, 1658) is the work of R Gaywood, a pupil of W. Hollar. Porta calls his book Chaos because it is an omnium gatherum of information not easily fitted elsewhere. Book 17 includes a clear description of the camera obscura with and without lens (chapter 6) and proposals for the combined use of convex and concave lenses (chapter 10), which give Porta claims to the invention of both telescope and microscope. Porta charged that his Book 7, on magnetism, was stolen by Gilbert, whose De magnete added only "the mad idea" that the Earth is in motion.
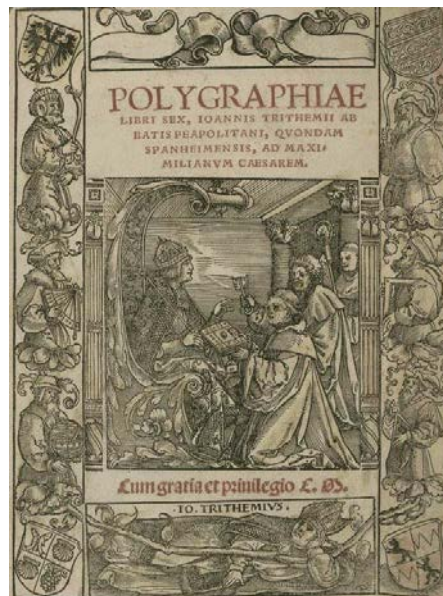

This woodcut is thought to be the work of the "Petrarch Mailer" of the Burgkmair workshop m Augsburg. Trithemius is the figure on his kneel offering the book to the Emperor Maximilian. Behind him, holding out the keys to the <u>Polygraphia,</u> is the publisher, Johannes Haselberg. In the lower part of the frame a reclining Trilhemius displays all the accouterments of his churchly office. The runners issuing from his heart carry sketches of mathematicians, astronomers, and other savants with the instruments of their science. Trithemius' coat of arms is in the lower left corner: the scallop shells, associated with St. James of Compostela, are also the symbols of the Sponheim Abbey. Martin Luther's Tischreden records a conversation m 1539 in which Luther said that Trithemius paraded before Kaiser Maximilian all the deceased emperors and great heroes one after another, as they were when alive, as well as Anne of Brittany, whom Charles VIII of France had wooed away from Maximilian.

The title of Houdini's 1680 Nurnberg edition of Porta, *Magia naturalis oder Haus-kunst- und wunder-buch*, epitomizes this change. It also makes clear the dependence on Porta of Wolffgang Hildebrand, father of the so-called Hausvater natural magic genre, whose *Magia naturalis, Das ist Kunst und wunderbuch* Houdini owned in the 1614, 1663, and **1704** editions.

Robertson of the "Fantasmagorie" describes the *Magiae naturalis* as "my first manual, to which I owe most of my taste for experimental physics." Houdini calls it "the first really important and exhaustive work on the subject," although regretting that it explained tricks without precisely recording their inventors. Houdini's demand is, perhaps, not an entirely reasonable one to make of a Renaissance magician. The Rare Book Division holdings of Porta's *Magiae naturalis* include three Plantin editions (1561, 1564, 1576) and the editions of Cologne (1563), Naples (1589), Frankfurt (1597), Hanover (1619), Leiden (1644), London (1658), Amsterdam (1664), and Nurmberg (1680).

Reginald Scot (1538?-1599) differs from Agrippa as much as Scot's treatise on hop-growing, *A Perfite Platforme* (1576), differs from his *Discoverie of Witchcraft* (1584). Since the extortion of the proof of conclusions previously determined by the torture of old women is not a pleasant theme, we would have preferred to ignore the great witchcraft controversy of the 16th century. The one book that must not be ignored is Scot's *Discoverie*, particularly pages 287-352, which are headed "Natural Magic" and were cut and pasted by the hacks who wrote books with their scissors for the next 200 years. Without Scot there would be far fewer pages in the little 18th-century books associated with Henry Dean and titled some variation on *Hocus Pocus* or, the *Whole Art of Legerdemain*, which are the collector's delight.

A Type or Figure of the Circle for the Master and his Fellows to fit in, shewing how, and after what fashion it should be made.
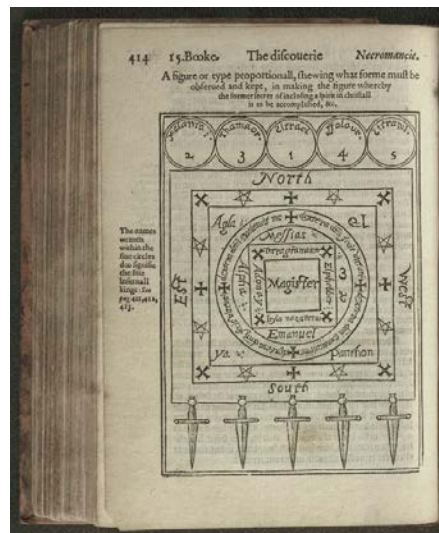
This Circle for the Master to fit in, and his fellow or fellows at first calling, lie back to back, when he calleth the spirit; and for Fairies make this circle with chalk on the ground, as is said before. This Sp? Being once called and found, shall never have power to hurt the Call him in the hour of ? or ? the ? increasing.

"Printed for Andrew Clark, and . . to be sold at Mr. Cotes's near the Golden-Ball in Aldersgate-Street," the volume from which the above detail comes in a very rare variant (the Library's copies may be the only ones extant) of the 1665 edition of Scot's *The Discovery of Witchcraft*. All issues of this edition add a second discourse on devils and spirits and preface the 15th book with nine chapters that explicitly contradict Scot's original by accepting the existence of diabolical witchcraft and elaborating on its practices. Scot has been accused of seeking success by including materials sure to interest the would-be practitioner. The 1665 edition adds six more formulas for the invocation of spirits to Scot's 10 and subtly calls attention (to other arcane matters by putting them into Latin. The tone and texture of the interpolations are such that it is impossible to believe that the anonymous writer did not deliberately set out to give the public a quasi-grimoire.

