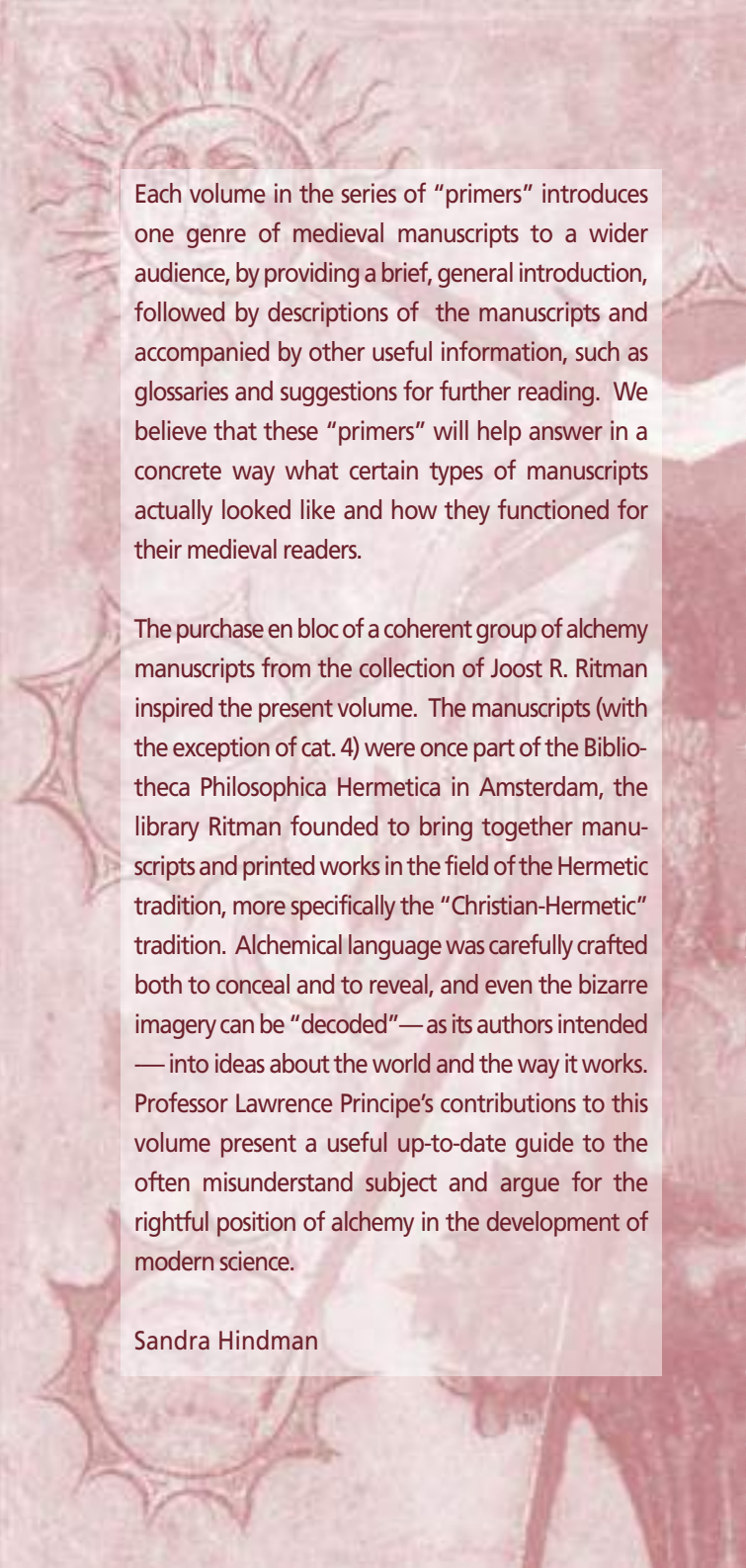




ALCHEMY

primer

2

The background features a faint, reddish-toned illustration. At the top, a sun with a human-like face and radiating rays is visible. Below it, a figure in a landscape is depicted, possibly engaged in an alchemical or scientific activity. The overall style is reminiscent of historical manuscript illuminations.

Each volume in the series of “primers” introduces one genre of medieval manuscripts to a wider audience, by providing a brief, general introduction, followed by descriptions of the manuscripts and accompanied by other useful information, such as glossaries and suggestions for further reading. We believe that these “primers” will help answer in a concrete way what certain types of manuscripts actually looked like and how they functioned for their medieval readers.

The purchase en bloc of a coherent group of alchemy manuscripts from the collection of Joost R. Ritman inspired the present volume. The manuscripts (with the exception of cat. 4) were once part of the Bibliotheca Philosophica Hermetica in Amsterdam, the library Ritman founded to bring together manuscripts and printed works in the field of the Hermetic tradition, more specifically the “Christian-Hermetic” tradition. Alchemical language was carefully crafted both to conceal and to reveal, and even the bizarre imagery can be “decoded”—as its authors intended—into ideas about the world and the way it works. Professor Lawrence Principe’s contributions to this volume present a useful up-to-date guide to the often misunderstood subject and argue for the rightful position of alchemy in the development of modern science.

Sandra Hindman

primer | 2

general editor Sandra Hindman

ALCHEMY

Lawrence M. Principe and Laura Light

a series published by *LES ENLUMINURES*

New York • Chicago • Paris

To Conceal *and* to Reveal: Alchemical Manuscripts and the Development of Modern Science

Alchemy and its practitioners have often suffered from a bad reputation. Since the eighteenth century, alchemy has been associated with fraudulent practices, occult hocus-pocus, or simply a deluded and greedy quest for making gold. Many historical accounts dismissed it as an obstacle to the emergence of “real” chemistry. Yet over the past thirty years or so, historians of science have paid fresh attention to the “Noble Art,” asking who the alchemists were, what they really did and thought, and how their work figured in broader intellectual and cultural contexts. As a result, alchemy is now enjoying an unprecedented scholarly revival; many old assumptions are being replaced with more accurate understandings.

Alchemy's origin lies in Greco-Roman Egypt of the second century A.D. In that Mediterranean crossroads, longstanding Egyptian metallurgical and craft traditions merged with Greek philosophical speculations about the nature of matter and its transformations. The early alchemists, like Zosimos of Panopolis (fl. 300 A.D.), combined practical know-how and observations with theoretical and philosophical frameworks to create a discipline that involved both head and hand, both theory and practice. Their goals were to learn and to control the manifold transformations of material substances, as witnessed both in the natural world and in their workshop furnaces. Their central motivation aimed at turning cheap, common substances into precious ones, most famously by finding the means of transmuting base metals like lead into gold and silver.

Eagerly embraced by the rising Islamic world of the eighth and ninth centuries, this Greco-Egyptian art blossomed under the keen observational, experimental, and philosophical labors of Arabic practitioners. When twelfth-century Europeans encountered Arabic learning they discovered *al-kimiya*, a subject hitherto unknown to them, and hastened to translate this new knowledge into Latin. Transplanted into Western Europe, alchemy surged again in sophistication and complexity, reaching its pinnacle in the sixteenth and seventeenth centuries.

