

ALCHEMY IN EUROPE

A Guide to Research

Claudia Kren

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ALCHEMY



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INTRODUCTION

We are all familiar with the conventional picture of the alchemist, huddled over his retort, pursuing his vain dream of the Philosopher's Stone, destined to change base metal into gold, or of an elixir designed to insure health, long life, or even immortality. This stereotype, while not untrue, hardly does justice to the significance of the alchemical enterprise. For example, it fails to account for the centuries-long fascination alchemy has exercised or for its worldwide appeal. While this bibliography concerns only alchemy as practiced in Western Europe, the art has had a long history in many diverse cultures.

Alchemy in the West is a complex phenomenon. There were alchemists whose search for the stone or the elixir was confined to what appears to be straightforward laboratory work with frequently recognizable reagents, apparatus, and processes (often called "exoteric" alchemy); in fact, the alchemist's laboratory, especially his favorite procedure, slow distillation, has given rise to an array of useful furnaces, stills, and other apparatus. But a study of alchemy and its devotees often reveals an activity which, while not necessarily divorced from actual manipulation, clearly had a meaning for the practitioner which transcended the laboratory. In this aspect of the alchemical enterprise (sometimes referred to as "esoteric" alchemy), the would-be adept considered his materials and apparatus as elements in a spiritual metaphor, an inner process brought to a successful fruition only by those with no crass motive such as personal gain. This so-called Great Work was a lengthy one with several distinct stages and marked always with the possibility of failure. The two types of alchemy, that of the laboratory and that of the mind, have been interwoven in the Western alchemical tradition from its inception and so, from the earliest days, alchemical texts are not always experimental notebooks but are filled with arcane symbols, fantastic metaphors,

and cryptic allegory.

In Christian Europe, the Great Work, already reflecting a spiritual significance, often took on a profoundly soteriological character. Here, the stages of the Work, from the initial chaos of matter stripped of its basic qualities to the triumphant success of the last stage were regarded as a metaphorical process mirroring the struggle of the human soul toward salvation.

Of course, alchemy has had its charlatans who preyed on the greedy; no doubt, also, there were those who saw in the art a kind of get-rich-quick scheme, but they were rare. It is evident that alchemy could reflect a wide gamut of human motives from the avarice of the con-man to a longing for the soul's salvation.

* * *

By almost universal agreement, alchemy in Western Europe was one of the products of a Hellenistic culture—Hermetic and neoplatonic—where the universe was a unified cosmos with all parts interrelated in a web of hierarchical correspondences and with all aspects in some sense animate and active. This complex of semi-religious notions was joined by an influential theory which held that the elemental forms of matter were convertible one into another. In addition to these learned traditions—religious and philosophical—the Hellenistic world was also heir to a magnificent craft tradition which had long displayed expertise in handling many materials, including base and precious metals. Given this technological-philosophical-religious background, the notion that one could find a substance which would effect a genuine transmutation seems a viable one.

During the collapse of civilization in Western Europe in the early Middle Ages, alchemical thought along with much of the Greek scientific tradition was transmitted to the Arabic world and, again like Greek science, brought back again in the twelfth century in Latin translation accompanied by notions contributed by Islamic alchemists. However, these transmissions, both eastward and then west, are by no means clear-cut; false ascriptions to prominent Arabic thinkers abound and have created many a pseudepigraphical problem. There has long been a tendency among alchemists to attribute their texts to well-known and respected figures. Alchemy was a dubious enterprise in the medieval period, viewed

with suspicion by a religious establishment that questioned the source of this purported mastery of nature's secrets.

The revival in the Renaissance of the world view, in which alchemy had originally flourished—Hermetic and neoplatonic, interconnected and animistic—brought about by the recovery of much of the Hellenistic past previously unavailable (for example, Ficino's translation of the hermetic *corpus*), saw a great up-swing in the fortunes of esoteric alchemy, at the expense of the alchemy of the laboratory. Alchemical symbolism and allegory found luxuriant expression in the so-called "emblem" book, that is, a mystical, spiritual alchemy in pictorial form accompanied by a terse and cryptic text.

The scientific revolution that began in the seventeenth century, with its mathematical-mechanical universe of inert matter in motion, did mean the eventual end of alchemy as a serious activity, even though this change did not occur as simplistically as historians have previously thought.

In this century, the study of alchemy as an interesting and important aspect of the scientific past has clearly emerged. One might mention three symptomatic developments. One is the regular appearance since 1937 of *Ambix*, a scholarly journal devoted to alchemy and early chemistry, though alchemy is, of course, well represented in a variety of other learned journals.

A new evaluation of alchemy's significance has also come about through the psychological interpretation of the Great Work by the Swiss psychiatrist, Carl G. Jung. Jung drew on his own theories of depth psychology to explain the various stages of the Work as a "projection" of the psychic and unconscious content of the alchemist's mind onto the alchemical process, which thus represented a progression from an initial despair, or alienation, to a final psychic healing. This viewpoint has enjoyed a wide, although not universal, acceptance and does account for many features of alchemy.

Last, during the past few decades, historians of science have come to realize that the mystical, Hermetic world view of the Renaissance was not simply displaced by the mechanical clock-work universe of the scientific revolution; that is, the old "irrational" world of occult qualities and sympathies did not immediately yield to the "scientific" view of nature. It is now apparent that much of the older view (including the doctrines which made

alchemy feasible) persisted long after many of the triumphs of early modern science were in place.

* * *

There are several types of entry in the bibliography. Included are editions of alchemical treatises, critical and otherwise, as well as secondary materials such as books, journal articles, and essays in collections. Editions of alchemical works, collections of such texts, and research materials in general have usually not been annotated. It is assumed that in such cases the content is either known or is apparent from the title and that it is the bibliographical information that is of use. Secondary works have been annotated for the most part. There are cross-references in the bibliography which link materials of similar topic.

Some types of entry have been deliberately excluded; reviews and dissertations will not be found here. Moreover, as the bibliography is rather narrowly focused on European alchemy *per se*, there are subjects which have been omitted or not covered thoroughly. For example, the bibliography does little justice to Paracelsus and the Paracelsians. Likewise, although they are germane to an understanding of alchemy in the West, materials dealing specifically with Hermetic, neoplatonic, and gnostic doctrines are excluded, as is work on the cabala, especially its Christian adaptation, and on the secret societies, purported or real, of the early modern period such as the Rosicrucians and Freemasons, movements which shared with alchemy claims to a secret wisdom limited to an initiated few. Such societies are expressly treated in Karl R.H. Frick's two-volume *Licht und Finsterniss* (Graz: Akademische Druck- und Verlagsanstalt, 1975, 1978). This study is not included here, but see item 465. Last, the persistent appeal of alchemical notions to Lutheran theologians of a heterodox bent, while interesting, has been considered too peripheral for inclusion.

Method of Classification

The classification scheme is partly thematic and partly chronological. The bibliography begins with a preliminary section

with two classes of entry, research aids and general works on alchemy.

Research Aids

This section contains works on research methods, catalogues of printed books and MSS collections, as well as reports on specific MSS, dictionaries, lexicons of alchemical terms and symbols, and bibliographies.

General Works

Includes collections of alchemical treatises and material on alchemy not tied to a specific time-frame, works on the significance of alchemy or on its history, as well as histories of chemistry with a substantial treatment of alchemy. It also includes popular works on alchemy. These often reproduce the more spectacular of the miniatures and etchings of the alchemical emblem literature not otherwise available.

The preliminary section is followed by a chronological organization extending from the Hellenistic period through the eighteenth century.

Early Alchemy

Contains material on the origin of European alchemy as well as the fortunes of alchemy in Mediterranean culture, especially in Hellenistic Egypt.

Medieval Alchemy

Features alchemical materials from the twelfth through approximately the fifteenth century. It also includes Arabic alchemical texts made available in Latin translation as well as material attributed to Arabic authors.

Alchemy in the Renaissance

Contains alchemical material dating chiefly from the sixteenth century.

Alchemy in Early Modern Europe

Comprises texts and associated material from the seventeenth and eighteenth centuries, excluding work on Newton's association with alchemy. (For this topic, see below.) There is some overlap among these chronological divisions.

The final section, thematically organized, deals with alchemy in relation to various aspects of European culture.

Alchemy and the Arts

Discussions centering around depictions of the alchemist, his laboratory, and alchemical themes expressed in various artistic mediums and in literary works. It also includes interpretations of alchemical symbolism in art and literature as well as alchemy's relations to music.

Alchemy and Society

Includes material on the place of the alchemist in society and his relationship to various aspects of his culture.

Alchemy and the Spiritual

While many alchemical works have seen in the art a religious quest, this section contains material that particularly focuses on this aspect. It also includes works linking alchemy directly to the occult. Here also are listed the works of Jung on alchemy as well as of those who have found his explication of the meaning of alchemy congenial.

Alchemy and Newton

Materials which are concerned with Newton's long-held interest in alchemy are included in this special section rather than listed under *Alchemy in Early Modern Europe* (see above) in recognition of the role of alchemy in Newton's thought brought forward during the past few decades.

I would like to thank the staff of the Cape Cod Community College Library for their help, especially Jeanmarie Fraser, whose patience I often tried.

Alchemy in Europe

RESEARCH AIDS

1. *Alchemy and the Occult. A Catalogue of Books and Manuscripts from the Collection of Paul and Mary Mellon Given to Yale University Library.* Compiled by Ian Macphail with essays by R.P. Multhauf and Aniela Jaffé and additional notes by William McGuire. 2 vols. New Haven: Yale University Library, 1968.
2. *Alchemy and the Occult: A Catalogue of Books and Manuscripts from the Collection of Paul and Mary Mellon Given to Yale University Library.* Compiled by Laurence C. Whitten II and Richard Pachella. With an introduction by Pearl Kibre and additional notes by William McGuire. Vol. III: MSS 1225-1671. Vol. IV: MSS 1671-1922. New Haven: Yale University Library, 1977. Pp. xciv + 853.
3. Barrett, Francis. *The Lives of Alchemystical Philosophers. With a Critical Catalogue of Books in Occult Chemistry, and a Selection of the Most Celebrated Treatises on the Theory and Practice of the Hermetic Art.* Reprint of the 1815 edition. London: John M. Watkins, 1955. Pp. 382.

A facsimile reprint containing alchemical materials not available elsewhere.
4. *Bibliotheca alchemica et chemica. An Annotated Catalogue of Printed Books on Alchemy, Chemistry and Cognate Subjects in the Library of Denis I. Duveen.* London: E. Weil, 1949. Pp. vii + 669.

5. Broszinski, Hartmut. "Die Katalogisierung der Kasseler alchemistischen Handschriften. Ein Bericht." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 19-31.
6. Carbonelli, Giovanni. *Sulle fonti storiche della chimia e dell'alchimia in Italia*. Rome: Istituto Nazionale Medico Farmacologico, 1925.
7. Corbett, J. *Catalogue des alchimiques latins*. 2 vols. Brussels, 1939, 1951.
8. Ferguson, John. *Catalogue of the Ferguson Collection of Books, Mainly Relating to Alchemy, Chemistry, Witchcraft and Gipsies, in the Library of the University of Glasgow*. 2 vols. Glasgow: R. Maclehose, 1943.
9. Ferguson, John. *Bibliotheca chemica*. 2 vols. Glasgow, 1906. Reprint. London: Holland Press, 1954-1955.
10. Figala, Karen. "Project for Cataloging Alchemical MSS in German-Speaking Areas." *Ambix*, 20 (1973), 245-246.

Discusses a project supported by the Deutsche Forschungsgemeinschaft and the Institute for History of Exact Sciences and Technology of the Technical University of Munich.
11. Frick, Karl R.H. "The Rediscovered Original MS 'Ehrenrettung der Alchemie' of the Tübingen Alchemist Johann Conrad Creiling (1673-1752)." *Ambix*, 7 (1959), 164-167.
12. Gagnon, Claude. "Recherche bibliographique sur l'alchimie médiévale occidentale." *La science de la nature: Théories et pratiques. Cahiers d'études médiévales*, II. Paris: J. Vrin, 1974, pp. 155-199.

Presents a rationale (with outline) and preliminary

illustrative entries for a bibliography of medieval alchemy in the West.

13. Gettings, Fred. *Dictionary of Occult, Hermetic and Alchemical Sigils*. London: Routledge & Kegan Paul, 1981. Pp. 410.
14. Goldschmidt, Günther. "Katalogisierung der mittelalterlichen medizinischen und alchemistischen Hss. der Zentralbibliothek Zürich." *Gesnerus*, 2 (1945), 151-162.
15. Gottlieb, Jean S. "Hermetic, Alchemical, and Rosicrucian Works at the Newberry Library of Chicago." *Cauda Pavonis*, 3 (1984), 3.
16. Heym, Gerard. "An Introduction to the Bibliography of Alchemy-Part I." *Ambix*, 1 (1937), 48-60.

A preliminary, annotated bibliography as of 1937.

17. Hirsch, R. "The Invention of Printing and the Diffusion of Alchemical and Chemical Knowledge." *Chymia*, 3 (1950), 115-141.

A checklist of chemical/alchemical incunabula (1469-1536).

18. Hogart, Ron. Charles. *Alchemy. A Comprehensive Bibliography of the Manly P. Hall Collection of Books and Manuscripts, including Related Material on Rosicrucianism and the Writings of Jacob Boehme*. Introduction by Manly P. Hall. Los Angeles: Philosophical Research Society, 1986. Pp. xiv + 314.
- 18A. Kibre, Pearl. "Alchemical Writings Ascribed to Albertus Magnus." *Speculum*, 17 (1942), 499-518.

Points out that the treatises bearing Albert's name are free of alchemical mysticism.

See also *Speculum*, 34 (1959), 238-247 for alchemical MSS attributed to Albert.

19. Kibre, Pearl. "Two Alchemical Miscellanies: Vatican Latin MSS. 4041, 4092." *Ambix*, 8 (1960), 167-176.

A description of the MSS and their contents.

20. Lüdy-Tenger, Fritz. *Alchemistische und chemische Zeichen*. Berlin, 1928. Reprint: Würzburg: "Journal Franz Arnulf Liebing," 1973. Pp. 57.

21. MacPhail, Ian. "The Mellon Collection of Alchemy and the Occult." *Ambix*, 14 (1967), 198-202.

Discusses this collection of books and manuscripts now at Yale University.

See items 1, 2.

22. Pattin, Adriaan. "Un recueil alchimique: Le manuscrit Firenze Bibl. Riccardiana, L. III. 13. 119: Description et documentation." *Bulletin de philosophie médiévale*, 14 (1972), 89-107.

Describes this fourteenth- and fifteenth-century collection of alchemical texts in the Riccardiana.

23. Pritchard, Alan. *Alchemy. A Bibliography of English-Language Writings*. London: Routledge & Kegan Paul, 1980. Pp. vii + 439.

Contains materials on alchemy, astrology and religious/philosophical topics.

24. Ruska, Julius F. "Methods of Research in the History of Chemistry." *Ambix*, 1 (1937), 21-29.

A historiographical essay on research in alchemy as of 1937 which stresses the need for philological methods.

25. Russo, A. "Manoscritti d'interesse alchimistico . . . Biblioteca Nazionale 'V. Emmanuele' di Napoli." *La Farmacia Nuova*, 27 (1971), fasc. 7-8.

26. Rutland, Martin. *A Lexicon of Alchemy*. Frankfort, 1612. Reprint. London: John M. Watkins, 1964.

A facsimile reprint of the London, 1892 edition.

27. Schmitt, Wolfram. "Eine handschriftliche Sammlung alchemistischer Traktate aus Böhmen." *Stifter-Jahrbuch*, 7 (1962), 177-195.

Reports a collection of sixteenth- and seventeenth-century texts in the Landesbibliothek at Kassel.

28. Schneider, Wolfgang. *Lexikon alchemistisch-pharmazeutischer Symbole*. Weinheim: Verlag Chemie, 1962. Pp. 140.

29. Simcock, A.V. "Alchemy and the World of Science: An Intellectual Biography of Frank Sherwood Taylor." *Ambix*, 34 (1987), 121-139.

Offers an appreciation of this pioneer in the history of alchemy; Taylor was the founding editor of the journal, *Ambix*.

30. Singer, Dorothea W. *Catalogue of Latin and Vernacular Alchemical MSS in Great Britain and Ireland Dating Before the XVI Century*. 3 vols. Brussels: Lamertin, 1928-1931.

31. Telle, Joachim. "Manuscripta alchemica der Sammlung Mellon: Bemerkungen zum Katalog." *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften*, 65 (1981), 79-96.

Discusses and corrects the catalog of the Mellon collection at Yale.

See items 1, 2.

32. Testi, Gino. *Dizionario di alchimia e di chimica antiquaria*. Rome: Casa Editrice Mediterranea, 1950. Pp. 210.

Contains between eight and nine thousand terms employed by alchemists and premodern chemists.