To prove the absurdity of witchcraft, Scot demonstrated that the juggler, a popular entertainer, could do things "more, or at least no less strange in working miracles" than those attributed to witchcraft, and do them entirely by natural means. He testified that jugglers are God-fearing men, some of them indeed "greatlie commendable." He himself had studied the art, his teacher being a certain John Cautares. Agrippa talks of the juggler in the *De incertitudine*, but this passage may be among the first to mention one juggler specifically and to praise them all. Before Scot, the juggler was one of the traveling people—the fire-eaters, bear trainers, and rope dancers—whom the law punished for the great sin of not being seen to work. *The Discoverie* can be said to defend the juggler and legitimatize his arts by cloaking them in natural magic.

To cut off one's Head and to lay it on a Platter, which the Jugglers call the decollations of John the Baptist


Scot's "Decollation of John Baptist" is the ultimate ancestor of all "sawing-a-woman-in-half" tricks. A reading of his text will make clear what happened on stage in the decapitation scenes of dramas like Marston's The Insatiate Countess (act 5, scene 2) or Massinger's Virgin Martyr (act 4, scene 3). The decollation was then so frequently performed that a piece of doggerel ran: "No knife shall cut this throat in twain/No juggler rend this jug'lar vein." Of course, any audience suspects a draped table under which it cannot see, and Scot's last direction is "not to suffer the companie to state too long in place" after the illusion.
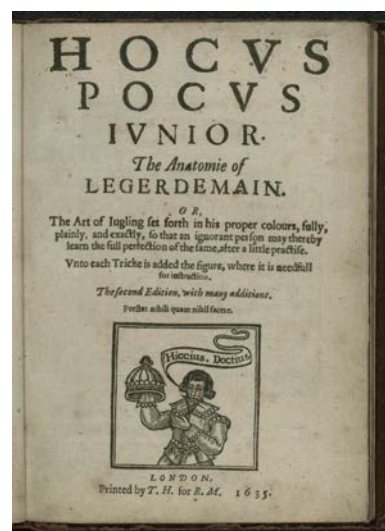
Title page of The whole Art of Ledgermain: or Hocus Pocus

The "Henry Dean" of 1635 styles the decollation, featured as the frontispiece for *Hocus Pocus*, "How to cut a Man's head off and to put the Head into a Platter, a yard from the body," calling it "a noble action, if it be handled by a skillful Hand." The trick varied little from Scot's, pictured in the *Discovery of Witchcraft* in 1684.
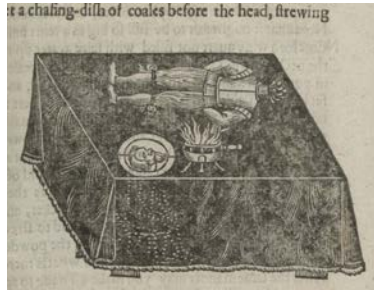
To cut off one's head, and lay it in a Platter, which Jugglers call the decollations of John the Baptist. Strange Feats are herein taught by Slight of Hand, With which you may divert yourself and Friend. The like in Print was never seen before. And to You'll say, when once you've read it o'er.

On the other hand John Dee (1527-1608), Merlin of Elizabethan England and the author of *Mona hieroglyphica* (1564), is a natural magician whose very real scientific achievements have been obscured by his association with entertainment. When Dee was teaching Greek at Oxbridge he produced some sort of drama in which strange figures flew across the stage, and tables moved by themselves, "whereat was great wondering," froin which wondering Dee was never able to clear himself. A somewhat similar situation is described in Andrew Oehler's *Life, Adventures and Unparalleled Sufferings* (Trenton, NJ 1811). In 1806 Oehler was in Vera Cruz, doing balloon and fireworks exhibitions. One night, because the governor was in the audience, Oehler gave as an added attraction a magic lantern ghost show, summoning spirits who appeared in smoke and fire to the accompaniment of thunder and lightning. As a result he found himself in solitary confinement in a cell for six months. Dee, however, never got out of the cell of his bad name.

It is impossible to resist quoting from the introduction to the first English edition of Euclid the lines in which Dee berates his contemporaries: "O unnaturall Countreymen. O unthankfull countreymen. O Brainsicke. Rashe, Spiteful!, and Disdainful! Countreymen. Why oppresse you me, thus violently, with your slaundermg of me: Contrary to Veritie: and contrary to your owne consciences?" He goes on to deny any culpable action: "And for these, and such like marvelous Actes and Feates, Naturally, Mathematically, and Mechanically, wrought and contrived: ought any honest Student, and Modest Christian Philosopher, be counted, & called a Conjurer?

Dee's introduction to the first English translation Euclid defines thaumaturgike as that "art Mathematicall. which giveth certain order to make straunge workes, of the sense to be perceived and, and of men, greatly to be wondered at." His definition recalls Porta's concept of magic as miraculous in the sense of evoking wonder and admiration. The figure in the center of the Monas hieroglyphica title page is Dee's sign for the monad, essentially the common alchemical and astrological sign for Mercury, to which has been added the upper half of the common sign of the first division, Aries. The symbol was used for a bookmark by John Winthrop, the '17th century governor of Connecticut, who owned—and used—a very large alchemical library.

What Dee called "thaumaturgke"—in shocked amazement at the devices he himself contrived—is rooted in the *Pneumatics* of Hero of Alexandria, which is used by Porta in the 19th book of the 1589 Naples edition *of Magiae Naturalis* to illustrate the devices possible to the natural magic of air, water, and steam. In the same year Hero appeared in the engagingly entitled Italian translation *Gli Artifitiosi et Cvriosi Moti Spiritale* of Giovanni Aleotti. surveyor-engineer for the city of Ferrara, architect of the Teatro Farnese at Padua. The 1592 Italian translation by Alessandro Giorgi of the Urbino court, who scolds Aleotti for his errors in philology, is in the John Davis Batchelder Collection of "characteristic expressions of human activities." The general collections of the Rare Book Division hold a copy of the 1575 Latin translation by Commandino, translator and mathematician at the same court, which is repeated in the 1680 Amsterdam printing in the McManus-Young Collection, which also holds the 1647 Bolognese reprinting of Aleotti. The coupling of Hero and Ramelll (the 1588 and 1620 editions of *Le Diverse et Artificiose Machine* are in the Rosenwald Collection) will yield the automatons that are the principal stock-in-trade of the early 19th-century magician. Hero's work has been described as an example of the Greek fascination with the Pygmalion theme; might not the 18th- and 19th-century pleasure in the automatons be an extension of the popular admiration for the mechanics of the Newtonian world? The literature of secrets previously alluded to, while often associated with those cheats for which the craftsman is termed crafty, is part of natural magic insofar as it seeks to adapt or alter nature by natural methods. The most famous book in this literature is the *Secretes of Alexis Piemont*, attributed to Ruscelli; one of the Library's seven 16th-century copies of this Renaissance bestseller is in the Katherine BittingCollection on gastronomy. The adaptation of this literature to the uses of illusion can be illustrated by John Bate's *Mysteryes of Nature and Art* (1631, 635, 1654), in the Rosenwald Collection because Bate thinks the illustrated book one of the mysteries of art. A French example is Lemery's effort at science popularization called *Recueil des Curiosities Rares & Nouvelles*, of which appear in both the Bitting and Elizabeth Pennell gastronomical collections.