Through all these transitions, a defining feature of alchemy remained its insistence on combining productive operations with attempts to understand the world, and having learned its secrets, to apply them towards practical ends. Accordingly, the Franciscan friar Roger Bacon (c.1214-1294) defined two parts of alchemy, one “theoretical [*speculativa*], which theorizes about all inanimate things and the entire generation of things from their elements,” and the other “operative and practical, which teaches how to make noble metals, pigments, and many other things better and in greater quantity than they are made by nature.” A range of productive processes thus appears in recipe collections, later to become “books of secrets,” for making various materials besides gold (cat. 1 and 2).

This medieval definition of alchemy sounds much like that of modern chemistry, and fittingly enough, for centuries of alchemical labor laid chemistry's foundations. Despite this continuity, alchemy differed from today's chemistry in two important respects. First, alchemists never lost sight of the Big Picture. As they sought the hidden workings of nature, they recognized in them God's creative hand. In their distillations, sublimations, and crystallizations, they saw meanings that extended far

beyond smoky laboratories, analogies to the greater workings of the universe, to the revealed mysteries of Christianity, and even to God's redemptive plan for a fallen world, in which the alchemists could actively participate through their efforts in purifying and improving material substances.

A **second distinction** lies in the obscurity of alchemical communication. Secrecy is virtually inseparable from alchemy. Already in the Greco-Egyptian period, alchemists had devised ways of speaking to hide the very information they claimed to transmit. They used "cover names" to conceal the identity of key ingredients, and called one substance by many different names and many different substances by a single name. This culture of secrecy had partly been inherited naturally from the craft traditions that sired alchemy, where keeping proprietary secrets was equivalent to maintaining one's livelihood. But the secrecy that accompanied alchemy from its origins intensified in the Middle Ages.

For a **brief period in the thirteenth century**, alchemy was tentatively embraced by the rigorous scholastic culture of the medieval university with its premium on clarity and precise language. Some writers endeavored to organize alchemy scholastically, such as Geber and Petrus Bonus (cat. 3), with mixed success. This flirtation was short-lived, for alchemy soon became controversial. Could alchemists really imitate nature and make gold? Would selling artificial gold be a kind of fraud, and coining it a kind of counterfeiting? Practical economic concerns led to laws forbidding transmutation. The subject lost its university foothold, and Dante, writing his *Divine Comedy* at just this time, put alchemists alongside forgers and counterfeiters in the eighth circle of Hell.

Despite such bad associations, alchemy's promise to turn the cheap into the precious kept the practice not only alive, but thriving. Legal strictures and moral ambiguity, however, forced alchemists to become more secretive in their writings and more defensive about the value of their knowledge and endeavors even to the point of asserting their sanctity, above that of ordinary knowledge. Alchemical texts were frequently written pseudonymously under the names of famous (and safely dead) figures — such as the highly significant fourteenth-century works attributed to the philosopher Ramon Llull (cat. 4-7) and the physician Arnald of Villanova (cat. 9). Alchemical texts increasingly embraced allegorical and metaphorical language to express their contents, and by the sixteenth century emblematic images had appeared — strange woodcuts, engravings, and minatures of bizarre creatures and weird events (cat. 10) purportedly containing arcane and privileged secrets.

Such secrecy enhanced both suspicion and admiration of alchemy. Much of the later dismissal of alchemy as foolish or meaningless arose from a hasty judgement that nothing solid lay beneath the secrecy. But recent scholarship shows that alchemical language was carefully crafted both to conceal *and* to reveal, and that even bizarre imagery can be "decoded" — as its authors intended — into processes or ideas about the world and the way it works. As a result, there is now fresh interest in reading alchemical texts with a more historical, patient, and penetrating gaze.

In this endeavor, manuscripts are especially important. While many subjects switched from manuscript to print relatively quickly and completely, alchemy did not. This is not to say that the number of printed alchemical books is small — far from it; thousands upon thousands were

printed in the sixteenth and seventeenth centuries. But the limited audience that scribal transmission made possible preserved an important role for manuscripts in alchemical contexts. Alchemical manuscripts also branched out from Latin into the vernaculars earlier than other branches of natural philosophy. Ps.-Lull's *Testamentum* (cat. 5) was written in Catalan, works by his follower Christopher of Paris appeared very early in Italian (cat. 8). *Die heilige Dreifaltigkeit* (cat. 10) was not only among the earliest alchemical texts in German, but among the first with outstanding pictorial imagery. Vernacular manuscripts have a special role to play in localizing ideas and practices.

Many important medieval alchemical texts existed for generations in manuscript only. When finally published in the sixteenth or seventeenth century, rarely was great care taken in locating what we today would consider the best witness of the original text; printers often published the version closest to hand (and threw away the manuscript once it had been "improved" by printing). Yet many surviving alchemical manuscripts bear witness to careful textual comparisons made with other versions. Practitioners knew that a missing or false word or phrase might make them lose a crucial clue to the author's meaning; hence, it was imperative to get the text *right*. Readers today should be even more interested in scribal alchemical texts. Like early readers, they too need to get as close as possible to the author's original words. Many important early alchemical texts still await modern critical editions. For this purpose, clear and early exemplars are necessary. Just as importantly, modern scholars want to know how texts evolved as later readers tried to understand or replicate the processes of earlier authors. These readers (and practitioners) intermediate between the original author and modern scholars frequently left behind their own

valuable insights, guesses, interpretations, and glosses scribbled in wide manuscript margins. Far from being blemishes on a supposedly pristine text, these additions sometimes clarify the original text, include alternate readings from now lost exemplars, and provide precious witnesses of how the document and the ideas it contains were actually used, how they evolved in different contexts and under different sets of eyes (esp. cat. 3, 5, 8, 9).

Our modern world relies at every moment upon science, technology, and their products. In order to understand this world, how it came about, and how it differs (for better and for worse) from that of our predecessors, it is necessary to understand the history of the development of scientific ideas and culture. Alchemy played an important role in this long history. With its aims of imitating and improving upon nature, its insistence on material production, and its joining of head and hand, alchemy established key foundations for the way moderns conceive of the power and potential of human beings to intervene in the natural world. Alchemists may never have made gold, but they did play an important role in creating our scientific and technological world.

Lawrence M. Principe

Drew Professor of the Humanities, The Johns Hopkins University, Department of the History of Science and Technology

The alchemical manuscripts presented in this volume (with the exception of cat. 4) come from the collection of the Dutch businessman Joost R. Ritman (b. 1941). They were once part of the *Bibliotheca Philosophica Hermetica*, the private library Ritman founded to bring together manuscripts and printed works in the field of the Hermetic tradition, more specifically the "Christian-Hermetic" tradition. [S.H.]

1

Recipes and Extracts on Alchemy, Medicine, Metal-Working, Cosmetics, Veterinary Science, Agriculture, Wine-making, and other subjects

In Latin, manuscript on paper

Northwestern Italy, c. 1425-1450 (probably before 22 December 1438)

The earliest surviving alchemical texts are recipes in the Stockholm and Leiden Papyri from the third century (possibly based on even earlier texts), that record c. 250 workshop recipes related to gold, silver, precious stones, and textile dyes. In the Middle Ages the tradition was continued. The *Mappae clavicula* (The Little Key to the World) is a famous example; dating from the ninth century, it includes recipes related to metalwork, mosaics, dyeing, pigments, and painting.