- 32A. Thorndike, Lynn. "Some Alchemical Manuscripts at Bologna and Florence." *Ambix*, 5 (1956), 85-110.

Describes MSS at the University Library, Bologna and at the Laurentian, Riccardian and National Libraries at Florence.

33. Wilson, W.J. "Catalogue of Latin and Vernacular Alchemical MSS in the U.S. and Canada.", *Osiris*, 6 (1939), 1-836.

GENERAL WORKS

34. Ashmole, Elias. *Theatrum chemicum Britannicum*. Facsimile reprint of the 1652 edition, with an introduction by Allen G. Debus. New York: Johnson Reprint, 1967. Pp. xiix + 486.

One of the most important alchemical collections in English.

35. Burckhardt, Titus. *Alchemy: Science of the Cosmos, Science of the Soul*. Translated from the German by William Studdart. London: Stuart & Watkins, 1967. Pp. 206.

An account of European alchemy which strongly stresses the spiritual/mystical side. Originally published as *Alchemie, Sinn und Weltbild* in 1960.

36. Burland, C.A. *The Arts of the Alchemists*. New York: Macmillan, 1968. Pp. xiv + 224.

Surveys the alchemical process through a step-by-step analysis of the stages of the Great Work.

37. Butler, Anthony R., *et al.* "Mosaic Gold in Europe and China." *Chemistry in Britain*, 19 (1983), 132-135.

Comments on and contrasts methods of preparation of mosaic gold (tin sulfide) in Europe and China. The material, when crystalline, looks like gold.

38. Canseliet, Eugène. *Alchimie: Etudes diverses de symbolisme hermétique et de pratique philosophale*. Paris: Pauvert, 1964. Pp. 283.

A collection of essays, written considerably before the publication date given above, on several alchemical themes and symbols. The essays express the author's view of alchemy as an ancient and purifying tradition in which, with patience and humility, mankind might find redemption.

39. Canseliet, Eugène, ed. *Trois anciens traités d'alchimie*. Paris: Pauvert, 1975. Pp. xlvii + 149.

The texts of three works in French on esoteric alchemy.

40. Canseliet, Eugène. *L'alchimie expliquée sur ses textes classiques*. Paris: Pauvert, 1980. Pp. 311.

First published in 1972. A work by a contemporary enthusiast who provides a spiritual guide to the Great Work for the aspiring adept, stressing the need for patience, courage, purity of motive.

41. Cañon, M., and Serge Hutin. *The Alchemists*. Translated by Helen R. Lane. New York: Grove Press, 1961. Pp. 192.

A profusely illustrated survey. Originally published in 1959 as *Les alchimistes*.

42. Condert, Allison. *Alchemy: The Philosopher's Stone*. London: Wildwood House, 1980. Pp. 239.

Treats all aspects of alchemy, including Islam and China.

43. Crosland, Maurice P. *Historical Studies in the Language of Chemistry*. London, 1962. Paperback reprint. New York: Dover, 1978.

Part I, Chapters 1 through 3, and Part IV, Chapter 1, deal

with alchemical terminology and symbolism, stressing the use of allegory and analogy, the dependence on the paradoxical and the problems occasioned by the often deliberate obscurity of the alchemical literature.

44. *Eröffnete Geheimnisse des Steins der Weisen, oder, Schatzkammer der Alchymie*. Introduction by Karl R.H. Frick. Hamburg, 1718. Reprint. Graz: Akademische Druck- und Verlagsanstalt, 1978. Pp. xxxvi + 816.
45. Figuiet, Louis. *L'alchimie et les alchimistes*. Notes by René Alleau. Paris: Denoël, 1970. Pp. 406.

A reissue of a nineteenth-century work with modern notes which covers the doctrines of alchemy, its fate during the Middle Ages and the Renaissance, and provides accounts of transmutations by several alchemists.

46. Forbes, R.J. *A Short History of the Art of Distillation from the Beginnings up to the Death of Cellier Blumenthal*. Leiden, 1948. Reprint. Leiden: E.J. Brill, 1970. Pp. viii + 405.

A work on technology which is, however, of value to the historian of alchemy.

47. Gagnon, Claude. "Alchimie, techniques et technologie." *Les arts mécaniques au moyen âge. Cahiers d'études médiévales*, VII. Edited by Guy H. Allard and Serge Lusignan. Paris: J. Vrin, 1974, pp. 131-146.

Analyzes two alchemical traditions: the theoretical-technological and the practical and speculates why this branch of the mechanic arts had no real development. It was ill-served by a false physical/metaphysical base plus a lack of technical capability; alchemy became progressively allegorized.

48. Ganzenmüller, Wilhelm. *Beiträge zur Geschichte der Technologie und der Alchemie*. Weinheim: Verlag Chemie, 1956. Pp. 389.

A collection of previously published essays.

49. García Font, Juan. *Historia de la alquimia en España*. Madrid: Editora Nacional, 1976. Pp. 341.

Traces the development of alchemy in Spain from its earliest introduction in the eleventh century in Toledo by translations from Arabic, through its fortunes at the Castilian and Aragonese courts up to the twentieth century.

50. Goltz, Dietlinde. "Versuch einer Grenzziehung zwischen Alchemie und Chemie." *Sudhoffs Archiv: Zeitschrift für Wissenschaftsgeschichte*, 52 (1968), 30-47.

Argues that although "chemistry" and "alchemy" were long used synonymously, there are a few touchstones which enable one to distinguish between them.

51. Grossinger, Richard. *Alchemy: Pre-Egyptian Legacy, Millennial Promise*. Richmond, Calif.: North Atlantic Books, 1979. Pp. 235.

Contains translations of alchemical materials by Zosimus, Paracelsus, Basil Valentine, Thomas Vaughan, Edward Kelley, and others.

52. Hamilton-Jones, J.W., ed. *Bacstrom's Alchemical Anthology*. London: John M. Watkins, 1960. Pp. 152.

An edition of an "essay on alchemy with extracts from great alchemists" by the late eighteenth-century Rosicrucian Dr. Sigismund Bacstrom.

53. Hartlaub, G.F. *Der Stein der Weisen, Wesen und Bildwelt der Alchemie*. Munich: Prestel Verlag, 1959. Pp. 52.

Surveys briefly the nature and goals of alchemy with emphasis on its symbolic character.

54. *The Hermetic Museum, Restored and Enlarged*. . . . Preface by Arthur E. Waite. 2 vols. 2d ed. London: Watkins, 1953.

55. Holmyard, E.J. *Alchemy*. Baltimore: Penguin Books, 1968. Pp. 288.

Surveys the history of alchemy from Greek origins through the early modern period, including developments in Islam and China.

56. Hopkins, Arthur J. *Alchemy, Child of Greek Philosophy*. New York: Columbia University Press, 1934. Pp. x + 262.

Traces the fortunes of alchemy from its origin in Hellenistic Egypt through the phlogiston theory and the eighteenth century. Stresses the rational, non-mystical aspect of the western alchemical tradition within the context of Greek philosophical, physical and technological thought.

57. Husson, Bernard, ed. *Anthologie de l'alchimie*. Paris: Belfond, 1971. Pp. 321.

Presents a collection of European alchemical materials dating from the fifteenth century, but not before, consisting of selected passages from works or complete texts, each prefaced by a brief introduction.

58. Hutin, Serge. *L'alchimie*. 3e éd. Paris: Presses Universitaires de France, 1966. Pp. 128.

59. Kauffman, George B. "The Role of Gold in Alchemy." *Gold Bulletin*, 18 (1985), 31-44, 69-78, 109-119.

60. Kopp, Hermann. *Die Alchemie in alterer und neuer Zeit*. 2 vols. in 1. Heidelberg, 1866. Reprint. Hildesheim: Olms, 1962. Pp. 425.

Covers alchemy from its origins to the last quarter of the eighteenth century.

61. von Lippmann, Edmund O. *Entstehung und Ausbreitung der Alchemie*. 3 vols. Berlin: Springer, 1919, 1931. Weinheim: Verlag Chemie, 1954.

Vol. I surveys Hellenistic and Arabic literature and sources; Vols. II and III are reference volumes listing alchemical and chemical substances, subjects and personalities. Vol. III was edited by Richard von Lippmann.

See item 115.

62. de Luanco, José R. *La alquimia en España*. Barcelona, 1889-1897. Reprint. 2 vols. in 1. Madrid: "Tres, Catorce Diecisiete," 1980.

63. Manget, Jean Jacques. *Bibliotheca chemica curiosa*. 2 vols. Geneva, 1702. Reprint. Bologna: A. Forni, 1976.

A collection of 140 alchemical texts.

64. Marx, Jacques. "Alchimie et palingénésie." *Isis*, 62 (1971), 275-289.

Reinterprets the term "palingenesis" to characterize the seeds of regeneration which are brought to fruition during the alchemical process.

65. Meinel, Christoph, ed. *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Wiesbaden: Harrassowitz, 1986. Pp. 356.

See items 5, 84, 185, 221, 284, 292, 308, 317, 338, 388, 403, 429, 442, 451, 452, 467, 496.

66. Monod-Herzen, Gabriel. *L'alchimie et son code symbolique*. Monaco: Rocher, 1978. Pp. 269.

Argues that Hellenistic sages, inspired by the Hermetic corpus, originated an alchemy whose real purpose was a spiritual union with God, and which was expressed symbolically as the transmutation or perfection of metals. After its Renaissance apogee, alchemy ostensibly declined with the introduction of modern science; however, it remained valid as a psychological phenomenon with a spiritual goal.

67. Multhauf, Robert P. *The Origins of Chemistry*. London: Oldbourne, 1966. Pp. 412.

Treats alchemy in antiquity, Islam, and medieval Europe within the context of the history of chemistry.

68. *Musaeum Hermeticum reformata et amplificatum*. Introduction by Karl R.H. Frick. Graz: Academische Druck- und Verlagsanstalt, 1970. Pp. xliii + 863.

A facsimile reprint of the Frankfurt, 1678 edition containing ten texts. The first volume in the series *Fontes artis chymicae*.

69. Needham, Joseph. "The Elixir Concept and Chemical Medicine in East and West." *Organon*, 11 (1975), 167-190.

Traces the development of the elixir notion, the end-product of a chemical/alchemical process, which would be an effective medicine or would insure immortality, in Chinese, Arabic, Byzantine, and European alchemy.

70. Ploss, Emil Ernst, Heinz Roonen-Runge, Heinrich Schipperges, and H. Buntz. *Alchemia, Ideologie und Technologie*. Munich: Heinz Moss, 1970. Pp. 227.

Surveys European alchemy by national areas including

mystical, theological, and technical aspects as well as the transmission and reception of Arabic alchemy in Europe.

71. Principe, Lawrence. "‘Chemical Translation’ and the Role of Impurities in Alchemy: Examples from Basil Valentine’s *Triumph-Wagen*." *Ambix*, 34 (1987), 21-30.

Argues that efforts to follow the procedures in alchemical texts which provide recipes (chemical translation) may lead to peculiar results thanks to the effects of impurities in the materials alchemists employed. Provides examples from Valentine’s *Triumphal Chariot of Antimony*.

72. Prinzler, Heinz. *Hortulus alchimiae: Vom Werden und Vergehen der Alchemie*. Leipzig: VEB Deutscher Verlag für Grundstoffindustrie, 1979. Pp. 247.

A brief account of alchemy and its scientific/philosophical background.

73. Read, John. *Prelude to Chemistry: An Outline of Alchemy, Its Literature and Relationships*. London, 1936. Paperback reprint. Cambridge, Mass.: M.I.T. Press, 1966. Pp. xxiv + 328.

A survey of alchemy.

74. Read, John. *Through Alchemy to Chemistry. A Procession of Ideas and Personalities*. London, 1957. Reprint. New York: AMS Press, 1982. Pp. xvii + 206.

Outlines the history of alchemy, including procedures of the Great Work, connections with religion and myth. Sees early chemistry as stemming from an alchemical tradition during the Scientific Revolution.

75. Redgrove, H.S. *Alchemy: Ancient and Modern*. Facsimile reprint of the 2d ed., 1922. With a new introduction by H.J. Sheppard. East Ardsley, Wakefield, Yorks.: EP

Publishing, 1973. Pp. ix + xx + 141.

A survey which emphasizes the connection between religion and alchemy.

76. de Rola, Stanislas Klossowski. *Alchemy, the Secret Art*. New York: Avon Books, 1973. Pp. 128.

Discusses the procedures and goals of esoteric alchemy—a search for redemption and a higher reality which has little to do with actual processes. Reproduces an unusually large number of alchemical illustrations from manuscripts and early editions.

77. Ruska, Julius F., and Eilhard Wiedemann. "Alchemistische Decknamen." *Sitzungsberichte der physikalisch-medizinischen Societät zu Erlangen*, 56 (1924), 17-36.

78. Savoret, André, Bernard Husson, *et al.* *Alchimie*. Paris: A. Michel, 1978. Pp. 221.

79. Schaefer, Heinrich W. *Die Alchemie: Ihr ägyptisch-griechischer Ursprung und ihrer weitere historische Entwicklung*. Berlin, 1887. Reprint. Wiesbaden: Sändig, 1967. Pp. 34.

Opts for the origin of alchemy in Hellenistic Egypt and traces developments to the early modern period.

80. Schmieder, K.C. *Geschichte der Alchemie*. Halle, 1832. Reprint. Ulm: Arkana Verlag, 1959. Pp. xii + 612.

Surveys alchemy from the Hellenistic period on. From 1400, provides short, chronologically arranged treatments of many alchemists.

81. Schneider, G. "Die geschichtlichen Beziehungen der Metallurgie zur Alchemie und Pharmazie." *Archiv für das Eisenhüttenwesen*, 37 (1966), 533-538.

82. Schütt, Hans-Werner. "Die Praxis der Alchemie." *Chemieunterricht*, 3 (1972), 89-98.
83. Sheppard, H.J. "Colour Symbolism in the Alchemical Opus." *Scientia*, 99 (1964), 232-236.

Stresses the role of the four main colors (black, white, yellow, red) in the process of the Great Work. Occasionally yellow was omitted; sometimes a range of colors (the peacock's tail) was found between black and white.

84. Sheppard, H.J. "European Alchemy in the Context of a Universal Definition." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986. Pp. 13-17.

Argues that the three aspects of alchemy, gold-making (the perfection of metals), the preparation of an elixir to confer immortality as well as the theme of redemption found in spiritual alchemy, all reflect a supposed ability to manipulate time. This characteristic can form the basis of a general definition.

85. Sòulard, Henry. "Alchimie occidentale et alchimie chinoise: Analogies et contrastes." *Bulletin de l'Association Guillaume Budé* (1970), 185-198.

Contrasts and compares the main features of European and Chinese alchemy.

86. Stillman, John M. *The Story of Alchemy and Early Chemistry*. New York: Dover, 1960. Pp. xiii + 566.

Originally published in 1924 as *The Story of Early Chemistry*. Surveys the history of chemistry from early antiquity through Lavoisier and the chemical revolution; alchemy is generally treated as part of the mainstream development of chemistry, and thus the focus is on practical techniques and the knowledge of chemical reagents and processes.

87. Szulakowska, Urszula. "The Tree of Aristotle: Images of the Philosopher's Stone and their Transference in Alchemy from the 15th to the 20th Century." *Ambix*, 33 (1986), 53-77.

Opts for an historical rather than psychological or iconographical approach to alchemical symbolism in tracing the transmission of two alchemical images over several centuries: the "tree of Aristotle" and "Aristotle and Adam."

88. Taylor, F. Sherwood. *The Alchemists: Founders of Modern Chemistry*. New York, 1949. Reprint. St. Albans: Paladin, 1976. Pp. 192.

A short history of alchemy, its goals and contributions to the science of matter.

89. de Torres Villarroel, Diego. *Recitarios astrologicos alquímico*. Edited by José Manuel Vallés. Madrid: Editora Nacional, 1977. Pp. 345.
90. Waite, Arthur E. *Alchemists Through the Ages. Lives of the Famous Alchemical Philosophers from the Year 850 to the Close of the 18th Century*. . . . Introduction by Paul M. Allen. London, 1888. Reprint. New York: Weiser, 1974. Pp. 320.

Provides biographical accounts of numerous alchemists from the Middle Ages through the early modern period.

91. Weyer, Jost. "Die theoretischen Grundlagen der Alchemie." *Chemieunterricht*, 3 (1972), 74-88.
92. Weyer, Jost. "Neuere Interpretationsmöglichkeiten der Alchemie." *Chemie in unserer Zeit*, 7 (1973), 171-181.

93. d'Ygé, Claude. *Nouvelle assemblée des philosophes chimiques*. Paris: Dervy Livres, 1954. Pp. 233.

A collection of alchemical texts by little-known French authors.