In the tradition of the literature of secrets, although its author is too versatile even by Renaissance standards to be subsumed in only one tradition, is the *De subtilate* in which Girolamo Cardano expounds on the wonders of the natural world. In his bibliography of the literature of secrets, John Ferguson[1] grew enthusiastic over the Glasgow University copy of the 1554 Latin edition as a fine example of what the book arts of the 16th century could do with a book meant for ordinary circulation. The reader in the Rare Book Room can share his pleasure. (The Library's copy even retains both clasps.) The title of the French edition (1556) makes manifest Cardano's place in natural magic: *De la Subtilite, & Subtiles Inuentions, Ensembles les Causes Occultes, & Raisons d'icelles.* Trevor Hall[2] points out that as late as 1715 Thomas Hill's Legerdemain carried the phrase "As Cardano saith" in its trick descriptions. The 16th book of *De Subtilitate* is given over to arithmetic. The materials on mathematics in the facsimile edition of Cardano'; omnia opera now under way amply evidence that Cardano was working on probability theory a hundred years before Pascal. Goethe called Cardano one of those men with whom posterity will never be finished.

"The Seven Liberal Sciences"

No doubt but magicke may doe much in this,
For be that reades but Mathematicke rules,
Shall finde conclusions that availe to worke

Wonders that passe the common sense of men.

Robert Greene. *The Honorable Historie of Frier Bacon, and Frier Bongay* (1594).

Agrippa said that "the proportion of numbers" can "draw the soul upwards" so that mathematics transcends reality. Cardano knew that mathematics also underlies reality since it is the arch-synthesizer of useful knowledge. The magician, whose work requires that his left hand know precisely what his right hand is doing, early saw in mathematics a good source for his repertoire. In the section on the art of juggling in *The Discovery of Witchcraft,* Scot comments that. "there are likewise diverge feats aythmeticall geometricall," adding "for them read Gemn Frisius." The reader in the Rare Book Room can find Gemma Frisius in the editions of the *Aritmeticae Practicae Methodus Facilis* published in1556, 1557, and 1558 in Lyons, Pans, and Lepzeig respectively.
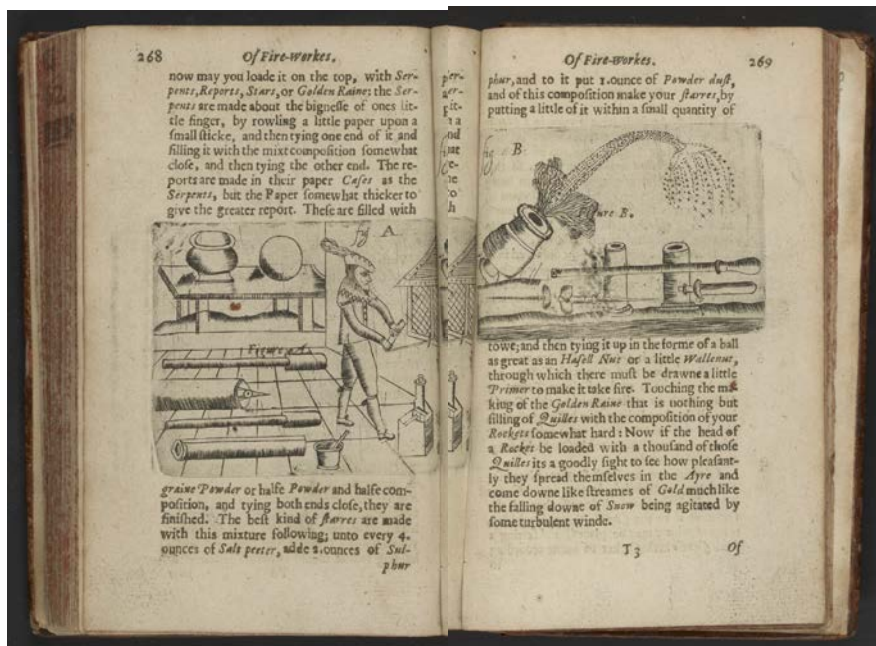

The making of "golden rain." From Mathematicall Recreations.

The first to occupy himself directly with what is now called recreational mathematics-the *Problemes Plaisans et Dilectables qu. se Font Parles Nombres,* to repeat the title of his 1612 publication-was Bachet de Meziriac, member of the Academie francaise, student of Ovid, Aesop, and Greek arithmetic. Twelve years later the largely borrowed *Recreacion Mathematique* appeared. Hitherto attributed to the Jesuit Jean Leurechon the book is a double bibliographic puzzle, first, because of original title page attribution of authorship to Henry van Etten; second because of the unidentified contribution to the English translation by William Oughtred, inventor of the straight logarithmetic slide rule. The revision of the Pollard and Redgrave *Short Title Catalogue* now under way will incorporate Trevor Hall's findings on this problem. The Library holds the second French edition 1629), two Dutch editions(1671-72, 1673) and three English editions (1633, 1653, 1674) of what will be called Van Etten. The kind of elementary mindreading taught by this book can be sampled in the section titled "Many cards being offered to sundry persons, to find out which of these cards any one thinketh upon." The student of technology will find pleasure in the curious little illustrations scattered throughout Van Etten's text to explain devices like the magic flask which the conjuror uses to pour liquids of three different colors.