The contents of this collection, arranged in 520 numbered sections, many of which include multiple recipes, are interesting and varied, and include fairly extensive sections devoted to alchemical recipes, as well as a short dialogue between the author, who speaks in the first person, and "frater Aegidius" (Giles of Rome, c. 1243-1316) on the possibility of the transmutation of metals. There are numerous recipes related to metal working — always closely related to alchemy — as well as medical recipes (for humans and animals), household, cosmetic, and agricultural recipes; most (whether unique to this manuscript or not) are almost certainly still unpublished. Manuscripts with such diverse contents are the direct ancestor of the sixteenth-century printed "Books of Secrets." Despite the recent interest in these treatises, there appear to be no modern studies seriously investigating their medieval predecessors. This collection was designed from the outset to be used with its extensive alphabetical subject index. Its outstanding (unique?) contemporary binding with 437 decorative nails forming stars within circles on both covers adds to its interest.

[TM 696]

DESCRIPTION: ex-J.R. Ritman Collection, BPH 112; 101 folios, watermark dated 1428-1447, contemporary foliation, wanting outermost bifolium of first quire, and five leaves from quire eight, three of which were likely blank, copied in a small humanistic bookhand in 2 columns of 30 lines, numbered entries, f. 84 loose and mostly detached, worming and stains, else good condition, contemporary red leather binding, minor scuffing, thongs split at front and back, but solid. Dimensions, 210 x 150 mm.

LITERATURE: William Eamon, "How to Read a Book of Secrets," in Elaine Y. T. Leong and Alisha M. Rankin, eds., *Secrets and Knowledge in Medicine and Science, 1500-1800*, Farnham, Surrey, 2011; R. Halleux, "Recettes d'artisan, recettes d'alchimiste," in R. Jansen-Sieben, *Les 'artes mechanicae' en Europe médiévale*, Brussels, 1989.



reduced

Alchemical Miscellany including an extract from JOHANNES DE RUPESSISSA, *De confectionis veri lapidis*; RUDIANUS (?), *Practica artis alkimie*; *Opus magistri hospitalis* by HOSPITALINUS IEROSIMILITANUS corrected by RAINALDS (ARNALDUS) DE VILLA NOVA; extract from JOHN DASTIN (?), *Rosarius*; JOHANNES DE TESCHEN, Alchemical antiphon; numerous Alchemical procedures and recipes

In Latin and Italian, decorated manuscript on parchment with an alchemical illustration Northern Italy, c. 1450-75

A distinctive feature of alchemy was its aim to combine the practical with the theoretical. These two aspects of alchemy are well-illustrated in this manuscript. Alongside more than sixty alchemical recipes, are several more philosophical passages, including a short extract from *De confectione veri lapidis* ("On the Making of the True Philosopher's Stone") by Johannes Rupescissa (c. 1310-c. 1362), expressing his belief in alchemy to cure the ills of Christian society, and in particular, to aid the Church in the coming battle with the Antichrist. Notable among the recipes is one by Brother Robert, a Franciscan Friar, to improve memory and intellect, said to have been used by Popes Urban V (pope from 1362-1370) and John I (probably John XXII was intended, pope from 1316-1334).

This selection of texts and their organization deserve further study as an important reflection of the activities of a fifteenth-century alchemist. Its format suggests it was designed for easy consultation – small and quite narrow, it was well-protected by a stout binding of leather-covered wooden boards with metal fittings. It bears many signs of active use, and is especially soiled in the section containing practical recipes. Some leaves are palimpsest (discernible traces of an earlier fourteenth-century cursive gothic script in Latin on ff. 49v-52v, 60, 66, 67, 73v-74). [TM 691]

DESCRIPTION: ex-J. R. Ritman Collection, BPH 14; 89 folios, some leaves palimpsest, complete, written on the top line probably by two scribes in a good cursive humanistic script in 19-20 long lines, f. 41, FULL PAGE DRAWING in pen with colored wash of sublimation vessels and a furnace, many signs of use, contemporary leather binding, rebaked early, now loose and split, back board mostly detached. Dimensions, 145 x 81 mm.

LITERATURE: Leah DeVun, *Prophecy, Alchemy, and the End of Time: John of Rupescissa in the Late Middle Ages*, New York, 2009; William Jerome Wilson, "Catalogue of Latin and Vernacular Alchemical Manuscripts in the United States and Canada," *Osiris* 6 (1939), pp. 1-836, no. 3, pp. 30-39.



PETRUS BONUS, *Pretiosa margarita novella* (*The Precious New Pearl*)

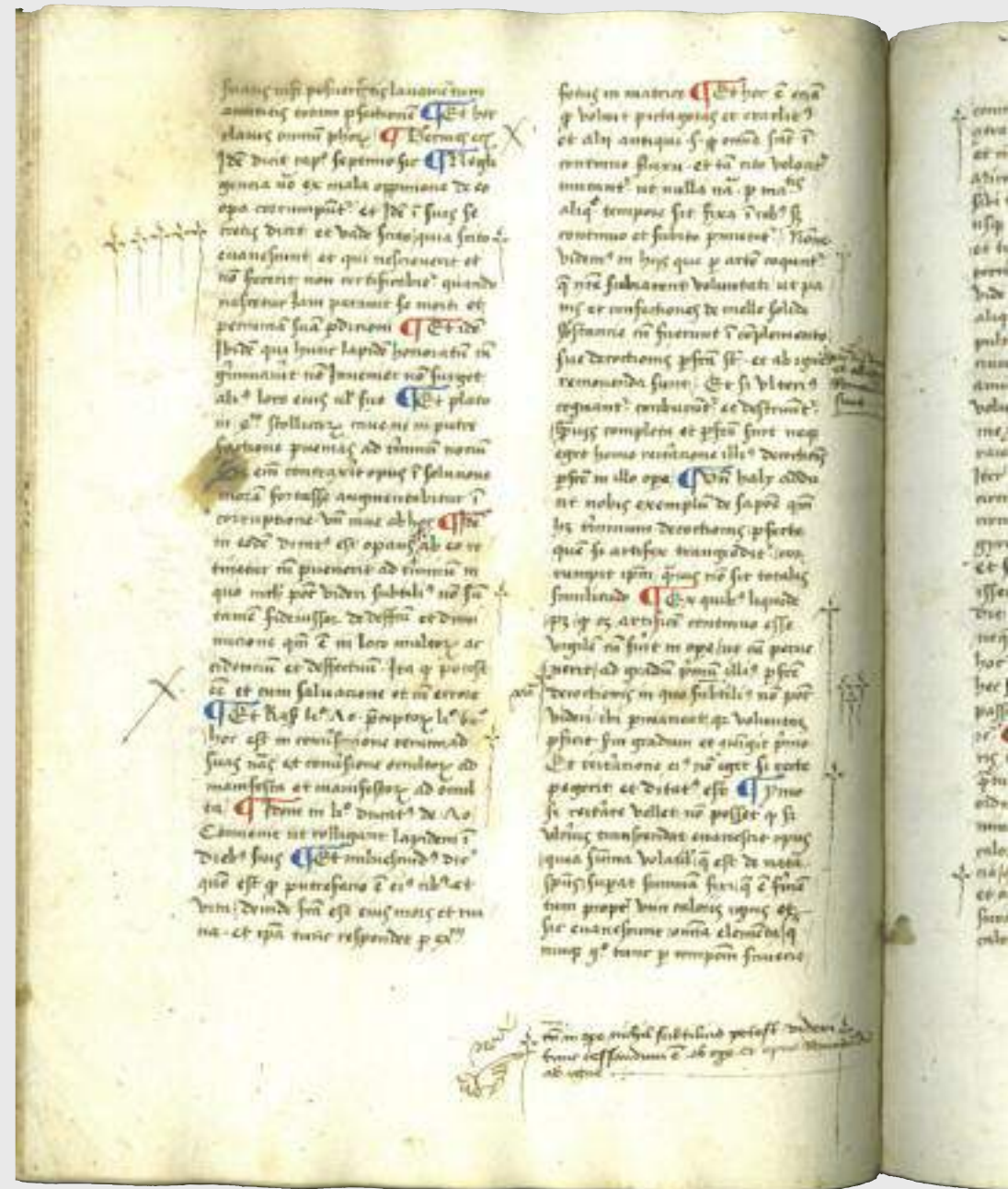
In Latin, decorated manuscript on paper
Spain (Catalonia), c. 1450-1480