94. Zetzner, Lazarus. *Theatrum chemicum*. 6 vols. Strassburg, 1659-1661.

A collection of 209 alchemical texts. Detailed list of contents in Ferguson, *Biblioteca chemica* (item 9).

EARLY ALCHEMY

95. Bauer, Konrad F. "Beiträge zur Geschichte der alchemistischen Zeichenschrift." *Gutenberg-Jahrbuch*, 27 (1952), 9-13.

Traces the mystical and magical as well as the commonplace origins of alchemical symbols.

96. Béatrice, Guy. *Sainte Anne d'alchimie. Provenance hermétique et tradition chrétienne.* Preface by Eugène Canseliet. Paris: Editions de la Maisnie, 1978. Pp. 271.

Links a Greek tradition of mother-goddesses with a Christian counterpart, Saint Anne, grandmother of Christ, who with her husband Joachim, represents the beginning of the alchemical quest for inner illumination.

97. Browne, C.A. "Rhetorical and Religious Aspects of Greek Alchemy, including a Commentary and Translation of the Poem of the Philosopher Archelaos upon the Sacred Art, Part I." *Ambix*, 2 (1946), 129-136.

The translation of a work by Archelaus, one of a school of Greek rhetorical writers on alchemy of the seventh and eighth centuries.

98. Browne, C.A. "Rhetorical and Religious Aspects of Greek Alchemy." *Ambix*, 3 (1948), 15-25.

Comments on the poem of Archelaus and compares it with the works of Theophrastus, Hierotheus, Heliodorus, and Stephanus.

See item 97.

99. Berthelot, Marcellin. *Collection des anciens alchimists grecs*. 3 vols. Paris, 1888. Reprint. 3 vols. in 1. London: Holland Press, 1963.
100. Berthelot, Marcellin. *Les origines de l'alchimie*. Paris, 1885. Reprint. Brussels: Culture et civilisation, 1966. Pp. xx + 445.
101. Berthelot, Marcellin. *Collection des anciens alchimistes grace. Texte et traduction*. 3 vols. Paris, 1888. Reprint. Osnabrück: Zeller, 1967.
102. Darmstaedter, Ernst. "Per la storia dell'*aurum potabile*." *Archeion (Archivio di storia della scienza)*, 5 (1924), 251-271.

Traces the use made of potable gold in ancient cultures as a remedy or for regeneration. It played no role in Greek learned medicine, but can be found in popular medicine and alchemy in Islam and the West.

103. Eliade, Mircea. *The Forge and the Crucible: The Origins and Structures of Alchemy*. Translated by Stephen Corrin. 2d ed. Chicago: University of Chicago Press, 1978. Pp. 238.

Marks the attitude of reverence toward the materials and apparatus of their respective crafts found among ancient metal workers and alchemical practitioners in the West and in China. A translation of *Forgerons et alchimistes*, 1956.

104. Festugière, A.J. "Alchymica." *L'antiquité classique*, 8 (1939), 71-95.

Surveys Greek alchemy and the Greek MS tradition.

105. Halleux, Robert. "L'affinage de l'or, de Crésus aux premières alchimistes." *Janus*, 62 (1975), 79-102.

Treats techniques of gold refining and other metallurgical processes common to metal workers and alchemists.

106. Halleux, Robert. *Les alchimistes Grecs, I*. Paris: Société d'Éditions "Les Belles Lettres," 1981. Pp. xv + 237.

The first volume is a continuation of the volumes of Berthelot. Contains chiefly the Leiden and Stockholm papyri with extensive notes.

See item 107.

107. Halleux, Robert. *Indices chemicorum Graecorum. I. Papyrus Leidensis, Papyrus Holmiensis*. Rome: Edizione dell'Ateneo, 1983. Pp. xxvii + 135.

Indexes to the previous volume dealing with the Leiden and Stockholm papyri.

See item 106.

108. Hammer-Jensen, Ingebord. *Die älteste Alchemie. Det Kgl. Danske Videnskabernes Selskab, Historisk-Filologiske Meddelelser*, 4. Copenhagen, 1921. Pp. 159.

Surveys Greek alchemy, especially the allegorical works associated with Democritus, Zosimus, Olympiodorus, and Stephanus.

109. Hershbell, Jackson P. "Democritus and the Beginnings of Greek Alchemy." *Ambix*, 34 (1987), 5-20.

Argues there is no real evidence to identify the pseudo-Democritus who authored the alchemical *Physika et mystica* with Bolos of Mendes, nor is there convincing reason to assume that the pseudo-Democritus is the early Greek atomist, Democritus of Abdera.

110. Holmyard, E.J. "An Alchemical Tract Ascribed to Mary the Copt." *Archeion (Archivio di storia della scienza)*, 8 (1927), 161-167.

A translation from Arabic (itself undoubtedly from a Greek original) of "The Letter of the Crown and the Nature of Creation," in which the formation of metals is treated as a generative process. Mary has been the subject of many attributions, for example, the invention of the water-bath.

111. Holmyard, E.J. "Alchemical Equipment." *A History of Technology*, Vol. II. Edited by Charles Singer, E.J. Holmyard, and Trevor I. Williams. London: Oxford University Press, 1956, pp. 731-752.

Traces the development of various types of alchemical apparatus from the Hellenistic period, especially those used for distillation (stills and furnaces).

112. Hopkins, Arthur J. "Transmutation by Color. A Study of Earliest Alchemy." *Studien zur Geschichte der Chemie. Festgabe Edmund O. von Lippmann*. Edited by Julius F. Ruska. Berlin: Springer, 1927.

113. Idel, Moshe. "The Origin of Alchemy according to Zosimos and a Hebrew Parallel." *Revue des études juives*, 145 (1986), 117-124.

Argues parallels between a myth related by Zosimos of an angelic origin of the secret of transmutation and aspects of Hebrew fallen angel myths.

114. Lindsay, Jack. *The Origins of Alchemy in Graeco-Roman Egypt*. New York: Barnes & Noble, 1970. Pp. xi + 452.

Outlines the growth of a Hellenistic alchemical world-view, rooted in craft traditions and Greek physical thought and philosophy, whose goal was an insight into the secret processes of nature, not the making of gold for gain.

115. von Lippmann, Edmund O. "Some Remarks on Hermes and Hermetica." *Ambix*, 2 (1938), 21-25.

A supplementary note to material in von Lippmann's *Entstehung und Ausbreitung der Alchemie*.
See item 61.

116. Mahdihassan, S. "Alchemy in the Light of its Names in Arabic, Sanskrit and Greek." *Janus*, 49 (1960), 79-100.

Traces the etymology of expressions for alchemy found in several cultures that practiced the art.

117. Mahdihassan, S. "Basic Terms of Greek Alchemy in Historical Perspective." *Janus*, 57 (1970), 42-52.

Analyzes the derivation of Hellenistic terms dealing with the synthesis of gold or the preparation of an elixir.

118. Mahdihassan, S. "Alchemy, with the Egg as its Symbol." *Janus*, 63 (1976), 133-153.

Traces the origins of the egg as a symbol of life and fertility in ancient Aryan and Chinese thought.

119. Mahdihassan, S. "Early Terms for Elixir Hitherto Unrecognized in Greek Alchemy." *Ambix*, 23 (1976), 129-133.

Avers that contrary to general opinion, early alchemy recognized several elixirs.

120. Mahdihassan, S. "Alchemy and its Fundamental Terms in Greek, Arabic, Sanskrit and Chinese." *Indian Journal of the History of Science*, 16 (1981), 64-76.

Discusses the origin and relationships of a number of alchemical terms employed in these diverse cultures.

121. Oppenheim, A. Leo. "Mesopotamia in the Early History of Alchemy." *Revue d'assyriologie et d'archéologie*, 60 (1966), 29-45.

Draws attention to two cuneiform fragments containing chemical recipes which predate the Greek tradition.

122. Partington, J.R. "Report of Discussion upon Chemical and Alchemical Symbolism: The Origins of the Planetary Symbols for the Metals." *Ambix*, 1 (1937), 61-64.

Traces the association of the planetary gods with specific metals back to the early Babylonian period.

123. Patai, Raphael. "Maria the Jewess—Founding Mother of Alchemy." *Ambix*, 29 (1982), 175-197.

Treats procedures and doctrines in the Hellenistic alchemical tradition, particularly the apparatus attributed to Mary (possibly third century, A.D.), as reported by Zosimos of Panopolis.

124. Plass, Paul. "A Greek Alchemical Formula." *Ambix*, 29 (1982), 69-73.

Maintains that the theme of immanent causes found in the late Greek philosophical tradition is reflected in Greek alchemical texts.

125. Plessner, Martin. *Vorsokratische Philosophie und griechische Alchemie in arabisch-lateinische Überlieferung, Studien über Text, Herkunft und Charakter der Turba philosophorum*. Wiesbaden: Steiner, 1975. Pp. xii + 143.

Provides a critical evaluation of the philosophical background of the *Turba* and its origins. It was translated from Arabic before the thirteenth century.

126. Rehm, A. "Zur Überlieferung der griechischen Alchemisten." *Byzantinische Zeitschrift*, 39 (1939), 394-434.

Sketches the problems encountered in the study of the transmission of Greek alchemical writings.

127. Ruska, Julius F., ed. *Tabula Smaragdina: Ein Beitrag zur Geschichte der hermetischen Literatur*. Heidelberg: Winter, 1926. Pp. vii + 248.
128. Scarborough, John. "Gnosticism, Drugs, and Alchemy in Late Roman Egypt." *Pharmacy in History*, 13 (1971), 151-157.
129. Sheppard, H.J. "Gnosticism and Alchemy." *Ambix*, 6 (1957), 86-101.

Argues the interconnection between gnostic thought and alchemy in the Hellenistic period; both shared a common mystical, anti-rational outlook and often employed the same symbols. The latter persisted for a long time, as can be seen in the emblem literature.

130. Sheppard, H.J. "Egg Symbolism in Alchemy." *Ambix*, 6 (1958), 140-148.

Shows the importance of the egg in alchemy. A key factor in the creation myths of several religions, the egg played a gamut of roles in alchemy from an interesting reagent to a complex symbol.

131. Sheppard, H.J. "The Redemption Theme and Hellenistic Alchemy." *Ambix*, 7 (1959), 42-46.

Explicates this theme as arising from gnostic thought. The transformation of metals is paralleled by the passage of the human soul toward salvation.

132. Sheppard, H.J. "A Survey of Alchemical and Hermetic Symbolism." *Ambix*, 8 (1960), 35-41.

Discusses schemes of classifying these symbols, including those of modern scholars.

133. Sheppard, H.J. "The Origin of the Gnostic-Alchemical Relationship." *Scientia*, 97 (1962), 146-149.

Traces the intimate connection between the doctrines of early esoteric alchemy and gnostic themes such as the need for an inner illumination leading to redemption.

134. Sheppard, H.J. "The Ouroboros and the Unity of Matter in Alchemy." *Ambix*, 10 (1962), 83-96.

Argues that the serpent, a primitive religious symbol common to the mystery religions of Greece and Rome as well as to early gnostic sects, appears in Hellenistic alchemy devouring its tail—symbolic of cosmic unity.

135. Sheppard, H.J. "Alchemy: Origin or Origins?" *Ambix*, 17 (1970), 69-74.

Argues that it is likely that Hellenistic/Arabic, Chinese and Indian Alchemy arose independently although they share some reciprocal influences.

136. Singer, Dorothea W. "Alchemical Texts Bearing the Name of Plato." *Ambix*, 2 (1946), 115-128.

Lists and describes the alchemical and related texts with Plato's name attached in some capacity.

137. Stapleton, H.E. "The Antiquity of Alchemy." *Ambix*, 5 (1953), 2-43.

Argues that the significance of the number 28, the sequence 1, 3, 5, 8 = 17, as well as the 9-magic square, all found in the Jābirian corpus was known to Greek alchemy

as well as to the Chinese. Opts for a very early age for the origin of alchemy in Mesopotamia.

138. Stapleton, H.E. "The Gnomon." *Ambix*, 6 (1957), 2-9.

Argues that there is a relationship between the nine-celled magic square of the Jābirian alchemical corpus and the Pythagorean gnomon, as well as a connection between the square and the architecture of one type of Babylonian ziggurat.

139. Taylor, F. Sherwood. "A Survey of Greek Alchemy." *Journal of Hellenic Studies*, 50 (1930), 109-139.

Provides an account of early alchemical texts, the substances employed as well as the procedures and apparatus.

140. Taylor, F. Sherwood. "The Alchemical Works of Stephanos of Alexandria, Part I." *Ambix*, 1 (1937), 116-139.

The text and translation of a treatise by the pedagogue, Stephanos, of the seventh century. The work, known to the Arabs, is not concerned with practical procedures.

See item 144.

141. Taylor, F. Sherwood. "The Origins of Greek Alchemy." *Ambix*, 1 (1937), 30-47.

Traces the sources of Greek alchemical traditions, both exoteric and esoteric. Alchemy began in Hellenistic Egypt; there is no evidence of its origin in remote antiquity.

142. Taylor, F. Sherwood. "Report of Discussion upon Chemical and Alchemical Symbolism: Symbols in Greek Alchemical Writings." *Ambix*, 1 (1937), 64-67.

Discusses the symbols and notation found in early western alchemy; many of these were not the exclusive property of the alchemist.

143. Taylor, F. Sherwood. "The Visions of Zosimos." *Ambix*, 1 (1937), 88-92.

A translation with notes on alchemical texts by Zosimus of Panopolis (c. A.D. 300). He was familiar with laboratory procedures, although the visions are highly allegorical.

144. Taylor, F. Sherwood. "The Alchemical Works of Stephanos of Alexandria, Part II." *Ambix*, 2 (1938), 38-49.

Text with translation and commentary of Stephanus's alchemical letter to Theodore.

See item 140.

145. Taylor, F. Sherwood. "The Evolution of the Still." *Annals of Science*, 5 (1945), 185-202.

Traces the development of several types of stills within the context of Hellenistic alchemical technology.

146. Temkin, Owsei. "Medicine and Graeco-Arabic Alchemy." *Bulletin of the History of Medicine*. 29 (1955), 134-155.

Contrasts Greek and Arabic attitudes toward the relationship of medicine and alchemy. In Islam, the two were always closely associated, while among the Greeks, the two traditions remained disparate, at least until 600 A.D.

147. Wellmann, Max. "Die *Physika* des Bolos Demokritos und der Magier Anaxialaos aus Larissa." *Abhandlungen der Preussischen Akademie der Wissenschaften, Phil.-hist. Klasse*, 7 (1928). Pp. 80.

Treats the sources of the pseudo-Democritus (Bolos of Mendes) and his relationship to the first century, B.C., magician, Anaxilaus.

MEDIEVAL ALCHEMY

148. Albertus Magnus. *Libellus de alchimia Ascribed to Albertus Magnus*. Translated by Sister Virginia Heines with a foreword by Pearl Kibre. Berkeley: University of California Press, 1958. Pp. xxii + 79.

Characterizes this work as a collection of clear-cut recipes dealing with the properties of substances and with procedures. Based on observation, it reveals a belief in transmutation.

149. Allard, Guy H. "Réactions de trois penseurs du XIIIe siècle vis-à-vis de l'alchimie." *La science de la nature: Théories et pratiques. Cahiers d'études médiévales*, II. Paris: J. Vrin, 1974, pp. 97-106.

Maintains that the differences in the response of Albertus Magnus, Thomas Aquinas and Roger Bacon to alchemy do not lie in ideological factors but in logical and epistemological divergences.

150. Amadou, Robert. *Raymond Lulle et alchimie. Introduction au codicille avec notes et glossaire*. Paris: La Haute Science, 1953. Pp. 76.

Treats the problems involved in the attribution of alchemical works to Lull, who did not believe in the claims of alchemy.

151. Anawati, Georges C. "Avicenne et l'alchimie." *Oriente e occidente nel medioevo: Filosofia e scienze*. Rome: Accademia Nazionale dei Lincei, 1971, pp. 285-341.

Analyzes four alchemical texts attributed to Avicenna and concludes that three are not authentic. Confirms Ruska's opinion that Avicenna did not believe in transmutation and that the alchemical doctrine of the genuine *De congelatione* is explained by assuming it an early work in which Avicenna wished to test the claims of alchemists.

152. Aquinas, Thomas. *Aurora consurgens: A Document Attributed to Thomas Aquinas on the Problem of Opposites in Alchemy*. Edited with commentary by Marie-Louise von Franz. Translated by R.F.C. Hull and A.S.B. Glover. New York: Pantheon Books, 1966. Pp. xv + 555.

Attributes this work on religious and mystical alchemy to Aquinas, presumably written during his final illness.

153. Armand, Abel. "De l'alchimie arabe à l'alchimie occidentale." *Oriente e occidente nel medioevo: Filosofia e scienze*. Rome: Accademia Nazionale di Lincei, 1971, pp. 251-283.