The German representative of this literature of intellectual diversion is the potpourri of puzzles and tricks in physics and mathematics called by Daniel Schwenter his *Deliciae Physico-mathematicae*. The Houdini copy of Schwenter is the three-volume edition, of which the last volume published in 1692, is noteworthy because it concludes with a "Register der scribenten" which is, in effect, a bibliography of sources. Primacy in recreational mathematics returned to the land of Descartes with the publication by Jacques Ozanam (1640-1717), member of the Institut royal, of his *Recreations Matherruitiques et Physiques.* The preface mentions Bachet but not Van Etten, certainly through denigration rather than ignorance. Ozanam describes himself as a gentlemen's tutor in mathematics in peace and a writer on mathematics in times of war. In Louis XIVs dreary dynastic wars, Ozanam's bibliography grew too long for repetition here. Ozanam's fourth volume in the second edition is the classic in this literature. It carries the momentous subtitle *Avec I'explication des tours de gibeciere, de gobelets, & autres recreatifs & divertissans*.

Turning pages in Ozanam, one notes in the section on arithmetic a problem that legend says was posed by Alcuin at Charlemagne's court: how to transport a wolf, a goat, and a cabbage to the other side of a river, one by one, without ever leaving on the same side "the possible edible with the probable eater." The section on optics describes the properties of plane, concave, and convex mirrors to teach, for example, how to shoot from over the shoulder. (Did Buffalo Bill read Ozanam?) The sleights with cups and balls and the tricks with cards, cords, and knots are designated as "tricks of skill" or "amusing tricks."

For the historian of science the London editions are the most interesting of the Library's holdings of Ozanam (London, 1708, 1756, 1803, 1814, 1844; Dublin, 1765; Paris, 1735-41, 1750, 1778, 1790). The editor-reviser of the McManus-Young 1803 London edition was Dr. Charles Hutton of the Royal Society and the text of Ozanam he used had been edited by Jacques Montucla of the Institut, so that this edition represents the work of three mathematicians, each eminent in his own right, Montucla asserts that he edited Ozanam mathematically, that is, by addition, subtraction, and correction. The last English edition was edited and revised by the astronomer Edward Riddle.
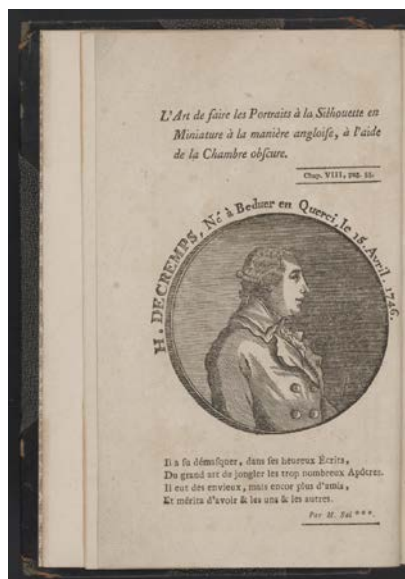
This portrait of Henri Decremps prefaces Codicile de Jérome Sharp, Professeur de Physique Amusante, 1791 edition.

It is not certain that it is Edme Gilles Guyot the balloonist who is the author of the *Nouvelles Recreations Physiques et Mathematiques* of 1769. The tide is an implicit acknowledgment of Ozanam's priority, but Guyot added new material on gases, electricity, and magnetism "and the amusement and agreable astonishment that can be derived from them." In comparison with Ozanam, Guyot's explanations seem simple and he does provide the magician with some useful auxiliary apparatus. The first four volumes of Houdini's set of the *[Neue physikalische und mathematischc Belustigungen](#)* published in Augsburg in 1772, which made magic a la mode in Germany, are a direct translation of Guyot.

Ozanam and Guyot continued to be read, but the author most often utilized by the early 19th-century stage magician was Henri Decremps (1746-1826), who not only presented individual tricks but arranged them in complete patterns of presentation. Decremps' *[La Magie Blanche Devoilee](#)* was published in Paris in 1784, that is, precisely 200 years after Scot's *[The Discoverie of Witchcraft](#)*. Here Decremps satirizes Pinetti in a character called Pilferer, who presents himself as a graduate of 32 universities. For Pilferer, squaring the circle and perpetual motion would be child's play, he says, if he were not busy in performing his magic routines for the natives of the Cape of Good Hope. The volume begins with the tricks sketched by Pinetti's *[Physical Amusements](#)* (London, 1784; Paris, 1785), in which Decremps could find neither amusement nor physics, and goes on to the then popular divining rod and the automatons, particularly the chess-player known to Americans because of its association with Edgar Allan Poe.
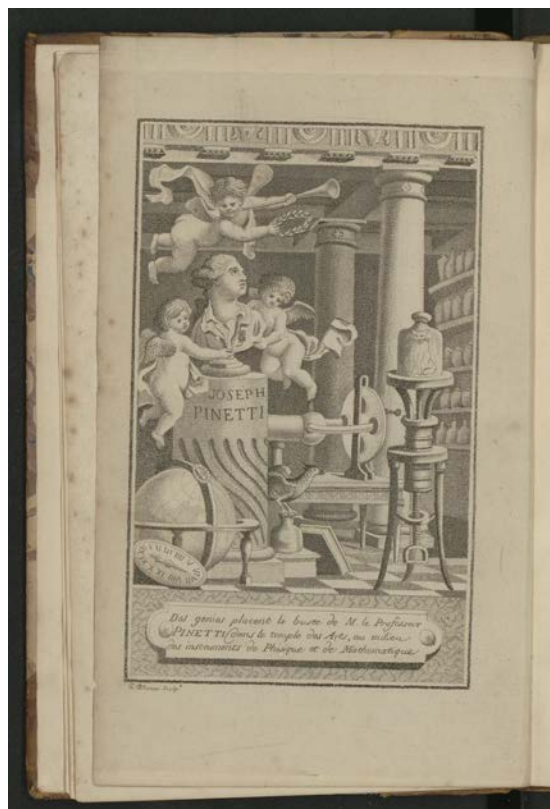
*Frontispiece from Pinetti's [Physical Amusements and Diverting Experiments](#).*In the English edition, 1784, only two angels are required to bring Pinetti's bust to its resting place. Of the 33 very simple illusions presented, 32 have ben identified in Ozanam. The remaining trick, pulling a shirt off a man's back, can be found in Daniel Schwenter's Decliciae Physico-mathematicae.