Writing in the context of fourteenth-century skepticism (and even hostility) towards alchemy, the aim of the author of *The Precious New Pearl*, written in 1330 according to most manuscripts (this copy lists the date as 1338), is to provide a firm philosophical and theoretical basis for alchemy. Little is known about the author of this text, Petrus Bonus, who was a doctor of medicine from Ferrara. The alchemical ideas in this treatise are not new; however, it not only successfully places alchemy in the broader tradition of fourteenth-century philosophy and religion, it also elevates its status almost to that of a holy pursuit. Petrus argues that knowledge of alchemy allowed the pre-Christian philosophers to predict the virgin birth of Christ; moreover, that knowledge of alchemy (based in part on divine revelation) necessarily leads the adept to belief in the Trinity and in Christ.

This is one of only six known complete manuscripts of this text, which has not been published in a modern critical edition. It was a manuscript that was obviously read and used actively; lengthy sections of the text, which deserve study are copied in the margin, and added notes in at least two hands are valuable evidence of the reception of this text in the fifteenth century (one is especially vociferous, adding, "Nota, nota, nota, nota" on f. 68). Its Spanish provenance adds to its interest. [TM 541]

DESCRIPTION: ex-J. R. Ritman Collection, BPH 18; 92 folios, watermark dated 1449-1477, complete, written in a stylized cursive gothic bookhand in 2 columns of 38 lines, large decorated 3-line initial, f. 1 (smudged), trimmed with some loss of marginalia, holes on ff. 73, large hole (loss of text) and 24, some stains, 16th-century Spanish blind-tooled dark leather binding. Dimensions, 286 x 212 mm.

LITERATURE: Chiara Crisciani and Michela Pereira, *L'arte del sole e della luna: alchimia e filosofia nel medioevo*, Spoleto, 1996, pp. 203-217; Chiara Crisciani, "The Conception of Alchemy as Expressed in the *Pretiosa Margarita Novella* of Petrus Bonus of Ferrara," *Ambix* 20 (1973), pp. 165-81; Sebastiano Gentile and Carlos Gilly, *Marsilio Ficino e il ritorno di Ermete Trismegisto (Marsilio Ficino and the return of Hermes Trismegistus)*, Florence, 1999, no. 34, pp. 216-19.



4

RAMON LLULL, *Ars brevis*, and *Ars abbreviata praedicanda*, *versio latinus II*

In Latin, decorated manuscript on paper
Southern Netherlands, c. 1490-1550; and Germany, c. 1490-1520

This manuscript includes two texts by one of the most intriguing figures of the High Middle Ages, Ramon Llull (1232-1316). He came from a wealthy family on the island of Majorca, married, and had children; he renounced this life in 1263 when he experienced a conversion, thereafter devoting himself to Christ, writing, preaching, and leading missionary efforts to convert his Islamic neighbors. Llull explained his system of thought (his "Art") in many works over the course of his life; the most influential of these was the *Ars brevis*, written in Pisa in 1307/8. The second text on preaching, the *Ars abbreviata praedicandi* is a Latin translation of a work Llull wrote in Catalan. His theory of preaching, not surprisingly, was strikingly original, replacing authorities from scripture with a system of moral instruction that would be accepted by non-Christians, who did not accept the authority of the Bible.

Llull was a prolific writer, with interests including philosophy, theology, and apologetics. He was not, however, an alchemist, despite the numerous alchemical treatises that circulated as his. The Pseudo-Lullian Alchemical corpus is a large collection of as many as 143 texts, dating from the fourteenth and fifteenth centuries (three examples are included here, see cat. 5-7). Although Llull's reputation as an alchemist still lingers today, it is now well-accepted by modern scholars that none of these are authentic works by Llull. Many of these works however use Lullian language, as well as Llull's characteristic figures and charts, examples of which accompany the the *Ars Brevis* in this manuscript. [TM 426]

DESCRIPTION: 35 folios, watermarks dated 1484-1549, missing most of f. 22, and text before f. 24, written by two scribes, with different formats: ff. 1-23v, written below the ruled line in a small, pointed cursive script in 37-39 long lines, six tables and diagrams, ff. 24-35, written in an upright cursive gothic script in 38-34 long lines, overall in very good condition, some darkened leaves and stains, modern light brown morocco binding. Dimensions, 198 x 133 mm.

LITERATURE: Anthony Bonner, *The Art and Logic of Ramon Llull: A User's Guide*, Boston, 2007; Ramon Llull, *Raimundi Lulli opera Latina*, ed. F. Stegmüller, et al., Palma, 1959-67, and Turnhout, 1975- .



**PSEUDO-LULL, *Theorica testamentum* [Testamentum, book one];
Alchemical and Medical Recipes**

In Latin and English, manuscript on paper
England, after 1446-c. 1475

The *Testamentum* is the earliest and most important work in the Pseudo-Lullian Alchemical corpus, none of which are now considered authentic (cat. 4). Instead, the *Testamentum* was by an anonymous fourteenth-century Catalan scholar, now known as the “Magister Testamentum,” who probably studied medicine at Montpellier and was active in Catalonia, Southern France, and England. The lengthy colophon in Oxford, Corpus Christi College MS 244, which dates from 1455, explains it was written in London in 1332 and translated from Catalan into Latin in 1443. The colophon in our manuscript states simply that it was translated from Spanish (an interesting difference) into Latin in 1446. It was one of the first texts to develop the idea of the elixir, or the philosophers’ stone, as the agent of the general perfection of matter – able to “cure” the imperfections of base metals and thus turn them into gold, as well as to “cure” precious gems, and to maintain human health by curing disease, and thus prolonging life.

This is an early copy of the text that likely dates within twenty-five years of its translation from Catalan into Latin. It includes only the first book of the *Testamentum*, which is largely theoretical in content, but it also includes c. 50 practical, alchemical recipes in Latin and English. Although this is a formal manuscript, carefully copied with contemporary corrections, it also includes copious evidence of use, and annotations by later readers.