Traces the transmission of Arabic alchemy to the West, and compares the doctrines of the Greek texts with those of the Jābirian corpus and other Arabic materials.

154. Austin, H.D. "Artephius-Orpheus?" *Speculum*, 12 (1937), 251-254.

Outlines the confusion concerning Artefius in the late thirteenth-century *Composizione del mundo* of Ristoro d'Arezzo.

See items 162, 201.

155. Berthelot, Marcellin. *Introduction à étude de la chimie des anciens et du moyen âge*. Paris, 1889. Reprint. Paris: Libraire des Sciences et des Arts, 1938. Pp. xii + 330.

A collection of documents on the early history of chemical technology and alchemy, including descriptions of apparatus, symbols, and notes on authors and MSS.

156. Berthelot, Marcellin. *Histoire des sciences: La chimie au moyen âge*. 3 vols. Paris, 1893. Reprint. Osnabrück: Zeller, 1967.

Volume I concerns Western Europe, dealing with aspects of chemical and alchemical technology as well as the Latin versions of Arabic alchemical writings.

157. Brehm, Edmund. "Roger Bacon's Place in the History of Alchemy." *Ambix*, 23 (1976), 53-57.

Maintains that to Bacon alchemy was part of an interconnected universal science. He recognized a relationship between alchemy and salvation and believed in an elixir of life.

158. Breiner, Laurence A. "The Career of the Cockatrice." *Isis*, 70 (1979), 30-47.

Discusses the classical origins and career in alchemy of this mythical monster (reptile-cock). The creature appears in alchemy at the end of the twelfth century and played various symbolic roles in the emblem literature (as did related beasts such as the dragon and the salamander).

159. Buntz, Herwig. "Das Buch der heiligen Dreifaltigkeit. Sein Autor und seine Überlieferung." *Anzeiger für deutsches Altertum*, 10 (1972), 150-160.

Speculates as to the identity of the author of this alchemical text, and points out that there are more MS

versions than those known to Ganzenmüller.

See item 176.

160. Carbonelli, Giovanni. "Guglielmo Valpon, medico, alchimista e falsario nel XIV secolo." *Istituto storico italiano dell'arte sanitaria*, 23 (1924), 230-236.
161. Cézard, P. "L'alchimie et les recettes techniques." *Métaux et civilisations*, 1 (1945), 5-10, 41-45.

Treats chemical technology, primarily recipes drawn from alchemical texts.

162. Chevreul, E. "Du traité alchimique d'Artéfius." *Journal des savants*, (1867), 767-784; (1868), 45-59, 153-157, 209-224, 644-655.

Discusses the treatises ascribed to Artefius and the confusion surrounding him (for example, that he was Alfonso X of Spain). Treats the philosophical background to Artefius' work in detail.

See items 154, 201.

163. Crisciani, Chiara. "The Conception of Alchemy as Expressed in the *Pretiosa margarita novella* of Petrus Bonus of Ferrara." *Ambix*, 20 (1973), 165-181.

Argues that alchemy was a genuine science to Petrus Bonus which, however, was ultimately dependent on divine revelation.

164. Crisciani, Chiara. "La 'Quaestio de alchimia' fra duecento e trecento." *Medioevo*, 2 (1976), 119-168.

Argues that reactions to alchemy found in Islam were reflected in the Latin West with the transmission of Arabic materials. However, western alchemy also displayed a character of its own as revealed in several works in the question genre.

165. Crisciani, Chiara, and Claude Gagnon. *Alchimie et philosophie au moyen âge: Perspectives et problèmes*. Montreal: L'Aurore, 1980. Pp. 83.

Argues that a more sophisticated interpretation of the alchemical literature and of medieval alchemy's doctrines would reveal that the presumed gulf between scholastic philosophy and alchemy may be over-emphasized.

166. Darmstaedter, Ernst. "*Liber misericordiae Geber*. Eine lateinischen Übersetzung des grosseren *Kitāb alrahma*." *Archiv für Geschichte der Medizin*, 17 (1925), 181-197.

Provides the text of a thirteenth-century Latin translation of this work.

167. Darmstaedter, Ernst. "*Liber claritatis*." *Archeion (Archivio di storia della scienza)*, 6 (1925), 319-330; 7 (1926), 257-265; 8 (1927), 95-103, 214-226; 9 (1928), 61-80, 191-208, 462-482.

Provides the Latin text of this work attributed to Jabir ibn Ḥayyān.

168. Darmstaedter, Ernst. *Die Alchemie des Geber*. Berlin, 1922. Reprint. Wiesbaden: Sändig, 1969. Pp. viii + 202.

169. Diepgen, Paul. "Studien zu Arnald von Villanova. III. Arnald und die Alchemie." *Archiv für Geschichte der Medizin*, 3 (1910), 369-396.

Points out the difficulty in determining Arnald's true position vis-à-vis alchemy and of deciding his actual authorship among the many alchemical works attributed to him.

170. Diepgen, Paul. *Das Elixir, die köstlichste der Arzneien*. Ingelheim: Boehringer, 1951. Pp. 45.

171. Fabricius, Johannes. *Alchemy. The Medieval Alchemists and their Royal Art*. Copenhagen: Rosenkilde & Bagger, 1976. Pp. 228 + 402 illus.

Treats Western alchemy as a soteriological quest, with interpretations stemming from depth psychology.

172. Flamel, Nicolas. *Le livre des figures hiéroglyphiques. Le sommaire philosophique. Le désir désire*. Introduction by René Alleau and a historical study of Nicolas Flamel by Eugène Canseliet. Glossary and bibliographical notes by Maxime Préaud. Paris: de Noël, 1970. Pp. 230.
173. Flamel, Nicolas. *Oeuvres*. Preface by Elie-Charles Flammand. Paris: Belfond, 1973. Pp. 207.
174. Flamel, Nicolas. *Alchemical Hieroglyphics*. Translated from French in 1624 by Eirenaeus Orandus. Gillette, N.J.: Heptangle Books, 1980. Pp. xxi + 89.
175. Fück, J.W. "The Arabic Literature on Alchemy According to an-Nadīm (A.D. 987)." *Ambix*, 4 (1949), 82-143.

A translation of the tenth part of the *al-Fihrist*, an-Nadīm's dictionary of prominent Islamic scientists. While the *Fihrist* was unknown in medieval Europe, this section contains some names familiar in the Latin West. An-Nadīm himself had no high opinion of alchemy.

176. Ganzemüller, Wilhelm. "Das Buch der heiligen Dreifaltigkeit." *Archiv für Kulturgeschichte*, 29 (1939), 93-146.

Analyzes the complex symbolism of this profusely illustrated and oldest German alchemical work (1417-1419). The anonymous author was a cleric.

See item 159.

177. Ganzenmüller, Wilhelm. "Ein alchemistische Handschrift aus der zweiten Hälfte des 12. Jahrhunderts." *Sudhoffs Archiv für Geschichte der Medizin und der Natur-*

wissenschaften, 39 (1955), 43-55.

The text and translation of a short, very early alchemical text. The work is dependent on al-Rāzi, is part of a larger treatise and contains directions for a beginner in the art.

178. Ganzemüller, Wilhelm. *Die Alchemie im Mittelalter*. Paderborn, 1938. Reprint. Hildesheim: Olms, 1967. Pp. 240.

Surveys various aspects of alchemy: treatises, education of the alchemist, alchemical theory and practice, the connection between alchemy and religion and the relation of the alchemist to society.

179. Geber. *The Works of Geber*. Translated by Richard Russell. Reissued with an introduction by E.J. Holmyard. London: J.M. Dent, 1928. Pp. xxiii + 264.

A reissue of the translation made in 1678 of *The Sum of Perfection* and other alchemical works ascribed to the Arabic alchemist Jābir ibn Ḥayyān.

180. Goltz, Dietlinde, Joachim Telle, and Hans J. Vermeer, eds. *Der alchemistische Traktat von der Multiplikation von Pseudo-Thomas von Aquin*. *Sudhoffe Archiv: Zeitschrift für Wissenschaftsgeschichte*. Beiheft 19. Wiesbaden: Steiner, 1977. Pp. vi + 173.

Discusses the sources and content of this anonymous fourteenth-century treatise which draws from a number of Arabic and European sources. The work deals mostly with amalgams. Includes old German and Italian versions as well as a German translation of the Latin text.

181. Haage, Bernhard D. "Das alchemistische Bildgedicht vom 'nackten Weib' in seiner bisher ältesten Überlieferung." *Centaurus*, 26 (1982-1983), 204-214.

Describes problems in dating this German illustrated alchemical poem. The mid-fifteenth century text is considered the oldest version.

182. Halleux, Robert. *Les textes alchimiques. Typologie des sources du moyen âge occidental*. Fasc. 32. Turnhout, Belgium: Brepols, 1979. Pp. 153.

Reviews facets of the alchemical enterprise in the form of a bibliographical essay. Covers definitions, origins, types of writing and problems encountered by scholars. Also surveys alchemy in connection with social considerations, techniques, religion, art, and literature.

183. Halleux, Robert. "Albert le Grand et l'alchimie." *Revue des sciences philosophiques et théologiques*, 66 (1982), 57-80.

184. Halleux, Robert. "Le mythe de Nicolas Flamel ou les mécanismes de la pseudépigraphie alchimique." *Archives internationale d'histoire des sciences*, 33 (1983), 234-255.

Explores the development of a Flamel "tradition," starting with the tale of Flamel and the mysterious illustrated text which began his alchemical reputation.

185. Halleux, Robert. "L'alchimiste et l'essayeur." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 277-291.

Contrasts the attitudes of the alchemists vis-à-vis the artisans who conducted tests for the purity of substances. The assayists were familiar with alchemy; they were sceptical but not hostile. Alchemists were aware of tests for gold;

rigorous application of these techniques would have been fatal to their claims.

186. Hamarneh, Sami K. "Arabic-Islamic Alchemy—Three Intertwined Stages." *Ambix*, 29 (1982), 74-87.

Discusses three interconnected themes in Arabic alchemy: (1) an early experimental approach with transmutation as its goal; (2) a mystical, occult view; (3) an application of alchemy to medicine.

187. Hartlaub, G.F. "*Signa Hermetis*." *Zeitschrift des deutschen Vereins für Kunstwissenschaft*, 4 (1937), 93-112, 114-162.

Describes two well-known, beautifully illustrated MS on allegorical alchemy, the *Buch der heiligen Dreifaltigkeit* (c. 1400) and the later *Splendor solis* attributed to Salomon Trismosin.

188. Haschni, Mohammed Yahia. "The Beginning of Arab Alchemy." *Ambix*, 9 (1961), 155-161.

Traces the origin of alchemy in Islam to eight-century contacts of Arabs with other Mediterranean peoples.

189. Haskins, Charles H. "The *Alchemy* Ascribed to Michael Scot." *Isis*, 10 (1928), 350-359.

Analyzes a thirteenth-century treatise prepared at the court of Frederick II. It is attributed to Scot and reveals no inconsistencies with his known ideas.

190. Heym, Gerard. "Al-Rāzi and Alchemy." *Ambix*, 1 (1938), 184-191.

Argues that al-Rāzi's most important work, the *Secret of Secrets*, is experimental in nature. Its theoretical base depended on both the four- and three-element theories of

matter; the purpose of alchemy was the improvement of base metals or stones by an elixir.

191. Hutin, Serge. *La vie quotidienne des alchimistes*. Paris: Hachette, 1977. Pp. 247.

Treats the sources of alchemical doctrines, describes laboratory processes and relates the alchemist's work to society at large, particularly in the Middle Ages.

192. Jābir ibn Ḥayyān. "*Liber divinitatis de LXX*." *Archéologie et Histoire des Sciences*. Edited by M. Berthelot. *Mémoires de l'Académie des Sciences*, 2e sér., 49 (1906), 310-363.

An alchemical work attributed to Jabir translated by Gerard of Cremona.

193. Jābir ibn Ḥayyān. *Dix traités d'alchimie: Les dix premiers traités du Livre des soixante-dix*. Translated with commentary by Pierre Lory. Paris: Sinbad, 1983. Pp. 318.

194. Josten, C.H. "The Text of John Dastin's 'Letter to Pope John XXIII.'" *Ambix*, 4 (1949), 34-51.

The text and translation of an alchemical work by Dastin.

See item 242.

195. Kibre, Pearl. "The *Alkimia minor* Ascribed to Albertus Magnus." *Isis*, 32 (1940), 267-300.

Points out that this manual, devoid of theory, is part of or a supplement to the longer *Semita recta* or *Alkimia*; the latter may be a genuine Albertian treatise.

196. Kibre, Pearl. "An Alchemical Tract Attributed to Albertus Magnus." *Isis*, 35 (1944), 303-316.

Maintains that despite its similarities to Albert's work on minerals, this tract is unlikely to be genuine. It makes no reference to Latin authorities and is dependent on the sulfur-mercury theory of metals.

197. Kibre, Pearl. "The *Occultis naturae* Attributed to Albertus Magnus." *Osiris*, 11 (1954), 23-39.

Asserts that this fourteenth-century alchemical treatise, a survey based on Arabic notions, bears little resemblance to other alchemical works attributed to Albert.

See item 198.

198. Kibre, Pearl. "Albertus Magnus, *De occultis naturae*." *Osiris*, 13 (1956), 157-183.

Provides the text of the alchemical treatise which reflects Arabic sources and is unlikely to be by Albert.

See item 197.

199. Kibre, Pearl. "Albertus Magnus on Alchemy." *Albertus Magnus and the Sciences: Commemorative Essays*. Edited by James A. Weisheipl. Toronto: Pontifical Institute of Mediaeval Studies, 1980, pp. 187-202.

Argues that Albert was familiar with alchemical authorities and procedures. He accepted the possibility of transmutation and subsequently had many works ascribed to him. These lack the mystical elements Albert himself deplored.

200. Kraus, Paul. *Jābir ibn Ḥayyān*. 2 vols. in 1. Cairo: Imprimerie de la Institut Français d'Archéologie Orientale, 1942, 1943.

Vol. I treats the Arabic writings by Jābir, primarily on alchemy; Vol. II analyzes the principal ideas and their

sources in Greek thought. The works are not of a single individual, but of a school. Two were translated into Latin, the *Liber de LXX* and the *Liber misericordiae*.

201. Levi della Vida, G. "Something More about Artefius and His *Clavis sapientiae*." *Speculum*, 13 (1938), 80-85.

Treats Artefius's treatise as an example of the Arabic alchemical tradition in Western Europe.

See items 154, 162.

202. de Luanco, José R. *Ramon Lull considerado como alquimista*. Barcelona: J.J. Roviralta, 1870. Pp. 50.

203. Lull, Raymond. *Le codicille de Raymond Lulle*. Translated from Latin by Leonce Bonysson. Paris: La Haute Science, 1953. Pp. 175.

A translation of the 1563 edition.

204. Morienus. *A Testament of Alchemy, Being the Revelations of Morienus . . . to Khalid ibn Yazid*. Edited and translated by Lee Stavenhagen. Hanover: University Press of New England, 1974. Pp. viii + 76.

Presents the thirteenth-century Latin version of the *Testament* with a discussion of the MS tradition. Morienus purportedly introduced alchemy to Islam.

See item 239.

205. Newman, William. "An Introduction to Alchemical Apparatus in the Late Middle Ages." *Technologia*, 6 (1983), 82-92.

206. Newman, William. "The Genesis of the *Summa perfectionis*." *Les archives internationales d'histoire des sciences*, 35 (1985), 240-302.

Provides evidence to show that the *Summa perfectionis*

ascribed to Geber and a *Theorica et practica* on alchemy known to be by Paul of Taranto are likely by the same author, thus adding weight to the probability of Paul of Taranto's authorship of the *Summa*. An appendix gives notice of a formerly unknown Latin text of a work ascribed to Jābir ibn Ḥayyān.

See item 207.

207. Newman, William. "New Light on the Identity of 'Geber.'" *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften*, 69 (1985), 76-90.

Suggests a solution to the "Geber-problem," that is, the identity of the author of the medieval Latin *Summa perfectionis*, supposedly originally by Jābir ibn Ḥayyān by pointing out similarities between passages in the *Summa* and a *Theorica et practica* by a late thirteenth-century Franciscan, Paul of Taranto.

See item 206.

208. Newman, William. "Technology and Alchemical Debate in the Late Middle Ages." *Isis*, 80 (1989), 423-445.

Argues that despite the secondary position allotted to the mechanic arts in the context of medieval scholasticism, alchemists of the late Middle Ages had to develop a defense of technology which stressed man's power over nature. Alchemy in the late medieval period met with growing hostility, especially from religious authorities.

209. Nunemaker, J.H. "Notas sobre la alquimia en el 'Lapidario' de Alfonso X." *Revista de filología española*, 16 (1929), 161-168.

Discusses the fortunes of alchemy in medieval Spain and points out the allusions to alchemy in the *Lapidario*.