In Israfel (New York: Doran, 1926) 1:403, Hervey Allen comments that Poe's essay in the Southern Literary Messenger of April 1836 exposing Maelze's "Automaton Chess-Player" marked Poe's emergence "as the unerring, abstract reasoner, and foreshadowed the method he followed later in his detective stories such as Murders in the Rue Morgue, a method which has been embalmed in the triumphs of Sherlock Holmes.'"
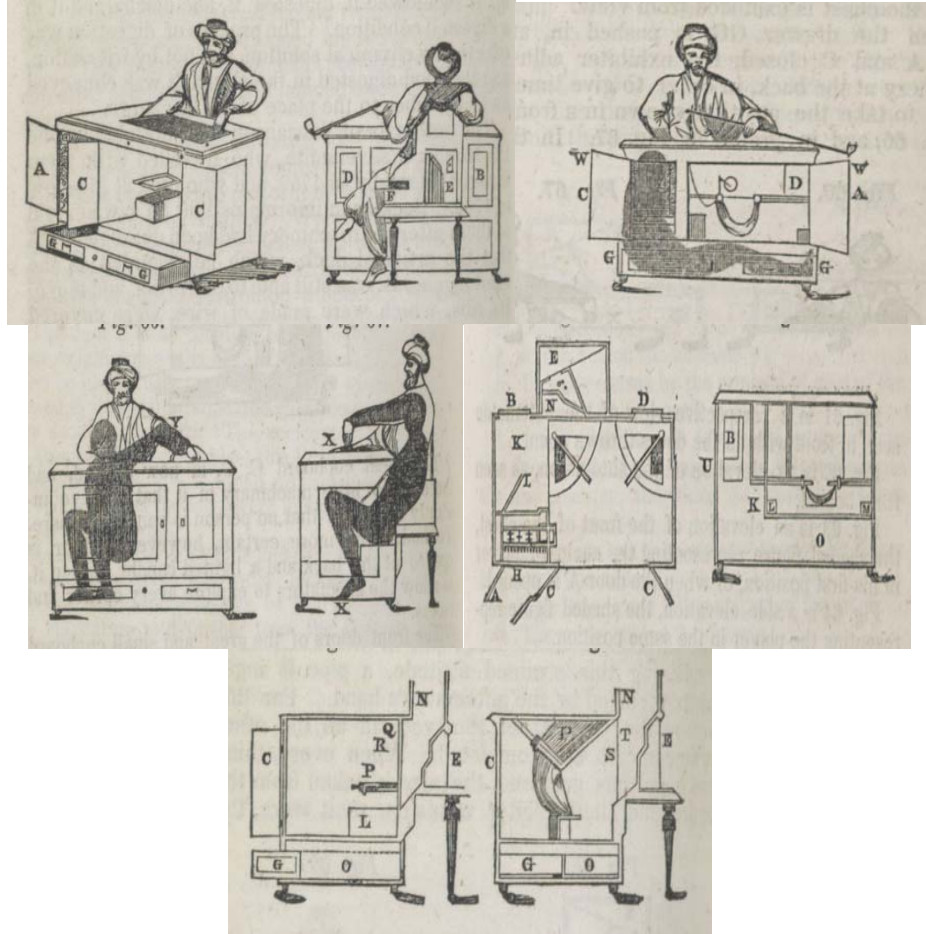
The illustrations explaining the workings of the Automaton Chess-Player are from the first French edition (Paris: *Librairie encyclopedique de Roret*, 1839] of Brewster's *Letters on Natural Magic*. Opponents of the Automaton Chess-Player included Frederick II, George III, Napoleon, Benjamin Franklin and Maria Theresa. Gallantly, the automaton lost only to his female opponents. The showman Maelzel is remembered for his invention of the metronome, the "momma" and "poppa" doll, and the ear trumpets used by Beethoven. The Chess-Player was destroyed by fire at the Chinese Museum in Philadelphia in 1854.

The Supplement of the next year examines Pinetti's newest repertoire. The two editions of the set of Decremps' writings called *La Magie Blanche Divoilee* (1789-91; 1791-93) add to the first volume and to the *Supplement a Testament de Jerome Sharp*, which is almost entirely conjuring, and the *Codicile de Jerome Sharp, Professeur de Physique Amusante* which is almost entirely the tricks of physics. *Les Petites Adventures de Jerome Sharp*, which again is about physics, might very well have been intended as a fifth volume in the set but appeared independently (1790, 1793).

The 1788 curtailed German translation of Decremps' *Testament* announces itself only as A New Contribution to Natural Magic (*Neuer Beytrag zur nat Urlichen Magie*). The English short version of Decremps' first volume was published in 1785, 1788, and 1790 under the title *The Conjuror Unmasked*. The editor-reviser was Thomas Denton, who used his knowledge of the new chemistry acquired in such reading to debase His Majesty's coinage, for which he received the services of His Majesty's hangman. Philip Astley's *Natural Magic* (1785) bear an all too constant unacknowledged resemblance to Decremps' first volume. But much can be forgiven Astley because he founded a whole new style of entertainment by exhibiting "feats of activity on horseback' in a turf circle at Lambeth. Astley's amphitheatre not the Roman sport spectacle, is the origin of the modern circus, better known as THE BIG SHOW.
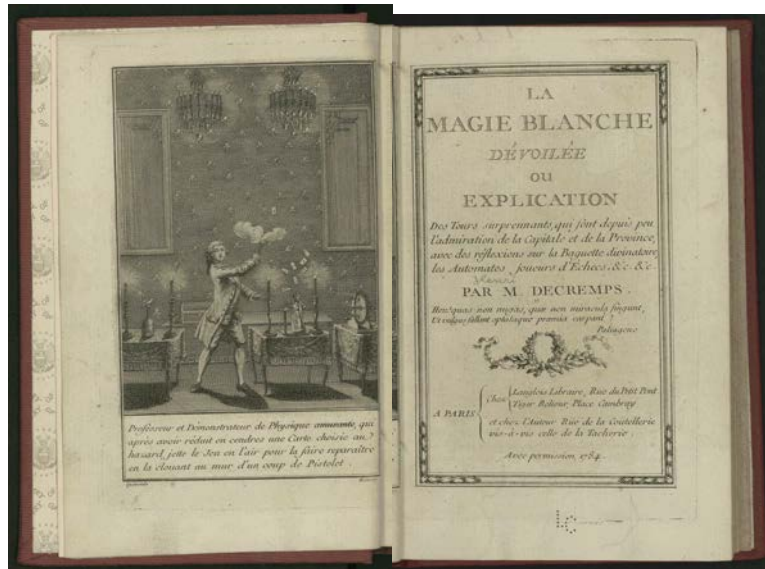
Although apparently without formal education, Thomas Denton was able to make speaking and writing automations. With money from exhibiting them he opened a bookshop in Holburn, where he also made mathematical instrument and did silverplating. It was this activity that led him to counterfeiting. A report in the European Magazine (July 1, 1789) depicts him as meeting the hangman without repenting, "Continuously laughing and nodding to some of the spectators, which he did even after the cap was down over his eyes."