[TM 692]

DESCRIPTION: ex-J. R. Ritman Collection, BPH 16, 112 folios, unidentified watermark, early foliation, lacking one leaf at the end, written on the top line in a small, compressed secretary script in 32-28 long lines, edges repaired f. 1, some folios with text darkened (possibly treated by a reagent), many signs of use, modern vellum binding. Dimensions, 208 x 140 mm.

LITERATURE: Michela Pereira, *The Alchemical Corpus Attributed to Raymond Lull*, London, 1989 (online update, http://www.ramonlull.net/sw_studies/l_br/s_pseudo_0.htm); Michela Pereira and Barbara Spaggiari, eds., *Il “testamentum” alchemico attribuito a Raimondo Lullo: edizione del testo latino e catalano dal manoscritto Oxford, Corpus Christi College, 244*, Florence, 1999.



6

PSEUDO-LULL, *Codicillus*

In Latin, illustrated manuscript on paper
Northern Italy (or Germany?), 1472; Italy, c. 1450-1500, probably c. 1470-1500

The *Codicillus* (as in a codicil to a will, referring back to the *Testamentum*), is probably the most famous and certainly one of the one of most important of all the Pseudo-Lullian alchemical texts. It is closely connected to the earliest of these works, the *Testamentum* (cat. 5), also written by the “Magister Testamentum,” or produced by a student or close follower. The text discusses the relationship between the microcosm and macrocosm, the bond of love uniting the world, and the need for a *reformatio materiae* (a reformation of matter) that can be achieved by the true alchemist who receives illumination from God (themes also found in the *Testamentum*). The author cites the *Testamentum* as his own work, and in one passage mentions Arnald of Villanova as his teacher; he is not identified within the text as Lull.

This codex was assembled before the sixteenth century from two independent manuscripts. The first quire includes the end of the text (from chapter 82), together with a series of diagrams and charts; the remainder of the manuscript is from a different manuscript, probably later, with chapters 1-81. Noteworthy for its illustrations and full complement of tables and figures, it includes extensive annotations that call for further study, this manuscript may have been owned by Carlo Maria Buonaparte (1746-1785), father of the Emperor Napoleon. The text is extremely uncommon on the market, and there is only one recorded copy in the United States. [TM 693]

DESCRIPTION: ex-J. R. Ritman Collection, BPH 17;105 folios, unidentified watermarks, two parts of independent origin, part one beginning imperfectly, written in a cursive gothic bookhand in 32-30 long lines, NINE DRAWINGS OF ALCHEMICAL INSTRUMENTS, CHARTS AND FIGURES, part two, written in a cursive humanistic script in 24-20 long lines, modern brown leather binding. Dimensions, 158 x 109 mm. (part one); 164 x 110 mm. (part two).

LITERATURE: Ramon Llull, *Le codicille. Nouvellement traduit du latin par L. Bouyssou*, Paris, Le Cercle du livre, 1953; Michela Pereira, *The Alchemical Corpus Attributed to Raymond Lull*, London, 1989 (online update, http://www.ramonllull.net/sw_studies/l_br/s_pseudo_0.htm).



PSEUDO-LULL, *Liber de secretis naturae seu de quinta essentia* [including *Tractatus septem rotarum quarum sex sunt volubiles*, *Questiones arboris phylosophiae*, two versions of the *Tertia distinctio*, and *Disputatio monachi cum Raymundo*]

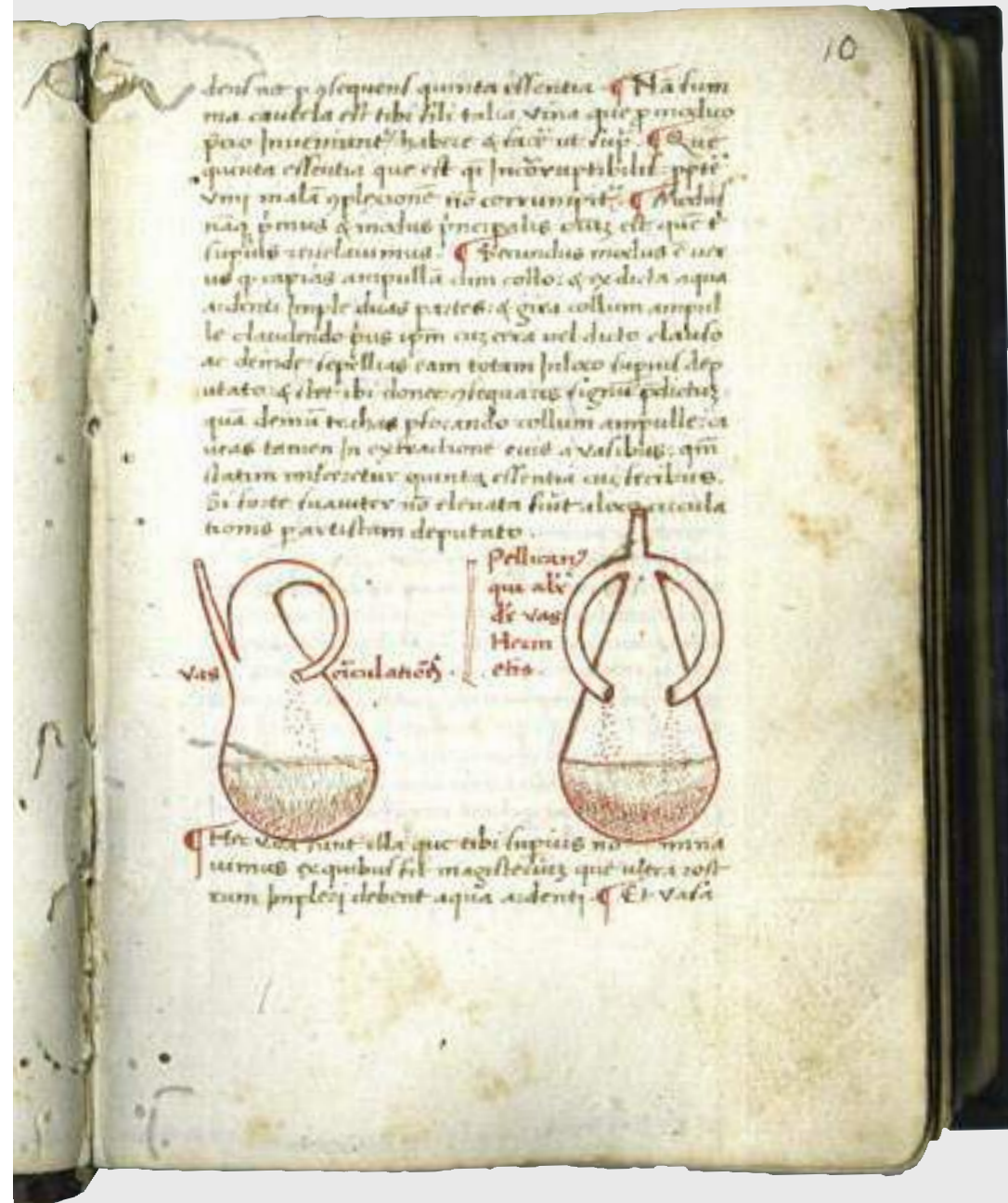
In Latin, illustrated manuscript on paper
Italy, Venice, 1498

The *Liber de secretis naturae seu de quinta essentia* (The Book of the Secrets of Nature or of the Fifth Essence), the central text of the Pseudo-Lullian corpus, is the work of an author writing at the end of the fourteenth century, who probably considered himself a disciple of Lull. He used large sections of the earlier work by John of Rupescissa (c. 1310-c. 1362), *De consideratione quintae essentiae omnium rerum* that linked alchemy with medicine by describing the process of producing *aqua vitae* by the distillation of wine, producing a substance that he said could prevent illness and premature aging (see cat. 2). The *Liber de secretis naturae* was not primarily interested in the medical application of the quintessence, and instead it interpreted Rupescissa's ideas as part of an alchemical system formulated in the Pseudo-Lullian *Testamentum* (cat. 5) that included medicine, the transmutation of metals, and the artificial production of precious stones.