210. Nunemaker, J.H. "Nota adicional sobre la alquimia en los lapidarios Alfonsinos." *Revista de filología española*, 18 (1931), 261-262.

Reports additional material on alchemy in a MS of the *Tabula* to the *Lapidario*.

211. Obrist, Barbara. *Les débuts de l'imagerie alchimique, XIVe-XVe siècles*. Paris: Le Sycomore, 1982. Pp. 328.

Analyzes (but not from a Jungian perspective) the illustrations found with two vernacular alchemical works, the *Book of the Secrets of My Lady Alchemy* and the *Book of the Holy Trinity*, as well as the Latin *Aurora consurgens*. Points out that alchemical pictures increased at the expense of the text from the end of the Middle Ages as alchemy became more esoteric and that despite the frequent usage of some themes, it is not possible to speak properly of an alchemical iconography.

212. Pagel, Walter. "Paracelsus: Traditionalism and Medieval Sources." *Medicine, Science and Culture*. Edited by Lloyd G. Stevenson and Robert P. Multhauf. Baltimore: Johns Hopkins Press, 1968, pp. 50-75.

Assesses influences of the medieval alchemical tradition, particularly that of the elusive Archelaus (often associated with Hermes by Paracelsus) on key Paracelsian ideas as well as medical, experimental, and gnostic doctrines derived from Konrad of Megenburg's *Buch der Natur*.

213. Paneth, Fritz. "Über eine alchemistische Handschrift des 14. Jahrhundert und ihr Verhältnis zu Albert Magnus Buch *De mineralibus*." *Archiv für Geschichte der Naturwissenschaften und der Technik*, 12 (1929-1930), 33-45, 408-413.

Discusses an anonymous treatise very similar to the *De mineralibus* and concludes that Albert is also its author.

214. Partington, J.R. "Albertus Magnus on Alchemy." *Ambix*, 1 (1937), 3-20.

Describes the chemical/alchemical works attributed to Albert, and concludes that he did believe in the possibility of transmutation. Albert was familiar with the alchemical literature of his time and had first-hand experience of laboratory procedures.

215. Partington, J.R. "The Chemistry of Rāzi." *Ambix*, 1 (1938), 192-196.

Discusses the materials, apparatus and operations employed by al-Rāzi in his chemical/alchemical experiments.

216. Petai, Raphael. "Raymund de Tarrega: Marrano, Heretic and Alchemist." *Ambix*, 35 (1988), 14-30.

Maintains that de Tarrega was actually the author of some alchemical texts ascribed to Raymond Lull.

217. Pattison Muir, M.M. "Roger Bacon: His Relations to Alchemy and Chemistry." *Roger Bacon Essays*. Edited by A.G. Little. Oxford: Clarendon Press, pp. 285-320.

Argues that Bacon accepted a practical alchemy which stressed observation and experiment, especially for the making of elixirs to either perfect metals or to confer health and long life.

218. Payen, J. "*Flos florum et Semita semite: Deux traités d'alchimie attribués à Arnaud de Villeneuve.*" *Revue d'histoire des sciences*, 12 (1959), 289-300.

Analyzes and compares these treatises which are among those that have circulated under Arnald's name. Confirms that they are in large part identical and doubts that either is by Arnald.

219. Periera, Michela. "Alchimia medievale: Alcuni studi recenti." *Annali dell'Istituto e Museo di Storia della Scienza di Firenze*, 9 (1984), 89-98.

Outlines recent scholarship on medieval alchemy (Halleux, Crisciani, Gagnon, Obrist, among others).

220. Petrus Bonus. *The New Pearl of Great Price*. Edited by A.E. Waite. London, 1894. Reprint. London: V. Stuart, 1963. Pp. xi + 441.

A translation of the *Pretiosa margarita novella*.

221. Putscher, Marielene. "Das *Buch der heiligen Dreifaltigkeit* und seine Bilder in Handschriften des 15. Jahrhunderts." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 151-178.

Arranges and reviews the fifteenth-century MS tradition of this oldest German alchemical work based on iconographic evidence from the miniatures and suggests that the latter can serve as sources of historical and cultural information.

222. *Rosarium philosophorum. Le rosaire des philosophes*. Edited and translated by Etienne Perrot. Paris: Librairie des Medicis, 1973. Pp. 238.

A French edition of an alchemical work written in the first half of the fourteenth century; printed in 1550.

223. Ruska, Julius F. "Der Salmiak in der Geschichte der Alchemie." *Zeitschrift für angewandte Chemie*, 41 (1928), 1321-1324.

Traces the long history of the manufacture and use of ammonium chloride in Asia and in the work of al-Rāzi.

224. Ruska, Julius F. "Alchemie in Spanien." *Zeitschrift für angewandte Chemie*, 46 (1933), 337-340.

Points out the importance of Moslem Spain in the transmission of Greek and Arabic science and alchemy to the European West. As is not the case of scientific materials, the authors and translators of Arabic alchemical texts are mostly unknown; false attributions abound.

225. Ruska, Julius F. "Die Alchemie des Avicenna." *Isis*, 21 (1934), 14-51.

Argues that in many of his works Avicenna is revealed as hostile to alchemy; the many works attributed to him are not genuine. These pseudo-Avicennian treatises are mostly of Spanish-Arabic origin although some are Latin originals.

226. Ruska, Julius F. "Über die dem Avicenna zugeschriebenen alchemistischen Abhandlungen." *Forschungen und Fortschritte*, 10 (1934), 293.

Concludes that most of the alchemical texts attributed to Avicenna, whether Arabic or Latin, are not by him.

227. Ruska, Julius F. "Über die Quellen des *Liber claritatis*." *Archeion (Archivio di storia della scienza)*, 16 (1934), 145-167.

Identifies the sources of this alchemical work and concludes it is not by Jābir ibn Ḥayyān, but a compiler of Italian origin.

228. Ruska, Julius F. "Der Urtext der *Tabula chemica*." *Archeion (Archivio di storia della scienza)*, 16 (1934), 273-283.

Attempts to arrive at the original text of this treatise purporting to reveal ancient Egyptian wisdom and attributed to ibn Umail, known in Europe as Senior Zadith.

229. Ruska, Julius F. "Übersetzung und Bearbeitungen von al-Rāzi's Buch *Geheimnis der Geheimnisse*." *Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin*, 4 (1935), 1-87.

230. Ruska, Julius F., ed. *Das Buch der Alaune und Salze. Ein Grundwerk der spätlateinischen Alchemie*. Berlin: Verlag Chemie, 1935. Pp. 127.

The text and translation of a work, practical in emphasis, with few mystical elements. It is attributed to al-Rāzi, but was compiled in Moslem Spain in the eleventh century.

231. Ruska, Julius F. "Studien zu Muhammad ibn Umail. . . ." *Isis*, 24 (1935-1936), 310-342.

Traces the sources of the treatise of ibn Umail known in western Europe as the *Tabula chemica* of Senior Zadith. The work presents an allegorical alchemy similar to the *Turba philosophorum*.

232. Ruska, Julius F. "Studien zu den chemisch-technischen Rezeptsammlungen des *Liber sacerdotum*." *Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin*, 5 (1936), 83-125.

233. Ruska, Julius F. "Pseudoepigraphische Rasis-Schriften." *Osiris*, 7 (1939), 31-93.

Attempts the difficult task of tracing the provenance of Latin texts ascribed to al-Rāzi.

234. Ruska, Julius F., ed. *Turba philosophorum: Ein Beitrag zur Geschichte der Alchemie*. Berlin, 1931. Reprint. Berlin: Springer, 1970. Pp. x + 368.

235. Singer, Dorothea W. "The Alchemical *Testament* Attributed to Raymond Lull." *Archeion (Archivio di storia della*

scienza), 9 (1928), 43-52.

Concludes that the *Testamentum* is not by Lull. The Catalan mystic has had many alchemical works ascribed to him although he did not believe in transmutation.

236. Singer, Dorothea W. "Michael Scot and Alchemy." *Isis*, 13 (1929-1930), 5-15.

Reports another MS version of the *Alchemy* ascribed to Scot; the text is given in an appendix.

237. Singer, Dorothea W. "Alchemical Writings Attributed to Roger Bacon." *Speculum*, 7 (1932), 80-86.

Discusses the views on alchemy expressed in genuine works by Bacon, a necessary caution in light of the many alchemical texts ascribed to him. Bacon did believe in the possibility of transmutation.

238. Stapleton, H.E., Hidāyat Ḥusain, R.F. Azo, and G.L. Lewis. "Two Alchemical Treatises Attributed to Avicenna." *Ambix*, 10 (1962), 41-82.

Provide the abridged Latin text of a work, the *Avicennae ad Hasen regem epistola de recta*, ascribed to Avicenna.

239. Stavenhagen, Lee. "The Original Text of the Latin *Mori-enus*." *Ambix*, 17 (1970), 1-12.

Summarizes the MS tradition and discusses issues as to the work's origin (Arabic or European).
See item 204.

240. Telle, Joachim. "Ein altdeutsches Spruchgedicht nach der *Turba philosophorum*." *Zeitschrift für deutsche Philologie*, 95 (1976), 416-443.

Provides the text and discussion of an epigrammatic

poem giving instruction on the preparation of the Philosopher's Stone.

241. Telle, Joachim. *Sol und Luna. Literar- und alchemiegeschichtliche Studien zu einen altdeutschen Bildgedicht.* Hürtgenwald: Joachim Pressler Verlag, 1980. Pp. x + 273.

An edition of an illustrated Old German alchemical poem (ca. 1400; author unknown). The illustrations depict a major alchemical theme—the alchemical marriage, a sun/moon, king/queen, male/female dualism from whose union arises the stone.

242. Theissen, Wilfred R. "John Dastin's Letter on the Philosopher's Stone." *Ambix*, 33 (1986), 78-87.

Provides the Latin text with translation of one of the three versions of this work.
See item 194.

243. Thomas, Phillip D. "The Alchemical Thought of Walter of Odington." *Actes du XIIe congrès international d'histoire des sciences*, IIIA, Paris, 1968. Paris: Blanchard, 1971, pp. 141-144.

Maintains that in his alchemical treatise, the *Icocedron*, Walter tried to apply the doctrine of the intension and remission of qualities to the composition of the elements and to chemical change.

244. Thomson, S.H. "The texts of Michael Scot's *Ars alchemie*." *Osiris*, 5 (1938), 523-559.

Compares three MSS of a treatise ascribed to Scot and concludes that part of it may be by him.

245. Thorndike, Lynn. "Seven Salts of Hermes." *Isis*, 14 (1930), 187-188.

Discusses this text ascribed to Hermes which lists seven "magisteria" (salts).

246. Titley, A.F. "Report of Discussion upon Chemical and Alchemical Symbolism: The Macrocosm and the Microcosm in Mediaeval Alchemy." *Ambix*, 1 (1937), 67-69.

Points out the significance of this ubiquitous and powerful theme as it appears in alchemical illustrations.

247. *Turba philosophorum*. Translated by Arthur Edward Waite. New York: Weiser, 1970. Pp. iv + 211.

Facsimile reprint of the 1896 edition.

248. Weyer, Jost. "Die Bedeutung des Symbols in der mittelalterlichen Alchemie." *Die vielen Namen Gottes*. Edited by Meinold Krauss and Johannes Lundbeck. Stuttgart: Steinkopf, 1974, pp. 277-285.

Discusses the symbolic portrayal of the spiritual aspect of alchemy as revealed in the medieval emblem literature. Represents the Jungian view of alchemy as an inner process merely reflected in the external experimental side.

249. Wilson, C. Anne. "Jābirian Numbers, Pythagorean Numbers and Plato's *Timaeus*." *Ambix*, 35 (1988), 1-13.

Argues a connection between Greek number theory and the use of numbers in Jābirian alchemy as well as in Plato's treatment of the four elements.

250. Wilson, W.J. "An Alchemical MS by Arnaldus de Bruxella." *Osiris*, 2 (1936), 220-405.

Describes the content of this MS by Arnald which contains material on alchemical equipment, the stone and

the elixir as well as recipes for metal-working, the treatment of glass, and book-making.

251. Winderlich, R. "Die *Tabula smaragdina*." *Zeitschrift für angewandte Chemie*, 39 (1926), 1411-1413.

Provides a brief account of the *Emerald Table* and of Ruska's research on it.

252. de Ysio, Bonaventura. *Le antiche vie dell'alchimia dall'opera medievale di Bonaventura d'Iseo. Sulle natura e la generazione dei metalli e loro virtù*. Introduction and commentary by Vittorio di Cesare. Rome: Atanor, 1973. Pp. 125.

A translation of the *Liber Compostella*.

253. Ziegler, Gilette. *Nicolas Flamel*. Paris: Culture, Art, Loisirs, 1971. Pp. 287.

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254. Basil Valentine. *Les douze clefs de la philosophie*. Translation, introduction, notes, and explanation of the illustrations by Eugène Canseliet. Paris: Les Editions de Minuit, 1956. Pp. 264.

255. Basil Valentine. *Le Char triomphal de l'antimoine*. Introduction and bibliographical notes by Sylvain Matton. Preface by Joachim Tancky. Translated by François Sauvin. Paris: Retz, 1977. Pp. 252.

256. Biedermann, Hans. *Materia prima: Eine Bildersammlung zur Ideengeschichte der Alchemie*. Graz: Verlag für Sammler, 1973. Pp. 211.

Provides a collection of black and white illustrations with commentary drawn from the emblem literature as examples of allegorical alchemy.

257. Bolton, Henry C. *The Follies of Science at the Court of Rudolf II, 1576-1612*. Milwaukee: Pharmaceutical Review Publishing Co., 1904. Pp. 217.

Relates how the court at Prague of the eccentric emperor Rudolf, patron of art, science, and the occult, extended a welcome to a number of well-known alchemists including John Dee, Edward Kelley, Michael Sendivogius, and Michael Maier (who served Rudolf as private secretary and physician).

258. Buntz, Herwig. *Deutsche alchemistische Traktate des 15. und 16. Jahrhunderts*. Munich: Verlag Uni-Druck, 1969. Pp. 228.

259. Debus, Allen G. *The English Paracelsians*. New York: Franklin Watts, 1966. Pp. 222.

Argues that the complex of notions held by Paracelsus to whom alchemy/chemistry was basic to the structure of the universe and to man at first found few sympathizers in Elizabethan England. However, his introduction of chemically based medicine did find support among some English physicians.

260. Debus, Allen G. "Renaissance Chemistry and the Work of Robert Fludd." *Ambix*, 14 (1967), 42-59.

Argues that the Hermetic-Paracelsian view of nature represented by the mystical alchemist Fludd is a valuable part of the history of chemistry, although often ignored as "unscientific."

261. Debus, Allen G. "Mathematics and Nature in the Chemical Texts of the Renaissance." *Ambix*, 15 (1968), 1-28.

Traces the significance of mathematics in the study of nature in the work of Paracelsus, Fludd, and their opponents.

262. Duval, Paulette, ed. *La turba philosophorum Gallica. Edition de la version française de la Turba philosophorum d'après le manuscrit de la Bibliothèque Nationale. Les Cahiers de Fontenay*, 33. Paris, 1983.

An edition with commentary of a French *Turba* from a unique Bibliothèque Nationale MS (dated 1537) and possibly translated from Castilian.

263. Eis, Gerhard. "Von der Rede und dem Schweigen der Alchemisten." *Vor und nach Paracelsus*. Stuttgart: Gustav Fischer Verlag, 1965, pp. 51-73.

Treats problems met in alchemical writings such as the use of religious symbolism and the frequency of obscure

metaphors, compounded by the alchemists' view of the art as too sacred to be profaned by publication.

This chapter also appeared in *Deutsche Vierteljahrsschrift für Literaturwissenschaft und Geistesgeschichte*, 25 (1951), 415-435.

264. Figala, Karin. "Alchemical Interpretation of the Theme Lion-Dragon in a Drawing by Leonardo da Vinci." *Physics*, 14 (1972), 349-356.

Discusses the symbolic meaning of a drawing in the Uffizi at Florence in which the dragon wins a conflict with the lion, but dies after eating the latter.

265. Figala, Karin. "Tycho Brahes Elixier." *Veröffentlichungen des Forschungsinstituts des Deutschen Museums für die Geschichte der Naturwissenschaften und der Technik*, 13 (1972), 139-176.

Introduces Tycho's work on elixirs, usually neglected by scholars, and shows that he was influenced by Paracelsus's medical and chemical doctrines.

266. Figala, Karin, and Ulrich Neumann. "Ein früher Brief Michael Maiers (1568-1622) an Heinrich Rantzau (1526-1598): Einführung, lateinischer Originaltext und deutsche Übersetzung." *Mathemata: Festschrift für Helmuth Gericke*. Edited by Menso Folkerts and Uta Lindgren. Stuttgart: Steiner, 1985, pp. 327-357.