The 1792 *Dictionnaire Encyclopedique Desamusements des Sciences Mathematiques el Physiques* *(subtitled "of curious processes in the arts, amusing and subtle tricks of white magic, and the ingenious and varied discoveries of industry")* is attributed to Jacques Lacombe, whose *Abrege chronologique* (1765) is one of the books owned by Thomas Jefferson. Robert Houdin's *Memoires* tells the story that as a youth he was mistakenly given this work when he thought to purchase a treatise on clockmaking. Examining the table of contents of his purchase that evening in his room he was startled to read. "How to do card tricks; how to read someone's thoughts; how to cut off the head of a pigeon and restore it to life." He read until his candle buried down, then went out on the street to read by the light of the gas lamps. The incident is a turning point in the history of theater magic. The Houdini copy of the *Dictionnaire* carries a note in his hand that it was purchased from a Belgian magician who insisted that it was the historic Robert-Houdin association copy.

The only English writer to whom we shall refer is William Hooper. His immensely popular *Rational Recreations* is almost unique in a literature not notable for giving sources, for in his prefatory statement he says: "The author has selected the principal experiments from the writers on recreative philosophy of the last and present centuries; from Baptista Porta to Ozanam and Guyot." Houdini's copy of the first volume of the 1783 edition of Hooper is mute testimony to his concern for his books. Pages 155 'through 158, which deal with coding, were wanting. Houdini copied them from somewhere, and when the job was done signed each page. The date was December 18, 1903; the place, Blackwell, England.

Perusal of Houdini's extensive German collection leads to the conclusion that the German natural magic of the 18th century must have been of particular interest to him. First is the *Naturliche Zauberbuch* (Houdini owned the 1718 and 1740 editions), begun as a translation from the Dutch of the "admirable" (Houdini's adjective) Simon Witgeest but so expanded and embellished as to be almost a new work. An early title that will surprise the reader expecting magic rather than the history of heresy is the 1729

edition of Gottfried Arnold's *Unpartheyischc Kirchen-und-Ketzer-Historie*. Goethe scholarship (Goethe has a paragraph on Arnold in Dichtung und Wahrkeit says that his reading of Arnold in this edition was one of the incidents that turned Goethe to the study of magic. Hauber's *Bibhliotheca, Acta et Scripta Magica* (Lemgo, 1738-45) collects reports of magical feats which Hauber explains as illusions or natural phenomena. His comments on travelers' tales, like those of Melton and Tavenier on Indian magic or of Nieuhof on Chinese sleight of hand, seem particularly perceptive. *The Onomatologia Cvriosa Artificiosa et Magica* of 1756 and 1762 is baroque in binding and print but Renaissance in text. The Augsburg translation of Guyot, which brought early modem magic to Germany in 1772, has already been mentioned. Seven years later the Leipzig University Professor Christlieb Funke argued his thesis that magic had never been anything but experimental physics by executing a few tricks for his academic audience. Houdini owned the 1783 and 1806 editions of Funke's *Natiirliche Magie*. Funke's publisher was Friedrich Nicolai, associate of Lessing, editor and author himself, excoriated by German romanticism as a simplistic rationalist. The growth of the monumental *Unterricht in der Natiirlichen Magie*, edited—or, rather, accumulated—by J. C. Wiegleb and G. E. Rosenthal out of the little volume of that name by J. C. Martius, is an example of Nicolai's use of publishing in the interests of ideology. The 1719 edition of Martius (which Houdini owned only in the Scheible reprint) defended Agrippa and touched politely upon the cabala. When Nicolai decided to re print Martius, he found two editors who saw their function as "to please the lovers of natural magic without doing so at the cost of sound human understanding." What began as a simple reprint grew between 1779 and 1805 into the 20 volumes of a jackdaw accumulation of everything in science possibly relevant to magic.

In the lower half of Weisenhahn's engraving. Magic's triumphal chariot is drawn by Ignorance, Deceit, and Stupidity. The magic lantern in her left hand throws it, false light upon the world. In her right hand is the magic wand she uses to invoke the night horrors who follow her. The "Genius of the World" is shown in the upper half. The torch in his left hand illuminates a small part of the Earth, while he lights the other torch from the Sun, in which a representation of the Deity can be seen. With his right foot he pushes back the dark cloud that prevents the Sun's light from reaching the Earth. The title vignette is in the form of a symbol unearthed in Ethiopia in 1556. The inscription reads Lika Zarabtalam, which is, translated, "creator of the World.