This is a hitherto unrecorded copy of this text that includes the complete text and two versions of the of "*tertia distinctio*" (probably only one of three manuscript with two versions), and it merits careful study. It is signed and dated by its scribe, Johannes Cycurius Theatinus, while he was working in the house of the Doge of Venice, Leonardo Loredano (1436/8-1521), and includes drawings and numerous Lullian charts and figures. The use of genuine Lullian devices are important feature of the *Tertia distinctio*. [TM 695]

DESCRIPTION: ex-J.R. Ritman Collection, BPH 100; 182 folios, unidentified watermark, possibly missing one leaf, copied in a small, precise humanistic bookhand tending towards cursive in 30 long lines, initial f. 1 (added), TWO ILLUSTRATIONS, TWENTY-THREE CHARTS AND OTHER FIGURES, spotting from mold, foxing and minor stains, significant worm holes throughout, rarely affecting legibility, modern repairs, modern brown leather binding. Dimensions, 164 x 115 mm.

LITERATURE: Sebastiano Gentile and Carlos Gilly, *Marsilio Ficino e il ritorno di Ermete Trismegisto* (*Marsilio Ficino and the return of Hermes Trismegistus*), Florence, 1999, no. 36, pp. 221-224; Michela Pereira, *The Alchemical Corpus Attributed to Raymond Lull*, London, 1989 (online update, http://www.ramonlull.net/sw_studies/l_br/s_pseudo_0.htm); Michela Pereira, "Sulla tradizione testuale del *Liber de secretis naturae seu de quinta essentia* attribuito a Raimondo Lullo: Le due redazioni della *Tertia distinctio*," *Archives internationales des sciences* 36 (1986), pp. 1-16.



CHRISTOPHORUS PARISENSIS, *Opera* (in Italian): *Lucidarium artis transmutationis metallorum*; extracts from the *Sommetta* and *Violetta*; and *Epistola*

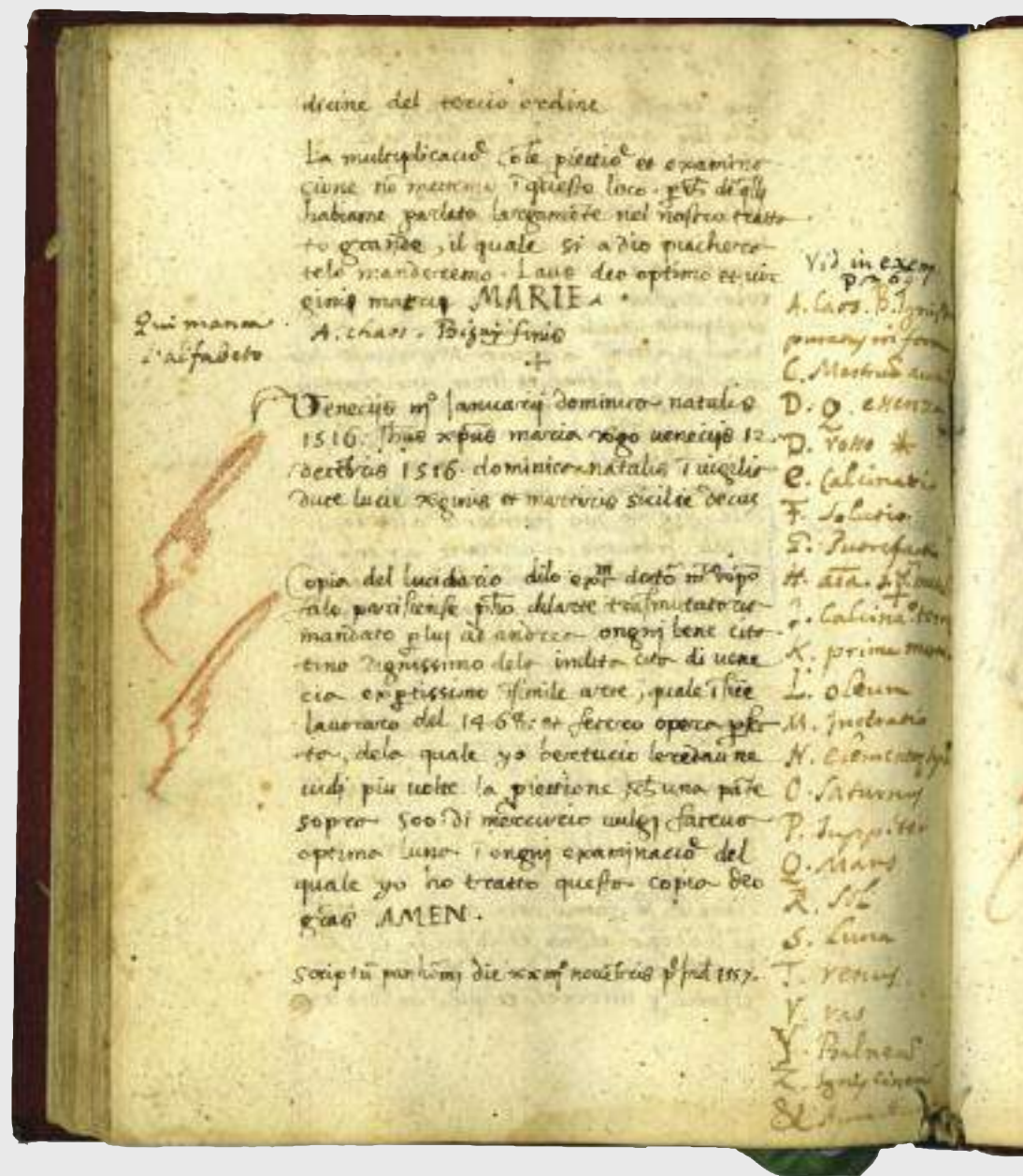
In Italian, with some Latin rubrics, manuscript on paper
Italy, Palermo, 1557

The writings of Christophorus Parisiensis (Christopher of Paris) have not been thoroughly studied to date; despite his name, he was almost certainly Italian, possibly from Venice, writing in the second half of the fifteenth century. The content of his work suggests that he was an enthusiastic follower of the Pseudo-Lullian school, although he also cites other authors. The Latin text of the *Lucidarium* includes a statement warning that alchemical secrets should be guarded and, in particular, open only to those who knew Latin — a sentence that that does not seem to appear in our Italian version of the text. Despite this, he is the author of two works, the *Sommetta* and *Violetta*, from the 1470s that may be the earliest alchemical treatises in Italian, and all his works, including the *Lucidarium*, circulated in Italian.