Text of a letter by the alchemist Maier, then a student at Rostock, which provides the earliest personal information concerning Maier's origins. Maier's father had been in Rantzau's service.

This article is also in *Archives internationales d'histoire des sciences*, 35 (1985), 303-329.

267. French, Peter J. *John Dee. The World of an Elizabethan Magus*. London: Routledge & Kegan Paul, 1972. Pp. x + 243.

Traces the life, career, and manifold interests of this English Renaissance polymath who enjoyed the patronage of Elizabeth.

268. Gelius, Rolf. "Neue Erkenntnisse in der Frage der 'Lau-sitzer Alchimistenbriefe.'" *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften*, 71 (1987), 62-77.

Argues that Gregor Klett (1467-1513), lawyer and secretary of the city council of Görlitz was the author of a series of alchemical letters written in the period 1496-1506/7.

269. Geoghegan, D. "A Licence of Henry VI to Practice Alchemy." *Ambix*, 6 (1957), 10-17.

Describes a document consisting of a petition to the king to grant a licence to practice alchemy, a draft of the Letters Patent, and a note to the effect that the king assented to the petition.

270. Gregory, Joshua C. "Chemistry and Alchemy in the Natural Philosophy of Sir Francis Bacon, 1561-1626." *Ambix*, 2 (1938), 93-111.

Reports on the chemical/alchemical actions scattered throughout Bacon's writings.

271. Guinsburg, Arlene Miller. "Henry More, Thomas Vaughan, and the Late Renaissance Magical Tradition." *Ambix*, 27 (1980), 36-58.

Argues that Vaughan's alchemical notions regarding creation had a decided influence on More's thought.

272. Gwyn, David. "Richard Eden: Cosmographer und Alchemist." *Sixteenth Century Journal*, 15 (1984), 13-34.

Discusses the career of this sixteenth-century figure known chiefly as a translator of cosmological and navigational works. He held a position at the mint where his alchemical interests led him to attempt to produce an unlimited amount of specie.

See item 277.

273. Halleux, Robert. "La nature et la formation des métaux selon Agricola et ses contemporains." *Revue d'histoire des sciences*, 27 (1974), 211-222.

Maintains that Agricola introduced new notions regarding metals, he added new metals to the list stemming from antiquity, did not agree with Aristotle's theory of the formation of metals, and criticized alchemical doctrines.

274. Halleux, Robert. "Il ruolo delle fonti antiche nell'ermetismo romano del XVI secolo: Alchimia e *libri naturales*." *La città dei segreti: Magia, astrologia e cultura esoterica a Roma (XV-XVIII)*. Edited by Fabio Troncarelli. Milan: Angeli, 1985.

275. Hartung vom Hoff, Caspar. *Das Kunstbüchlein des Alchemisten Caspar Hartung vom Hoff*. Edited by Bernard Haage. Göttingen: Kümmerle, 1975. Pp. 141.

An edition of a German alchemical text from the mid-sixteenth century taken from a MS at Kassel. The work was previously unknown, having been confused with a major treatise by the author. Details concerning his life are very meager.

276. Heym, Gerard. "Report of Discussion upon Chemical and Alchemical Symbolism: Some Alchemical Picture Books." *Ambix*, 1 (1937), 69-75.

Discusses the salient characteristics of the large emblem

literature containing symbolic representations of alchemical themes—for example, Michael Maier's *Atalanta fugiens*.

277. Kitching, Christopher. "Alchemy in the Reign of Edward VI: An Episode in the Careers of Richard Whalley and Richard Eden." *Bulletin of the Institute of Historical Research, University of London*, 44 (1971), 308-315.

Maintains that Whalley, a minor figure of the reign of Edward VI, employed Eden as an alchemist for gain. The latter's failure to produce transformation was a source of displeasure.

See item 272.

278. Lange, Erwin F. "Alchemy and the Sixteenth-Century Metallurgists." *Ambix*, 13 (1966), 92-95.

Points out that several sixteenth-century metal workers rejected the possibility of transmutation.

279. Lensi Orlandi, Giulio. *Cosimo e Francesco de' Medici, alchimisti*. Florence: Nardini, 1978. Pp. 294.

Argues that Cosimo and his son, Francesco, sixteenth-century granddukes of Tuscany, were secret devotees of alchemy. Adduces evidence drawn from correspondence and particularly from descriptions of the art works commissioned by the dukes.

280. Linden, Stanton J. "Francis Bacon and Alchemy: The Reformation of Vulcan." *Journal of the History of Ideas*, 35 (1974), 547-560.

Argues that Bacon had views on the operation of nature compatible with alchemy and showed objectivity toward its goals.

281. London, J.K., ed. *Splendor solis: Alchemical Treatises of Solomon Trismosin*. . . . London: Kegan Paul, Trench,

Trubner, 1921. Pp. 103.

282. Mino, Gabriele. "L'alchimista Massimiliano Palombara: Un rosacroce nella Roma controriformista." *La città dei segreti: Magia, astrologia e cultura esoterica a Roma (XV-XVIII)*. Edited by Fabio Troncarelli. Milan: Angeli, 1985.

283. Morrison, Ian R. "François de la Noue et l'alchimie." *Bibliothèque d'humanisme et Renaissance, travaux et documents*, 44 (1982), 587-599.

Summarizes the opinions expressed in the *Discours politiques et militaires* (composed in the 1580s). De la Noue was forced to explain alchemy so as to criticize it.

284. Morys, Peter. "Leonhard Thurneissers *De transmutatione veneris in solem*." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 85-95.

Provides a summary of this 1584 alchemical MS, the only one of Thurneisser's works dealing specifically with transmutation by this expert in chemical technology and self-taught doctor who served as physician to the Elector of Brandenburg. Points out the text's straightforward, non-mystical nature; Thurneisser may not have really believed transmutation possible.

285. Müller-Jahncke, Wolf-Dieter. "The Attitude of Agrippa von Nettesheim (1486-1535) Towards Alchemy." *Ambix*, 22 (1975), 134-150.

Traces Agrippa's opinions vis-à-vis alchemy from his youthful acknowledgment of the possibility of transmutation to a mature scepticism often satirically expressed.

286. Nierenstein, M., and P.F. Chapman. "Enquiring into the Authorship of the *Ordinall of Alchimy*." *Isis*, 18 (1932), 290-321.

Outlines the bibliographical controversy over the identity of Thomas Norton, author of the *Ordinall*.
See items 287, 296.

287. Nierenstein, M., and F.M. Price. "The Identity of the Ms. Entitled 'Mr. Nortons Worke, *de lapide ph'orum*' with the *Ordinall of Alchimy*." *Isis*, 21 (1934), 52-56.

Establishes the virtual identity of most of the *de lapide* MS with the *Ordinall*.
See items 286, 296.

288. Norton, Thomas. *Ordinal of Alchemy*. Edited by John Reidy. London: Oxford University Press, 1975. Pp. lxxv + 125.

289. Partington, J.R. "Trithemius and Alchemy." *Ambix*, 2 (1938), 53-59.

Asserts that the attitude of the abbot Trithemius toward alchemical practitioners, especially those in religious orders, was extremely critical.

290. Plessner, Martin. "Geber and Jābir ibn Ḥayyān: An Authentic Sixteenth-Century Quotation from Jabir." *Ambix*, 16 (1969), 113-118.

Reports a Jābirian reference in the *De occulta philosophia* of Agrippa of Nettesheim, implying the existence of a Latin text.

291. Portmann, Marie-Louise. "Theodor Zwingers Briefwechsel mit Johannes Runge: Ein Beitrag zur Geschichte der

Alchemie im Basel des 16. Jahrhunderts." *Gesnerus*, 26 (1969), 154-163.

Treats the alchemical ideas (much influenced by Paracelsus who was in Basel in 1527) expressed in an exchange of letters between these two Swiss doctors.

292. Priesner, Claus. "Johann Thoelde und die Schriften des Basilius Valentinus." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 107-118.

Throws new light on the continued dispute as to whether Thoelde was the author of the alchemical works appearing at the end of the sixteenth century purportedly by a Benedictine monk, Basil Valentine, and concludes from internal evidence and Thoelde's own career that he is the author.

293. Pritchard, Allan. "Thomas Charnock's Book Dedicated to Queen Elizabeth." *Ambix*, 26 (1979), 56-73.

Summarizes a work written in 1565, previously thought lost, composed to persuade the Queen to support alchemical research financially.

294. Rattansi, P.M. "Alchemy and Natural Magic in Raleigh's *History of the World*." *Ambix*, 13 (1966), 122-138.

Contrasts the neoplatonic Raleigh's attitudes toward alchemy and natural magic with those of James I, who was a conservative scholastic, and with those of Bacon, who rejected both Renaissance neoplatonism and Aristotelian scholasticism.

295. Read, John. "Alchemy under James IV of Scotland." *Ambix*, 2 (1938), 60-67.

Argues that James was a patron of alchemy, motivated by a genuine interest.

296. Reidy, John. "Thomas Norton and the *Ordinall of Alchimy*." *Ambix*, 6 (1957), 59-85.

Provides details on the life of Thomas Norton of Bristol and discusses problems met in identifying him.

See items 286, 287.

297. Salomon Trismosin. *La toison d'or, au La fleur des trésors*. Text of the French edition of 1612. Introduction, unedited translation of the German text of 1598, and commentary on the illustrations by Bernard Husson. Iconographic study of the Berlin manuscript by René Alleau. Paris: Retz, 1975. Pp. 287.

298. Salomon Trismosin. *Splendor solis*. Translated by Joscelyn Godwin. Edited with a commentary by Adam McLean. Edinburgh: Magnum Opus Hermetic Sourceworks, 1983. Pp. 105.

299. Schuler, Robert M. "Williams Blomfield, Elizabethan Alchemist." *Ambix*, 20 (1973), 75-87.

Discusses the life and thought of this sixteenth-century English Puritan who provided a synthesis of alchemy and Puritan soteriology.

300. Secret, François. "Notes sur quelques alchimistes de la Renaissance." *Bibliothèque d'humanisme et Renaissance, travaux et documents*, 33 (1971), 625-640.

Provides brief accounts of several obscure, mystically oriented French alchemists.

301. Secret, François. "Notes sur quelques alchimistes italiens de la Renaissance." *Rinascimento*, 13 (1973), 197-217.

Describes the attitudes toward alchemy expressed by several Italian Renaissance figures.

302. Secret, François. "Littérature et alchimie. 1: La légende de Saint Jean Alchimiste. 2: Les alchimistes de Flers. 3: Bartolomeo del Bene et l'alchimie. 4: Jean Bodin et l'alchimie. 5: Pierre de Lostal et l'alchimie. 6: François Hotman et l'alchimie. 7: Alchimie et architecture des jardins. 8: Quadrature du cercle et alchimie de Jean Bachou." *Bibliothèque d'humanisme et Renaissance, travaux et documents*, 40 (1978), 301-316.

As the title reveals, contains short notes of alchemical interest.

303. Secret, François. "Situation de la littérature alchimique en Europe, à la fin du XVIe et au début du XVIIe siècle." *XVIIe Siècle*, 30 (1978), 135-144.

Characterizes the alchemy of this period as increasingly allegorical and symbolic.

304. Secret, François. "Palingenesis, Alchemy and Metempsychosis in Renaissance Medicine." *Ambix*, 26 (1979), 81-91.

Links palingenesis (rebirth, regeneration) and metempsychosis (immortality) with prominent themes in alchemy (resurrection, the search for longevity or eternal life).

305. Secret, François. "Un document oublié sur François Hotman et l'alchimie." *Bibliothèque d'humanisme et Renaissance, travaux et documents*, 42 (1980), 435-446.

Discusses a sixteenth-century alchemical treatise by Thomas Arfoncinus (an anagram of Franciscus Hotomanus). Includes the Latin text.

306. Striedinger, Ivo. *Der Goldmacher Marco Bragadino*. Munich: Theodor Ackermann, 1928.

Traces the career of this sixteenth-century adventurer

and alchemical charlatan who exploited the economic distress of the Italy of his day.

307. Suchoff, Karl. "Die Schriften des sogenannten Basilius Valentinus." *Philobiblon*, 6 (1933), 163-170.

Treats bibliographical problems involved in editions of Basil Valentine's works.

308. Suhling, Lothar. "Philosophisches' in der frühneuzeitlichen Berg- und Hüttenkunde: Metallogeneese und Transmutation aus der Sicht montanistischen Erfahrungswissen." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 293-313.

Outlines by examples how, during the Renaissance, traditional alchemical theories of the formation and composition of metals and ores gradually gave way in the face of a growing expertise in mining techniques as well as an increased scientific knowledge.

309. Taylor, F. Sherwood. "George Ripley's Song." *Ambix*, 2 (1946), 177-181.

The translation of a poem by this sixteenth-century alchemist.

310. Taylor, F. Sherwood. "Thomas Charnock." *Ambix*, 2 (1946), 148-176.

Presents previously unpublished information on and texts by this sixteenth-century English alchemist.

311. Telle, Joachim. "Der Alchemist im Rosengarten. . . ." *Euphorion*, 71 (1977), 283-305.

Treats an alchemical poem by the sixteenth-century alchemist, Christoph von Hirschenberg from Meissen, who

employed the very common allegory setting the alchemist in a rose garden.

312. Telle, Joachim. "Bemerkwungen zum *Viatorium spagyricum* von Herbrandt Jamsthaler und seinen Quellen." *Geist und Zeichen: Festschrift für Arthur Henkel zu seinem sechzigsten Geburtstag*. Edited by Herbert Anton. Heidelberg: Winter, 1977, pp. 427-442.

Maintains that this alchemical poem, composed near the end of the sixteenth century and published and provided with illustrations in 1625, is a compilation from identifiable sources. What little is known of Jamsthaler stems from the poem itself; the author combined alchemy with unconventional religious views.

313. Telle, Joachim. "Mythologie und Alchemie: Zum Fortleben der antiken Götter in der frühneuzeitlichen Alchemieliteratur." *Humanismus und Naturwissenschaften*. Edited by Rudolf Schmitz and Fritz Krafft. Boppard am Rhein: Boldt, 1980, pp. 135-154.

Points out the frequent and lively appearance of mythological gods and heroes in Renaissance works on alchemy, a trend fortified by the Renaissance rediscovery of the ancient world.

314. Thorndike, Lynn. "Alchemy during the First Half of the Sixteenth Century." *Ambix*, 2 (1938), 26-37.

Suggests that alchemical tracts appeared only slowly in the early sixteenth century due to prejudice against Arabic and medieval Latin authors as well as to the lack of authentic Greek texts. This situation changed with a Paracelsian revival during the second half of the century.

315. Titley, A.F. "Paracelsus: A Resume of Some Controversies." *Ambix*, 1 (1938), 166-183.

Treats Paracelsus's career, personality, and conflicts as

well as his chemical, alchemical, and medical theories.

316. Webster, Charles. *From Paracelsus to Newton: Magic and the Making of Modern Science*. Cambridge: Cambridge University Press, 1982. Pp. xii + 107.

Uses themes of prophecy, spiritual, and demonic magic to demonstrate that the "irrational" world view of the late Renaissance (Paracelsus) was not merely displaced by nor strictly antithetical to the "scientific" outlook of the mechanically oriented seventeenth century (Newton).

317. Weyer, Jost. "Graf Wolfgang II. von Hohenlohe (1546-1610) und die Alchemie—Ein Arbeitsbericht." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 99-106.

Adduces evidence for the Count's alchemical activities—his laboratory, library, and correspondence with other alchemists. He shared the alchemical interests of several of the contemporary German nobility.

ALCHEMY IN EARLY MODERN EUROPE (17TH-18TH CENTURIES)

318. Andreae, Johann Valentin. *Fama fraternitatis (1614). Confessio fraternitatis (1615). Chymische Hochzeit: Christiani Rosencreutz, anno 1459 (1616)*. Edited by Richard von Dülmen. Stuttgart: Calwer, 1973. Pp. 126.
319. Andreae, Johann Valentin. *Les noces chymiques de Christian Rosenkreutz/Johann Valentin Andreae*. Introduction, translation, and notes by Serge Hutin. Paris: Editions du Prisme, 1973. Pp. 165.
320. Appleby, John H. "Arthur Dee and Johannes Banfi Hunyades: Further Information on their Alchemical and Professional Activities." *Ambix*, 24 (1977), 96-109.
- Brings to light new sources dealing with Dee and the Hungarian alchemist.
See items 386, 387.
321. Belin, Jean Albert. *Les aventures du philosophe inconnu en la recherche et l'invention de la pierre philosophale. [Suives de l'] Apologie du grand oeuvre*. Introduction and bibliographical notes by Sylvain Matton. Paris: Retz, 1976. Pp. 283.
322. Bignami Odier, Jeanne, and Anna Maria Partini. "Cristina di Svezial e le scienze occulte." *Physis*, 25 (1983), 251-278.