Other academicians joined what seems to have been a concerted rationalist effort to explain away the mysteries of magic by means of the new science. J. S. Halle, professor at the Cadet Corps School in Berlin, published two editions of the four-volume *Magie* (1783-86, 1784-87) and followed them with the 12 volumes of *Neufortgesetzte Magie* (1788-1806).Halle proclaims his intention as being to demonstrate that "there is no magic other than the natural, which uses the forces of nature that are not known to everybody to produce wonders," while entertaining the reader "with the most useful and pleasant tricks." Houdini sought out the many editions of the *Physikalische Jugendfreund*,*Neue Tausendkumtler*,*Neuer Wunderschauplatz,* and *Wunder der Uechanik* of J. H. Poppe, professor of technology at Tuibingen. The last title is a survey of automatons and is not related to the massive *Encyclopedie des Maschineniwesens* that is Poppe's professional magnum opus. Another professor of technology, Beckmann of Gottingen, wrote a famous history of inventions that includes a similar survey of automatons. Surprisingly, Houdini owned Beckmann only in the English translation. Somewhat apart from the academicians is the Numberg clockmaker Johann Gutle, whom Houdini describes as "the well-known delver after the secrets of natural magic." Most interesting when Gutle talks as a technician, the Gutle books for "*young and old wizards"* can also be said to represent a serious effort to write magic for the young. This hurried enumeration does not do justice to these books. They are certainly not science, but perhaps they have a place in the history of the popularization of science. Their authors show a sometimes astonishing ability to exploit the latest in science for the purposes of magic. The exposition is sufficient but simple and the reader's head is kept above—if only just—the flood of detail. Their popularity is proof that they saw a popular want and satisfied it.

The academic rationalists had a strange bedfellow in Karl Eckhartshausen, a Bavarian government official who found diversion from his efforts to pierce the arcana of Christian theosophy in learning sleights of hand. Like the rationalists, Eckhartshausen considered all magic either natural phenomena or illusions. He describes a mouse that counts or a pen that writes by itself; he tells the reader how to be invisible; but always he hurries to add that all this is illusion. The first of the four volumes assembled as Eckhartshausen's *Aufschlusse zur Magie* in the Houdini Collection is actually a 1791 reprint of the 1788 publication. Comparison with the McManus-Young copy indicates that the difference lies only in the words "zweyte Auflage" on the title page. The second volume, which has five engravings, despite the title-page announcement of only two, appeared in 1790. These two volumes are a mix of magic and metaphysics. The third volume (1791) is entirely magic (physics, magnetism, and recreational mathematics) and the fourth (1792) entirely theosophy.

The publishing history of Eckhartshausen's *Verschiedenes zum Unterricht und zur Unterhaltung fur Liebhaber der Gauckeltasche* of 1791 is more complex. The second "improved" edition ' of 1793 is a curtailed copy of the first: the improvement consisted solely in reducing the original 345 pages to 296, However, two years before the "improved" edition, the Verschiedenes had already reappeared in its entirety, except for the chapters on ventriloquism and somnambulism. Houdini owned the second edition (1792) of this version, which is styled *Des Herrn Hofrath von Eckhartshausen Selbst Approbirter Praktischer Taschenspieler*. It is this text which appears in 1827 as the "third edition" of *Die Gaukeltasche.* Search reveals no recorded first or second edition of this last title. Ought we to understood that *Die Gaukeltasche* is the third incarnation of the Verschiedenes? However, there can be no confusion about the lineage of the *Neues Zauberkabinet*, which appeared in 1835. This is *Die Gaukeltasche* all over again: the enterprising publisher changed only the first two words of the title. Karl Eckhartshausen is certain of immortality, although not for anything in the Library's magic collections. Historians say that Alexander I of Russia sought Juliana de Krudener's guidance in understanding

Eckhartshausen's *Cloud Over the Sanctuary*, which he read in Labzin's Russian translation (1804) Alexander's subsequent absorption in theosophy explains the grumbling declaration of Vasllii Denisov in Tolstoi's *War and Peace* that success at court depended on having read Eckhartshausen. The Rare Book Division copy of the translation in which Alexander read Eckhartshausen was part of the great collection purchased from the Siberian merchant Gennadli Yudin in 1907. Mention in War and Peace is surely a monumentum aere perennius.

This frontispiece from *the New Conjurer's Magazine, and Magical Magazine* (1806?) and clearly dated 1803 also appears as the frontispiece for *The Conjuror's Repository*, which has the date 1795 penciled on the title page-and is that given in the British Museum catalog. Trevor Hall suggests a later date on the basis of an advertisement by the publisher. But 1803 seems more likely considering the date of the engraving as well as a textual reference to Mutton's edition of *Ozanam*, which appeared in 1803. In the McManus-Young Collection is a variant of *The Conjuror's Repository* printed by another firm for the same publisher.

The Comus of Carlo Cosani (Leipzig, 1839) begins with a definition of natural magic that makes clear the effects of this literature of the "liberal sciences." "Natural magic," writes Cosani, "includes those artistic tricks of physics, chemistry, mechanics, and so-called legerdemain which arouse wonder and astonishment. These tricks are based partly on the skillful use of certain natural forces like electricity and magnetism, partly on mechanical devices, and partly on pleasant, harmless illusion and the magician's (dexterity and quickness." Remarkably, as he became a kind of technician, Decremps' "professor of amusing physics" retained and enhanced the color and fantasy of the natural magician. The period of the fruition of the "liberal sciences" is Elizabethan age of conjuring, a period of personalities impossible to depict in black and white or in one plane only.

The history of conjuring becomes the "lengthened shadow" of striking figures of the heroic age like those listed on the title page of the *Conjuror's Repository*. From this list we can select one international wanderer, Katterfelto, the German in England, and add two others: Philadelphius Philadelpliia (born Jacob Meyer), the American in Europe, and William Pinchbeck, the Englishman in America. Katterfelto

was the first to style himself "Doctor" and "Colonel" and probably, the first to use phosphorus and do the catching-a-bullet-in-the-teeth routine. Houdini thought Katterfelto the greatest of the bombastic conjurors and reprinted one of the famous Katterfelto posters beginning: "Great Wonders! Wonders! Wonders! And Wonders!" William Cowper's *The Task* remembers these posters in describing Katterfelto: "With his hair on end at his own wonders/Wondering for his bread." The "new, wide variety of experiments" announced in the posters touches all known branches of the sciences and two, the "proetic" and the "blencical," that seem to have been personal to Katterfelto.

The first American conjuror, Philadelphius Philadelphia, apparently practiced his art only in Europe and the Levant. Philadelphia's posters proclaimed him an "artist in mathematics"; his more lucrative unadvertised activity seems to have been the raising of ghosts by means of the magic lantern.