This copy, dated by the scribe, is particularly valuable for the copious notes and annotations that crowd its margins. It also includes an unusually detailed account of the composition of the text immediately preceding the scribal colophon that includes an “eye-witness” statement, testifying that he had seen mercury turned into silver “A copy of the *Lucidario* by the most excellent doctor master Christopher of Paris... very expert in that art which he practiced in 1468, and he accomplished the complete work, of which I, Bertuccio Leredan, saw several times the great stone, and with one part upon 500 parts of mercury he made silver of the best quality withstanding every examination.” [TM 701]

DESCRIPTION: ex-J. R. Ritman Collection, BPH 209; 85 folios, watermark, undetermined type, missing 72 leaves at the beginning, otherwise complete, written in a vigorous formal Italian cursive script in 28-31 long lines, some stains, early repairs, previously bound in plain paper covers (bound in), now in a 19th-century red half leather binding. Dimensions, 201 x 153 mm.

LITERATURE: Christophorus Parisiensis, *Elucidarius*, *Klassiker der Alchemie* 1, Berlin, Alchemistische Arbeitsgemeinschaft, 1931; Michela Pereira, “Alchemy and the Use of Vernacular Languages in the Late Middle Ages,” *Speculum* 74 (1999), pp. 336-35.



PSEUDO-ARNALDUS DE VILLANOVA, *Le petit rosaire*,
trans. J. B. DE G.; **JEAN DE MEUN**, Extract on Alchemy
from the *Roman de la Rose (La Table de maistre Jehan de Meun)*

In French, illustrated manuscript on paper
Northeastern France, c. 1600-40

The *Rosarius philosophorum* was one of the most influential texts in the alchemical corpus that circulated under the name of the Catalan physician, Arnaldus of Villanova (c. 1240-1311). Like the Pseudo-Lullian alchemical corpus, none of these texts are now considered authentic. Instead, the *Rosarius* was probably composed between 1323 and 1343 by an anonymous cleric, likely a Franciscan, who assembled a "rosaire" (a florilegium) of extracts from various alchemical works, arranging them according to the progression of the alchemical "opus." The treatise was important for its transmission of the alchemical theories formulated by Roger Bacon and for the theory of "mercury alone," articulated by Pseudo-Geber. It was translated into French early, and it also circulated in *langue d'oc* and Castilian.

This is almost certainly a previously unknown copy of *Le Petit Rosaire*, also found in Cambrai, Bibliothèque municipale, MS 918, written in 1426 in Arras by Charles Pecquart, which despite its title ("The Little Rosary") is a lengthy, expanded French translation of the text of the *Rosarius philosophorum*. It is a careful copy, with wide margins providing room for contemporary annotations throughout in several hands, and like the original, it includes copious illustrations, ninety-four in all. At the end a contemporary reader added a wry piece of advice for the alchemist, which translates: "He who seeks the secret of the philosophers [the philosophers' stone] and is not a philosopher is a fool, for this secret lies among the hidden and obscure things of nature." [TM 700]

DESCRIPTION: ex-J.R. Ritman Collection, BPH 204; 120 folios, original foliation, apparently complete, written in a very small cursive script in up to 42 long lines, NINETY-FOUR ILLUSTRATIONS, f. 1, top outer corner damaged, edges darkened, some soiling and stains, contemporary limp vellum binding, ties missing, slightly damaged, but sound condition. Dimensions, 315 x 205 mm.

LITERATURE: Antoine Calvet, "Étude d'un texte alchimique latin du XIV^e siècle. Le *Rosarius philosophorum* attribué au medecin Arnaud de Villeneuve," *Early Science and Medicine* 11 (2006), pp. 162-206; *ibid*, *Les oeuvres alchimiques attribuées à Arnaud de Villeneuve: grand oeuvre, médecine et prophétie au Moyen-Âge*, Paris, 2011; *ibid*, *Le Rosier alchimique de Montpellier, Le Rosari*, Paris, 1997.



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Three Alchemical Miniatures from *Das Buch der heiligen Dreifaltigkeit*

Miniatures on parchment

Southern Germany or Austria, c. 1450-1475

These alchemical miniatures are of a quality that suggests they were once part of an unusually deluxe alchemical manuscript, still unidentified. A fourth image from the same manuscript is now Stockholm, National Museum of Sweden, B 1587. They are of interest for their iconography and as evidence of the existence of a manuscript of *Das Buch der heiligen Dreifaltigkeit* illustrated by fully-painted miniatures, rather than colored line drawings.

Das Buch der heiligen Dreifaltigkeit (The Book of the Holy Trinity), the earliest alchemical work in German, belongs in the tradition of alchemical texts such as those by Johannes Rupescissa and Pseudo-Arnaldus of Villanova that were influenced by the eschatological ideas of the Spiritual Franciscans, although in this case alchemy is seen as a means to help establish the reign of a last emperor. Its author, generally identified as a Franciscan by the name of Ulmannus, was present at the council of Constance in 1416-17, where he presented some version of the text to the emperor Sigismund; in 1419 the completed text was dedicated to Frederic I (1370-1440), elector of Brandenburg. It survives in twenty-four manuscripts and fragments, many of which are illustrated with pictorial motifs relating to political views, theological doctrines, and the alchemical transformation of metals. These illustrations can be divided into three groups; the miniatures described here, and the miniature now in Stockholm, belong to the third group with the most extensive cycle of illustrations. [TM 698]

DESCRIPTION: ex-J.R. Ritman Collection, BPH 177; THREE FULL-PAGE MINIATURES with gilt borders, originally from the same manuscript, slightly rubbed, otherwise in good condition, mounted on wood, in gilt frames. Dimensions, framed: 142 x 112 mm.; miniature, c. 119 x 86 mm.

LITERATURE: Herwig Buntz, "Das Buch der heiligen Dreifaltigkeit - sein Autor und seine Überlieferung," *Zeitschrift für Deutsches Altertum* XX (1971), pp. 150-160; U. Junker, *Das 'Buch der Heiligen Dreifaltigkeit' in seiner zweiten, alchemistischen Fassung (Kadolzburg 1433)*, Cologne, 1986; C. Nordenfalk, *Bokmålningar från medeltid och renässans i Nationalmusei samlingar*, Stockholm, 1979, no. 32 and figs. 238-9; B. Obrist, *Les débuts de l'imagerie alchimique (XIV-XV^e siècles)*, Paris, 1982.



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Glossary

Alchemy - A practical and theoretical endeavor, similar to chemistry, that aimed to understand, control, and manipulate the transformations of material substances, especially to produce precious metals and improved medicines, widely practiced from about the second century AD until the eighteenth, and occasionally, to the present day.

Alembic* - A cap or "head" placed atop a cucurbit for condensing vapors during a distillation and directing the distillate into a receiver.

Alkahest - A supposed "universal dissolvent" sought by some alchemists in the seventeenth and eighteenth centuries that could divide any substance into its essential ingredients.

Aludel - A capsule-shaped vessel, generally of clay, used for subliming salts and other volatile materials.



Argyropoeia - The practice of making silver (from the Greek *argyron poien*, to make silver).