Discusses the occult interests (including alchemy) of Christina, Queen of Sweden.

323. Canseliet, Eugène, and René Alleau. *Texts et symboles alchimiques suivis de "Le Pierre de Touche" d'Huginus à Parma (1657)*. Paris: Editions de Minuit, 1953. Pp. 238.

First part: Surveys the oriental and Greek mythologies which aid in explaining alchemy as a psychic experience. The second part explores the relationship between alchemical and religious symbols.

324. Canseliet, Eugène, ed. *L'alchimie et son livre muet (Mutus liber)*. Paris: Pauvert, 1967. Pp. 140.

A reprint of the original edition (La Rochelle, 1677) of the *Mutus liber*, the "wordless book."

325. *Collectanea chemica: Being Certain Select Treatises on Alchemy and Hermetic Medicine by Eirenaeus Philalethes, George Starkey, Dr. Francis Anthony, Sir George Ripley, and Anonymous Unknown*. London, 1893. Reprint. London: Vincent Stuart, 1963. Pp. 160.

326. Graven, J.E. *Count Michael Maier, Doctor of Philosophy and of Medicine, Alchemist, Rosicrucian, Mystic, 1568-1622. Life and Writings*. London: Dawson's of Pall Mall, 1968. Pp. vi + 167.

Describes seventeen of Maier's works, including that most representative of the emblem literature, the *Atalanta fugiens*.

A facsimile reprint of the Kirkwall, 1910 edition.

327. Debus, Allen G. *Chemistry, Alchemy and the New Philosophy*. London: Variorum Reprints, 1987. Pp. xii + 332.

A collection of fourteen previously published papers on topics dealing largely with the development of chemistry in the seventeenth century, including also attention to the persistent influence of an alchemical tradition.

328. Debus, Allen G. "Myth, Allegory, and Scientific Truth: An Alchemical Tradition in the Period of the Scientific Revolution." *Nouvelles de la République des Lettres*, 1987, pp. 13-35.
329. Debus, Allen G. "Alchemy in an Age of Reason: The Chemical Philosophers in Early 18th Century France." *Hermeticism and the Renaissance: Intellectual History and the Occult in Early Modern Europe*. Edited by Ingrid Merkel and Allen G. Debus. Washington, D.C.: Folger Shakespeare Library, 1988, pp. 231-250.

Adduces evidence to show that an interest and belief in alchemy was alive in the rational, mechanistically oriented climate of eighteenth-century French science, even in the Academy of Sciences and the *Journal des Sçavans*, evidence of the persistence of a mystical, occult view of nature.

330. Dobbs, Betty Jo. "Studies in the Natural Philosophy of Sir Kenelm Digby. Part I." *Ambix*, 18 (1971), 1-25.

Argues that Digby tried without complete success to reconcile old traditions with the new mechanical philosophy. Although his alchemical/chemical practice tended to be experimental, he could not put aside older notions.

331. Dobbs, Betty Jo. "Studies in the Natural Philosophy of Sir Kenelm Digby. Part II. Digby and Alchemy." *Ambix*, 20 (1973), 143-163.

Characterizes Digby's approach to alchemy as empirical and rational, representative of a trend toward chemical research and away from the esoteric and occult.

332. Dobbs, Betty Jo. "Studies in the Natural Philosophy of Sir Kenelm Digby. Part III. Digby's Experimental Alchemy—the *Book of Secrets*." *Ambix*, 21 (1974), 1-28.

Argues that Digby's alchemical work as revealed in a

posthumous tract (1602) is strongly experimental and represents genuine chemical processes.

333. Duveen, Denis I. "Le livre de la très Sainte Trinité." *Ambix*, 3 (1948), 26-32.

Describes the content of a seventeenth-century alchemical MS with many miniatures. It is a work of Christian alchemical symbolism with the transmutation of metals a symbol of the redemption of sins.

334. Duveen, Denis I., and Antoine Willemart. "Some Seventeenth Century Chemists and Alchemists of Lorraine." *Chymia*, 2 (1949), 111-117.

Treats the personalities and ideas of several chemists/alchemists at a period of growing scepticism toward transmutation.

335. Fabre, Pierre-Jean. *L'abrege des secrets chymiques*. . . . Published under the direction of Jean-Claude Bailly. Paris, 1936. Reprint. Paris: Gutenberg Reportins, 1980. Pp. xvii + 392.

Affirms the principles of esoteric alchemy as understood by a seventeenth-century alchemist.

336. Figala, Karin. "Die Mathematikeralkemisten des 17. Jahrhunderts: Einige Betrachtungen zur Alchemie Newtons." *Abhandlungen und Berichte des Deutschen Museums*, 41 (1973), 19-32.

Sketches the alchemical activities of some seventeenth-century astronomers and mathematicians.

337. Figurevski, N.A. "The Alchemist and Physician Arthur Dee (Artemii Ivanovich Dii)." *Ambix*, 13 (1965), 35-51.

Sketches the life and career of this son of John Dee. Arthur served as personal physician to the Tsar during the

first half of the seventeenth century. Although Dee had little opportunity for alchemical practice in Russia, he did write his alchemical compilation (*Fasciculus chemicus*) there in 1629.

338. Freudenthal, Gad. "Die elektrische Anziehung im 17. Jahrhundert zwischen korpuskularer und alchemischer Deutung." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 315-326.

Argues that the most accepted explanation of electrical attraction (which could not be accounted for by the dominant corpuscularian-mechanical viewpoint) had recourse to a fatty moist effluvium, part of the legacy derived from Arabic alchemy. Gilbert likewise employed this notion to explain the attractive force of gravity.

339. Frick, Karl R.H. "Johann Christian Bährens (1765-1833), ein westfälischer Pfarrer, Arzt und Alchemist." *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften*, 53 (1969), 423-439.

Discusses the correspondence between Bährens and his medical colleague, Carl Arnold Kortun, likewise an alchemist.

340. Geoghegan, D. "Gabriel Plattes' *Caveat for Alchymists*." *Ambix*, 10 (1962), 97-102.

Presents a work dating from 1655 which was to serve as a warning against the claims of fake alchemists.

341. Goltz, Dietlinde. "Alchemie und Aufklärung: Ein Beitrag zur Naturwissenschaftsgeschichtesschreibung der Aufklärung." *Medizinhistorisches Journal*, 7 (1972), 31-48.

Argues that Enlightenment views of alchemy, as revealed in the work of a contemporary historian of science, were

strongly contemptuous and placed alchemy on the level of perpetual motion devices and circle-squaring.

342. Gorceix, Bernard. "Alchimie et littérature au xvii^e siècle en Allemagne." *Etudes Germaniques*, 26 (1971), 18-31.

Surveys several examples of alchemical materials from seventeenth-century Germany, especially the *Chymische Hochzeit* of Johann Andreae.

343. Heym, Gerard. "The *Aurea catena Homeri*." *Ambix*, 1 (1937), 78-83.

Outlines the content of this work (1723) on mystical alchemy.

344. Hillman, James. "The Imagination of Air and the Collapse of Alchemy." *Eranos-Jahrbuch*, 50 (1981), 273-333.

Argues that once the component gases that make up the atmosphere were recognized and treated quantitatively, the mystery and ambiguity surrounding the gaseous form of matter vanished as did the alchemical possibilities.

345. Husson, Bernard, ed. *Trois textes alchimiques inédits du XVII^e siècle: L'or potable des anciens, Lettres philosophiques, Le testament d'or*. Paris: Librairie de Médicis, 1979. Pp. 102.

Three previously unedited alchemical tracts in which alchemy is considered a philosophy of nature. The editor has provided a brief introduction to each work.

346. Hutin, Serge. *Robert Fludd (1574-1637), alchimiste et philosophe rosicrucien*. Paris: Omnium Littéraire, 1971. Pp. 174.

Argues that Fludd's complex cosmic system, a vast synthesis incorporating the creation, the fall, the redemption

and final ends, is based on Rosicrucian and Hermetic themes which reflect an interconnected view of nature with alchemy as a parallel to Christian regeneration.

347. de Jong, H.M.E., ed. *Michael Maier's Atalanta fugiens. Sources of an Alchemical Book of Emblems*. Leiden: E.J. Brill, 1970. Pp. xiv + 461.

Reproduces the emblems and discusses their literary origins.

348. Josten, C.H. "Truth's Golden Harrow: An Unpublished Alchemical Treatise by Robert Fludd in the Bodleian Library." *Ambix*, 3 (1949), 91-150.

Provides the text of a Fludd treatise conditioned by Fludd's hermetic and Rosicrucian conceptions, in which an analogy is drawn between the work of the alchemist and that of the farmer.

349. Josten, C.H. "William Backhouse of Swallowfield." *Ambix*, 4 (1949), 1-33.

Relates details of the life and alchemical interests of this friend and mentor of Elias Ashmole.

350. Josten, C.H. "Robert Fludd's *Philosophical Key* and his Alchemical Experiment on Wheat." *Ambix*, 11 (1963), 1-23.

Describes this English treatise (c. 1618-1620) which includes an experiment involving the application of successive heat treatments to wheat, the putrefied wheat (chaos) of the first stage leading eventually to a "quintessence" of wheat with healing powers. To the neoplatonic, mystically oriented Fludd, the wheat experiment represented far more than a laboratory process.

351. Josten, C.H., ed. *Elias Ashmole (1617-1692): His Autobiographical and Historical Notes, His Correspondence and Other Contemporary Sources Relating to His Life and Work*. 5 vols. Oxford: Clarendon Press, 1966.
352. Karpenko, Vladimir. "Viridarium chymicum: The Encyclopedia of Alchemy." *Journal of Chemical Education*, 50 (1973), 270-272.
- Describes an illustrated treatise of 1623 by Daniel Stolcius.
353. Kelley, Edward. *The Alchemical Writings*. New York: Weiser, 1970. Pp. lxxvii + 153.
- A reprint of the 1893 edition.
354. Khunrath, Heinrich. *The Amphitheatre Engravings of Heinrich Khunrath*. Translated by Patricia Talhil. Edited by Adam McLean. Edinburgh: Adam McLean, 1980. Pp. 95.
355. Knight, Gareth, and Adam McLean. *Commentary on the Chymical Wedding of Christian Rosenkreutz*. Text of the 1690 Foxcroft translation revised and modernized by Deirdre Green and Adam McLean. With extracts from the original German edition translated by Donald McLean. Edinburgh: Magnum Opus Hermetic Sourceworks, 1984. Pp. 127.
356. Lamspringk. *Traité de la pierre philosophale, suivi de Mathurin Eyquem du Martineau, Le pilote de l'onde vive*. Translated with bibliographical notes by Bernard Roger. Paris: de Noël, 1972. Pp. 254.
357. Limojon de Saint-Didier, Alexandre Toussaint. *Le triomphe hermétique; ou, La pierre philosophale victorieuse*. Milan:

Arché, 1971. Pp. xv + 153 + viii.

A reprint of the Amsterdam, 1699, edition of several French texts on mystical alchemy.

358. Linden, Stanton J. "Jonson and Sendivogius: Some New Light on Mercury Vindicated from the Alchemists at Court." *Ambix*, 24 (1977), 39-54.

Points out that a masque performed at court written by Jonson in 1616 owes much to Sendivogius, especially his *Dialogus Mercurii alchymistae et naturae*. (Jonson was an opponent of alchemy).

359. Maier, Michael. *Symbola aureae mensae duodecim nationum*. Introduction by Karl R.H. Frick. Graz: Akademische Druck- und Verlagsanstalt, 1972. Pp. xxvii + (20) + 621 + (43).

A facsimile of the 1617 edition; second in the series *Fontes artis chymicae*.

360. Maier, Michael. *Atalanta fugiens*. Edited by Joscelyn Godwin. With an introduction by Hildemarie Streich. Tysoe, England: Magnum Opus Hermetic Sourceworks, 1987. Pp. 184.

361. Mattarozzi, Mirella. "Esegesi del simbolismo dei sigilli de Hermes-Theut e di Ermete Trismegisto (lo stesso bivalente) e di Nicolo Flamel dall'*Hortus hermeticus* dello Stolcius." *Gutenberg-Jahrbuch*, 1975, pp. 351-352.

Discusses the influence of symbolism expressed by the seal associated with Hermes (the Egyptian god, Thoth) and of Nicolas Flamel on the *Hermetic Garden* of Stolcius.

362. Matton, Sylvain. "L'Egypte chez les 'philosophes chimiques' de Maier à Pernety." *Etudes Philosophiques* (1987), 207-226.

Argues that many early modern alchemists believed that the secrets of the Great Work lay hidden in ancient Egypt.

363. Miles, Wyndham. "Sir Kenelm Digby, Alchemist, Scholar, Courtier, and Man of Adventure." *Chymia*, 2 (1949), 119-128.

Provides an account of Digby's life and career including his alchemical/chemical interests.

364. Montgomery, John Warwick. *Cross and Crucible. Johann Valentin Andreae (1586-1654), Phoenix of the Theologians*. 2 vols. The Hague: Nijhoff, 1973.

Volume I deals with Andreae's relationship to Rosicrucianism and alchemy; Volume II includes the text of the *Chymische Hochzeit* (1616 edition) with an English translation by E. Foxcroft. Maintains that despite presumed links with the Rosicrucians, Andreae was an orthodox Lutheran.

365. More, Louis Trenchard. "Boyle as Alchemist." *Journal of the History of Ideas*, 2 (1941), 61-76.

Argues that Boyle believed in the possibility of transmutation, which he considered a principle of nature, and that he was confident he had accomplished it.

366. *Mutus liber*. By "Altus." *Reproduction des 15 planches en couleur d'un manuscrit du XVIII^e*. Introduction and commentary by Jean Laplace. Milan: Arché, 1979. Pp. 15 + 15 plates.

An edition reproducing in color the emblems of the "wordless book."

367. Newman, William. "Thomas Vaughan as an Interpreter of Agrippa von Nettesheim." *Ambix*, 29 (1982), 125-140.

Focuses on the use Vaughan made of Agrippa's alchemical views under the pseudonym, Eugenius Philalethes.

368. Nuysement, Jacques. *Les visions hermétiques et autres poèmes alchimiques suivis des Tractez du vray sel secret des philosophes et de esprit général du monde*. Edited by Sylvain Matton. Paris: Culture, Art, Loisirs, 1974. Pp. 319.

369. Perrot, Etienne. *Les trois pommes d'or: Commentaire sur L'Atalante fugitive de Michael Maier*. Paris: La Fontaine de Pierre, 1981. Pp. 339.

370. Le Planis Campy, David. *L'Ouverture de l'escolle de philosophie transmutatoire métallique. . . .* Paris, 1633. Reprint. Paris: Gutenberg Reprints, 1979. Pp. 187.

The author of this work on transmutation was in the service of Louis XIV.

371. Ross, George M. "Leibniz and the Nuremberg Alchemical School." *Studia Leibniziana*, 6 (1974), 222-248.

Adduces evidence that Leibniz was apparently seriously involved with a little-known alchemical society in Nuremberg during the second half of the seventeenth century.

372. Rossi, Paolo. "Hermeticism, Rationality and the Scientific Revolution." *Reason, Experiment, and Mysticism in the Scientific Revolution*. Edited by M.L. Righini Bonelli and William R. Shea. New York: Science History Publications, 1975, pp. 247-273.

Stresses that the concepts and methodologies of the scientific revolution mark a decided discontinuity with those

of the magical, alchemical Hermetic tradition, whatever influence the latter may have exercised.

373. Scopa, James P. "Boerhaave on Alchemy." *Synthesis* (Cambridge), 4 (1979), 24-37.

Argues that while Boerhaave never had a definitive opinion on the validity of transmutation, he did not believe that alchemists had put their doctrines to sufficient experimental test.

374. Seaton, E. "Thomas Hariot's Secret Script." *Ambix*, 5 (1956), 85-110.

Argues that the secret writing contained in the surviving papers of this English mathematician conceals alchemical recipes.

375. Secret, François. "Littérature et alchimie." *Bibliothèque d'humanisme et Renaissance, travaux et documents*, 35 (1973), 499-531.

Brief notes of alchemical interest on Robert Fludd, Tycho Brahe, and several French alchemists of the Renaissance.

376. Secret, François. "Astrologie et alchimie au XVIIe siècle: Un ami oublié d'Ismaël Boulliau-Pierre des Noyers, secrétaire de Marie Louise de Godzague, reine de Pologne." *Studi Francesi*, 60 (1976), 463-479.

Discusses the astrological and alchemical interests of a much-neglected friend of Boulliau, as revealed in correspondence.

377. Sheppard, H.J. "The Mythological Tradition and Seventeenth-Century Alchemy." *Science, Medicine and Society in the Renaissance*. 2 vols. Edited by Allen G. Debus.

New York: Science History Publications, 1972, Vol. I, pp. 47-59.