In Germany he suffered two great defeats. Frederick II of Prussia rejected Philadelphia's offer of his services with a warning that the air of Berlin was bad for the health of magicians. The great physicist and maker of aphorisms, Lichtenberg, laughed Philadelphia out of Gottingen with a hoax worthy of Dean Swift. Before Philadelphia's arrival Lichtenberg had the walls of Gottingen plastered with Philadelphia-style placards which began: "We herewith inform all lovers of supernatural physics that Philadelphius Philadelphia ... already mentioned by Cardane as the Envied of Heaven and Hell, arrived here some days ago by ordinary mail though he was able to come through the air. He is the same into the air until he man who in 1482 threw a ball of cord into the clouds . . . over Venice . . . and climbed up disappeared." Philadelphia beat a quiet retreat. J. H. Poppe was the son of Lichtenberg's instrument-maker and frequently attacked Philadelphia by name in his writings. There seems to be no contemporary English-language publication associated with Philadelphia. Houdini owned two copies of the anonymous *Pinetti, Philadelphia und Enslin* of 1819.

The Englishman William Pinchbeck is known only from his [Witchcraft](#), which may have been his "throwaways," the little books which the magician's assistant sells at the performance. The technical interest of the Expositor is limited to the revelation that Pinchbeck trained the "Learned Pig," by gifts of white bread and apples, to pick up a card on his signal—a sniffing of the nose.
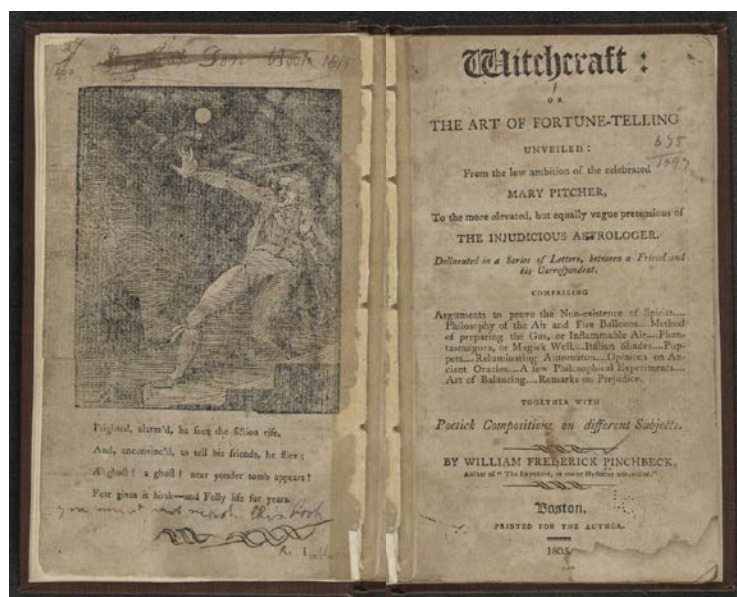
The verse accompanying the frontispiece to Witchcraft is a fair sample of Pinchbeck's "Poetick Compositions on different subjects.

The texts may seem thin and bloodless, but these are the first and second books on conjuring written in America. The first such book published in America is the reprint of the 11th London edition of Henry Dean issued at Philadelphia in 1795, of which the only known copies are owned by the American Antiquarian Society and the Players Club of New York.

In fact, almost all of the 35 conjuring books published in this country before 1850 are reprints of English originals. Representative is the *[Whole Art of Legerdemain](#)* published by Nickerson of Baltimore in 1830 which Dr. Young used for the only book illustration in his *Hobby Magic* (New York: Trilon Press, 1950). Another example of this item in the McManus-Young Collection is an apparent second printing by this publisher, which is not recorded in the standard bibliographies. The tone and texture of the few items that can be called native to America hardly represent an advance in vitality over Pinchbeck. Witness   the *[Ventriloquism Explained](#)* (1834) offered by an anonymous Amherst undergraduate "in the hope and prayer" that "these pages may exert some feeble influence, in compelling wandering jugglers to live by honest labor, rather than by deception." Similarly, the expectations raised by the title of A. G. Engstrom's *[The Humorous Magician Unmasked](#)* (Philadelphia, 1836) are dashed on reading his hope that not-withstanding the title of his work, it may excite sufficient interest with the ladies to find a 'local habitation'- among the usual variety of fancy articles' which rests upon the centre table.”

The literature we have sketched suggests the perhaps paradoxical conclusion that the conjuror became an artist only when he took over the "seven liberal sciences." Certainly the transition from the juggler working with cups and balls for the little groups depicted in the Bosch painting to Thurston's or Keller's illusion spectacles would not otherwise have been possible. Pinetti, who styled himself "Professor of Mathematics and Natural Philosophy," significantly was the innovator who made conjuring a theater art. Before the association with the "liberal sciences," conjuring was a trade practiced by nameless artisans; after, it became an expression of personality and thus an art. The reason may be that the sciences of the magician are sciences only metaphorically, in the way that the truth of poetry is a metaphorical one. What Sir Philip Sidney said about the poet in the *Apologie for Poetrie* can be applied to the magician; "He goeth hand in hand with Nature, not enclosed within the narrow warrant of her gifts but freely ranging within the zodiac of his own wit." Houdini's ranging within the zodiac of his wit has so stirred the popular imagination that he, too has become a subject for mythologizing, like the magicians of the Renaissance.

'Bibliographical Notes on Histories of Inventions and Books of Secrets {London: Holland Press, 1959). ^ Old Conjuring Books (London: Duckworth, 1972). Hall's A Bibliography of Books on Conjuring in English From 1580 to 1850 (Minneapolis: C. W. Jones, 1957), Houdini's The Unmasking of Robert-Houdin (New York: Publishers Printing Co., 1908), and Raymond Toole-Stolt's Circus and Allied Arts; a World Bibliography, 1500-[1970] (Derby, England; Harper distributors, 1958-71) were also consulted in the preparation of this article.

NOTES

[i] In Thomas Hawkins, ed., The Origin of the English Drama, vol. 3 (Oxford, 1773), p. 294.
[ii] *De i miracoli et maravigliose effetti della nature prodotti, libri IIII* (Venice, 1534), p. 3.
[iii] *Opera omnia*, vol. 3 (London: Impensis R. Gosling, 1730), p. 257.