Athamor - A kind of alchemical furnace; the name supposedly derives from the Greek *athanatos*, meaning undying, because the fire in the athamor was to be kept burning continuously in order to provide long-term heating.



Chrysopoeia - The practice of making gold (from the Greek *chryson poien*, to make gold).

Cucurbit - A common round-bottom flask used for many purposes, most frequently as a distillation vessel and/or a receiver for distillates. Its name literally means "gourd," in reference to its shape.



Decknamen - A German term meaning "cover-name" that refers to the innumerable allegorical and otherwise coded names that alchemists used instead of the common name for the substances with which they were working.

Elixir - Generally a synonym for philosophers' stone. The elixir can be prepared in two forms — white and red. The red is the completed philosophers' stone that makes gold; the white elixir is an immature form that produces silver.

Hermes - The legendary founder of alchemy, supposedly an Egyptian sage contemporary with Moses. In fact, the highly diverse writings attributed to Hermes "Trismegestus" (the Thrice-Great) were composed from the third century B.C. until the sixth century A.D.

Hermetically sealed - A term still in use today, but which originally meant "sealed according to the teaching of Hermes." The seal of Hermes was used specifically for closing up the neck of the philosophical egg, by melting the glass shut, in preparation for heating it to make the philosophers' stone.

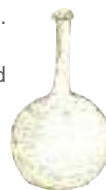
Mercury and Sulfur - According to traditional alchemy, these terms could refer to several things. First, the two essential constituents that combine underground to form the various metals. Second, the two ingredients needed to make the philosophers' stone. Third, any number of specific substances that could be classified as "Mercury" or "Sulfur" because of their properties and in order to hide their real identities. Mercury was considered a wet, cold, liquid, "female" principle, while Sulfur was hot, dry, flammable, and "male."



Pelican - A vessel used for "circulating" volatile materials, what we now call refluxing. Vapors rising from below are re-condensed at the top of the vessel, and returned to the belly via one or two tubes. The name refers to the shape of the vessel which resembles a pelican, which, according to traditional lore, wounds its breast to feed its chicks with its blood. Also double pelican*.

Philosophers' Stone - The agent of metallic transmutation. According to those who claim to have made it in their laboratories, the completed stone is a red, heavy, waxy substance that requires several months to a year or more to prepare. To use the stone, a small fragment is thrown into a crucible of molten base metal, usually lead, and heated strongly; within a few minutes the entire mass of metal should be changed into gold.

Philosophical egg - An egg-shaped flask with a long neck used especially for the long-term heating required to make the philosophers' stone.



Projection - The act of throwing (from the Latin *projicere*, to throw) a particle of the philosophers' stone onto a molten base metal to effect transmutation.

Seven metals - Seven metals were known to the alchemists; two noble — gold and silver — and five base or ignoble — copper, iron, lead, tin, and mercury.

Spagyria - A general process, promoted by the sixteenth-century Swiss physician Paracelsus, whereby a naturally-occurring substance is alchemically divided into its ingredients, the ingredients purified separately, and then recombined to form an "exalted" form of the original substance, more powerful medicinally, and free from toxic or insalubrious side-effects.

Sublimation - An important alchemical (and chemical) operation whereby a solid material is heated in a furnace, converted directly into a vapor, and recondensed in higher, cooler parts of the vessel into a purified solid.

Transmutation - The conversion of one metal into another. Some alchemists claimed that any metal could be turned into any other, but most limited their efforts to transmutations that proceeded upwards in perfection, towards gold, the perfect metal.



Alchemy: Selected Sources

General:

Joly, Bernard. *Histoire de l'alchimie*, Paris, 2013; excellent French-language survey of alchemy.

Moran, Bruce. *Distilling Knowledge: Alchemy, Chemistry, and the Scientific Revolution*, Cambridge, MA, 2005; emphasis on the sixteenth and seventeenth century.

Priesner, Claus. *Geschichte der Alchemie*, Munich, 2011.

Principe, Lawrence M. *The Secrets of Alchemy*, Chicago, 2013; the only up-to-date English-language survey of alchemy from its origins to the present day, with copious notes and references.

Taylor, Frank Sherwood. *The Alchemists: Founders of Modern Chemistry*, New York, 1949; the best of the older literature on the subject, now dated but still readable.

Collections:

Crisciani, Chiara and Agostino Paravicini Bagliani, eds. *Alchimia e medicina nel Medioevo*, *Micrologus Library* 9, Florence, 2003.

López-Pérez, Miguel, Didier Kahn, and Mar Rey-Bueno, eds. *Chymia: Science and Nature in Medieval and Early Modern Europe*, Newcastle-upon-Tyne, 2010.

Margolin, Jean-Claude and Sylvain Matton, eds. *Alchimie et philosophie à la Renaissance*, Paris, 1993.

Principe, Lawrence M., ed. *Chymists and Chymistry*, Sagamore Beach, MA, 2007.

More Specialized Treatments:

Halleux, Robert. *Les textes alchimiques*, Turnhout, 1979; short, older work with much clear and useful information and references.

Moran, Bruce. "Focus: Alchemy and the History of Science," *Isis* 102 (2011), pp. 300-337; five short articles reviewing and assessing the current scholarly revival and understanding of alchemy.

Newman, William R. *Atoms and Alchemy*, Chicago, 2006; explores the debts of early chemical theories of microscopic particles to the alchemical tradition.

Newman, William R. "Technology and Alchemical Debate in the Late Middle Ages," *Isis* 80 (1989), pp. 423-445; describes the controversial character of Medieval alchemy.

Newman, William R. and Lawrence M. Principe. "Alchemy vs. Chemistry: The Etymological Origins of a Historiographic Mistake," *Early Science and Medicine* 3 (1998), pp. 32-65; follows the use of the words alchemy and chemistry to show that the two words (and the two practices) were not distinguished before the end of the 17th century.

Nummedal, Tara. *Alchemy and Authority in the Holy Roman Empire*, Chicago, 2007; excellent work on the role of contractual alchemists in early modern German courts.

Obrist, Barbara. *Les débuts de l'imagerie alchimique*, Paris, 1982; essential reading on alchemical imagery.

Principe, Lawrence M. *The Aspiring Adept: Robert Boyle and his Alchemical Quest*, Princeton, 1998; reveals how the "Father of Chemistry" pursued alchemical transmutation.

Principe, Lawrence M. and Lloyd Dewitt. *Transmutations: Alchemy in Art*, Philadelphia, 2002; a small, well-illustrated booklet displaying and discussing the representation of alchemists in art from the 16th to the 19th century.

Principe, Lawrence M. and William R. Newman. "Some Problems in the Historiography of Alchemy" in William R. Newman and Anthony Grafton, eds., *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, pp. 385-434, Cambridge, MA, 2001; an analysis and critique of some of the most prevalent (mis)interpretations of alchemy and their origins.



LAWRENCE M. PRINCIPE has been studying the history and practice of alchemy for over thirty years. He is the Drew Professor of Humanities at Johns Hopkins University in the Department of History of Science and Technology and the Department of Chemistry. His books include *The Aspiring Adept: Robert Boyle and His Alchemical Quest* (1998), *The Scientific Revolution: A Very Short Introduction* (2011), and *The Secrets of Alchemy* (2013).

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