Argues that the pictorial symbolism of the alchemical emblem literature drew on an ancient mythological tradition long regarded as expressing a deep wisdom. In the late Renaissance, within a neoplatonic context, alchemical secrets appear in a "Hermetic mythology," for example, in the work of Michael Maier.

378. Shirley, John W. "The Scientific Experiments of Sir Walter Raleigh, the Wizard Earl, and the Three Magi in the Tower, 1603-1617." *Ambix*, 4 (1949), 52-66.

Argues from indirect evidence that the chemical researches of Raleigh and Henry Percy, ninth Earl of Northumberland (the "Wizard Earl"), aided by the three "magi" who were pensioners of the Earl (among them, the mathematician Hariot), did not go beyond the preparation of liquors for the table despite much speculation as to their activities.

379. Sladek, Mirko. *Fragmente der hermetischen Philosophie in der Naturphilosophie der Neuzeit: Historische-kritische Beiträge zur hermetisch-alchemistischen Raum- und Naturphilosophie bei Giordano Bruno, Henry More und Goethe*. Frankfurt am Main: Lang, 1984. Pp. 208.
380. van der Stok, Hans. *Contemplations on the Chemical Wedding of Christian Rosenkreutz*. Whitby, England: Camphill Press, 1981. Pp. 55.
381. Stolcius, Daniel. *Chymischen Lustgärtlein*. With an introduction by Ferdinand Weinhandl. Darmstadt: Wissenschaftliche Buchgesellschaft, 1975. Pp. [230] + 52.

A facsimile reprint of the 1624 edition.

382. Stolcius, Daniel. *Viridarium chymicum, ou le jardin chymique*. Translated with commentaries by Bernard Husson. Paris: Librairie de Medicis, 1975. Pp. 410.

383. Stolcius, Daniel. *The Hermetic Garden*. . . . Translated by Patricia Tahil. Edited with a commentary by Adam McLean. Edinburgh: Magnum Opus Hermetic Sourceworks, 1980. Pp. 169.

384. Tachenius, Otto. *Lux obnubilata. Ode alchemica*. With an anonymous preface and commentary. Milan: Arché, 1968. Pp. xxiv + [84].

A facsimile reprint of the original 1666 edition.

385. Taylor, F. Sherwood. "Alchemical Papers of Dr. Robert Plot." *Ambix*, 4 (1949), 67-76.

Discusses the career of this late seventeenth-century figure, prominent in the Royal Society, who kept his adherence to alchemy secret at a time when such an interest was unfashionable.

386. Taylor, F. Sherwood, and C.H. Josten. "Johannes Banfi Hunyades, 1576-1650." *Ambix*, 5 (1953), 44-52.

Discusses the career and alchemical work of this Hungarian alchemist who arrived in London in 1632-1633. See item 320.

387. Taylor, F. Sherwood, and C.H. Josten. "Johannes Banfi Hunyades. A Supplementary Note." *Ambix*, 5 (1956), 115.

Supplements previous information concerning this alchemist.

388. Telle, Joachim. "Zum 'Filius Sendivogii' Johann Hartprecht." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel.

Wiesbaden: Harrassowitz, 1986, pp. 119-136.

Provides material concerning the career and associations of Hartprecht, known by various pseudonyms, among them "Filius Sendivogii" and the monogram J.F.H.S. Points out his association with circles influenced by Boehme, such as that around Hartlieb in England and his connections with Protestant heterodoxy.

389. le Tesson, Jacques. *L'Oeuvre du lion verd.* Text collated and established by Bernard Husson. Paris: Librairie de Médecis, 1978. Pp. 109.

390. Trenczak, Edith. "Lucas Jennis als Verleger alchemistischer Bildertraktate." *Gutenberg-Jahrbuch*, 1965, pp. 324-337.

Provides a list with short descriptions of eight representative alchemical works (including Maier, Mylius, Stolcius, etc.) printed by this seventeenth-century Frankfurt printer and book-handler.

391. Trinick, John. *The Fire-Tried Stone (signum atque signatum). An Enquiry into the Development of a Symbol.* Marazion, Cornwall: Wordens, 1967. Pp. 140.

Draws heavily on Jung's treatment of the same theme for a discussion of the alchemical symbol, *coniunctio*, one of the steps in the Great Work, as seen in the seventeenth-century *Introitus apertus ad occlusum regis palatium* of Eirenaeus Philalethes.

392. Vasoli, Cesare. "Alchemy in the Seventeenth Century: The European and Italian Scene." *Reason, Experiment, and Mysticism in the Scientific Revolution.* Edited by M.L. Righini Bonelli and William R. Shea. New York: Science History Publications, 1975, pp. 49-58.

Traces the influence of the "chemical philosophy" of

Paracelsus and van Helmont in Italy, especially in Naples, during the latter half of the seventeenth century.

393. Vaughan, Thomas. *The Works*. Edited by Alan Rudrum with the assistance of Jennifer Drake-Brockman. Oxford: Clarendon Press, 1984. Pp. xiii + 761.
394. Waite, Arthur E., ed. *The Works of Thomas Vaughan, Mystic and Alchemist (Eugenius Philalethes)*. With a foreword by Kenneth Rexroth. New Hyde Park, N.Y.: University Books, 1968. Pp. li + 497.

A reprint of the 1919 edition.

395. West, Muriel. "Notes on the Importance of Alchemy to Modern Science in the Writings of Francis Bacon and Robert Boyle." *Ambix*, 9 (1961), 102-114.

Contrasts attitudes toward scientific method expressed by these two seventeenth-century figures. While Bacon often called for experimental procedures, Boyle actually investigated the secrets of alchemy; both believed transmutation possible.

396. Weyer, Jost. "The Image of Alchemy in Nineteenth and Twentieth Century Histories of Chemistry." *Ambix*, 23 (1976), 65-75.

Maintains that while nineteenth-century historians regarded alchemy as an aberration and expressed little sympathy for its religious/psychological factors, twentieth-century attitudes have become more sensitive.

397. Wilkinson, Ronald Sterne. "New England's Last Alchemists." *Ambix*, 10 (1962), 128-138.

Traces the activities of several eighteenth-century alchemists in northeast America.

398. Wilkinson, Ronald Sterne. "The Alchemical Library of John Winthrop, Jr. (1606-1676) and His Descendants in Colonial America." *Ambix*, 11 (1963), 33-51.

Treats works in, and the fate of, the Winthrop family library, the most extensive alchemical collection in early America.

399. Wilkinson, Ronald Sterne. "George Starkey, Physician and Alchemist." *Ambix*, 11 (1963), 121-152.

Discusses the origin and career of this seventeenth-century American alchemist who in England was a member of the Hartlib circle, known to Boyle, who was a follower of Helmont and was involved in the Galenist-Paracelsian medical controversy.

400. Wilkinson, Ronald Sterne. "The Problem of the Identity of Eirenaeus Philalethes." *Ambix*, 12 (1964), 24-43.

Suggests that the original Eirenaeus, a well-known author of alchemical works, may have been John Winthrop, Jr., of Massachusetts and Connecticut.

401. Wilkinson, Ronald Sterne. "Some Bibliographical Puzzles Concerning George Starkey." *Ambix*, 20 (1973), 235-244.

Argues there is evidence of Starkey's authorship of an essay by Eirenaeus Philalethes (*Exposition upon Sir George Ripley's Epistle to King Edward IV*) as well as of other materials ascribed to Philalethes.

Alchemy in Context

ALCHEMY AND THE ARTS

402. Amourette, Gérard. "Le *Voiage des jsles occidentalles et orientalles* de Jean Vauquelin des Yveteaux (1651-1716)." *XVIIe Siècle*, 30 (1978), 185-197.

Presents the *Voiage* as an account of the alchemical enterprise within the allegorical tradition of the alchemist as voyager.

403. Aurnhammer, Achim. "Zum Hermaphroditen in der Sinnbildkunst der Alchemisten." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 179-200.

Reviews the role of the hermaphrodite (*rebis*) which symbolizes the resolution of opposites (male-female, etc.) or the stone at the end of the Great Work. Also symbolic of Mercury, it is identified with prime matter, the beginning of the Work.

404. Batfroi, Séverin. *Alchimiques métamorphoses du Mercure Universel. De la vierge minéral aux fresques hermétiques de Cimiez*. Preface by Raoul Auclair. Paris: Editions de la Maisnie, 1977. Pp. xxvii + 245.

Discusses the alchemical significance of the religious imagery in the frescoes in the Franciscan friary at Cimiez (1686).

405. Bergman, Madeleine. *Hieronymus Bosch and Alchemy: A Study on the St. Anthony Triptych*. Stockholm: Almqvist & Wiksell, 1980. Pp. 139.

Suggests that an interpretation of the iconography in Bosch's treatment of the St. Anthony legend in a triptych at Lisbon reveals that the work represents Christian mysticism expressed as an alchemical allegory.

406. Breyer, Jacques. *Dante alchimiste. Interprétation alchimique de la Divine Comédie*. Vol. I. *L'Enfer*. Paris: Editions du Vieux Colombier, 1957. Pp. 267.

An esoteric interpretation of the *Inferno* as an alchemical poem.

407. Brinkman, A.A.A.M. "An Unknown Alchemical Drawing Probably by David Teniers II." *Ambix*, 13 (1966), 187-188.

Describes a drawing with an alchemical theme very likely by Teniers. Several alchemical paintings by this artist are well known.

408. Brinkman, A.A.A.M. "The Influence of Brueghels' Print 'The Alchemist.'" *Janus*, 54 (1967), 141-145.

Provides an account of the wide influence of this satirical representation of an alchemist.

409. Brinkman, A.A.A.M. "Brueghel's 'Alchemist' and Its Influence, in Particular on Jan Steen." *Janus*, 61 (1974), 233-269.

Discusses the subsequent fortunes of this drawing, the first representation of an alchemist, especially its influence on later artists, among them Jan Steen.

410. Buntz, Herwig. "Heinrich von Mügeln als alchemistische Autorität." *Zeitschrift für deutsches Altertum und deutsche Literatur*, 103 (1974), 144-152.

Argues that through the transmission of the alchemical portions of his *Der meide Kranz*, von Mügeln became a much-quoted authority on alchemy.

411. Canseliet, Eugène. *Deux logis alchimiques*. Paris: Jean Schemit, 1945. Pp. xii + 156.

Describes two great houses, one in Italy, the other in France, formerly owned by wealthy adepts who decorated them with alchemical motifs on stonework and in pictures.

412. Davidson, Jane P. "I am the Poison Dripping Dragon': Iguanas and their Symbolism in the Alchemical and Occult Paintings of David Teniers the Younger." *Ambix*, 34 (1987), 62-80.

Discusses the identification of several species of iguanas appearing in Tenier's works; he was the first European artist to depict three of the species of the animal.

413. Dixon, Laurinda S. *Alchemical Imagery in Bosch's Garden of Delights*. Ann Arbor: UMI Research Press, 1981. Pp. xxii + 225.

Points out depictions of major alchemical themes in Bosch's allegorical symbolism.

414. Duncan, Edgar H. "The Literature of Alchemy and Chaucer's *Canon's Yeoman's Tale*: Framework, Theme, and Characters." *Speculum*, 43 (1968), 633-656.

Provides information on those alchemical treatises that the widely read Chaucer must have known first hand.

415. Dunleavy, Gareth W. "The Chaucer Inscription in Trinity College, Dublin MS D.2.8." *Ambix*, 13 (1965), 2-21.

Provides the Middle English text with translation and description of two alchemical works ascribed to Chaucer.

416. Duval, Paulette. *Recherches sur les structures de la pensée alchimique*. Paris: Champion, 1979. Pp. 387.

Traces the alchemical symbolism employed by Chrétien of Troyes in his *Conte du Graal* and suggests possible Mozarab influences from Spain.

417. Fulcanelli. *Le mystère des cathedrales*. 3d ed. Prefaces by Eugène Canseliet. Paris: Pauvert, 1964. Pp. 243.

Maintains that the bas-reliefs decorating Gothic cathedrals, for example, Notre Dame, Paris, and Amiens, have an occult, alchemical significance. Fulcanelli is a most elusive figure who regarded alchemy and its Great Work as a spiritual quest.

418. Gray, Ronald D. *Goethe, the Alchemist*. Cambridge: Cambridge University Press, 1952. Pp. x + 312.

Maintains that Goethe accepted the assumptions of a Christian, neoplatonic alchemy, and that his belief permeated his scientific work on botany and optics.

419. Hartlaub, G.F. "Arcana artis, Spuren alchemistischer Symbolik in der Kunst des 16. Jahrhunderts." *Zeitschrift für Kunstgeschichte*, 6 (1937), 298-324.

Traces hermetic symbols common to alchemy in Renaissance art in both the emblem literature (illustrated esoteric alchemical texts) and in art for general public viewing.

420. Hill, C.R. "The Iconography of the Laboratory." *Ambix*, 22 (1975), 102-110.

Challenges the uncritical use by historians of chemistry of depictions of alchemical laboratories by artists such as David Teniers the Younger. Believes these pictures must be considered within their historical context; they are not a realistic record.

421. Kirsop, Wallace. "L'exégèse alchimique des textes littéraires à la fin du XVI^e siècle." *XVII^e Siecle*, 30 (1978), 145-156.

Treats the manifold problems met in analyzing literary texts for their alchemical import.

422. Lemmi, Charles W. "Mythology and Alchemy in *The Wisdom of the Ancients*." *Essential Articles for the Study of Francis Bacon*. Edited by Brian Vickers. Hamden, Conn.: Archon Books, 1968, pp. 51-92.

Compares Bacon's interpretation of certain classical myths with their use in allegorical alchemy.

423. van Lennep, J. *Art et alchimie. Etude de l'iconographie hermétique et de ses influences*. Preface by Serge Hutin. Brussels: Meddens, 1966. Pp. 292.

Treats the portrayal of symbolic alchemy in manuscript miniatures, engravings in printed works, medals with alchemical themes, and in bas-reliefs, glass, and sculpture connected with the church as well as in the decoration of domestic dwellings. Comments also on alchemical motifs in Dürer, Bosch, Cranach, Raffaello, Bruegel, as well as connections with mannerism and surrealism.

424. Liessem, Franz. *Musik und Alchemie*. Tutzing: Schneider, 1969. Pp. 179.

Connects Pythagorean notions of mathematically determined musical ratios and ideas of a universal harmony with an esoteric alchemy based on signs and symbols of mystical significance.

425. Linden, Stanton J. "Alchemy and Eschatology in Seventeenth-Century Poetry." *Ambix*, 31 (1984), 102-124.

Maintains that the theme of moral regeneration manifest in alchemical images and symbols exerted an influence on seventeenth-century literature.

426. Maillard, Jean-François. "Littérature et alchimie dans la *Peruviana* de Claude-Barthélemy Morisot." *XVIIe Siècle*, 30 (1978), 171-184.

Discusses the alchemical imagery in the novel, *Peruviana* (1644).

427. Marquet, Jean François. "Béroalde de Verville et le roman alchimique." *XVIIe Siècle*, 30 (1978), 157-170.

Characterizes the fiction of Béroalde as an allegorical portrayal of the alchemical Great Work.

See item 436.

428. Mazzeo, Joseph A. "Notes on John Donne's Alchemical Imagery." *Isis*, 48 (1957), 103-123.

Points out Donne's familiarity with general Hermetic doctrines (correspondence, regeneration, etc.) including a knowledge of alchemy for which he drew heavily on Paracelsus.

429. Meinel, Christoph. "Alchemie und Musik." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*.

Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 201-225.

Argues that, aside from a few metaphorical statements and common associations with ancient number theory, there are only meager traces of a musical tradition of any sort in alchemy.

430. Newhauser, Richard. "The *Merlini allegoria* in English." *English Literary Renaissance*, 10 (1980), 121-132.

Provides the English text of the seventeenth-century alchemical poem, *Merlins alegory contaynyng perfectly ye moste profounde secrette of ye Philosophers Stone*.

431. Read, John. *The Alchemist in Life, Literature and Art*. London: Nelson, 1947. Pp. xii + 100.

Provides examples of the treatment of alchemy in Chaucer and Jonson as well as in the diary of a sixteenth-century charlatan, Simon Forman. Likewise, illustrates by numerous examples (sixteenth through eighteenth centuries) the depiction of alchemical themes and symbols, laboratory equipment and procedures, as well as the personality of the alchemist in paintings and engravings.

432. Sadler, Lynn Veach. "Relations between Alchemy and Poetics in the Renaissance and 17th Century, with Special Glances at Donne and Milton." *Ambix*, 24 (1977), 69-76.

Argues the importance of alchemical theories in Renaissance poetry by surveying the use of such themes in Donne's *The Triple Fool* and Milton's *Samson Agonistes*.

433. Sleeper, Helen Joy. "The Alchemical Fugues in Count Michael Maier's *Atalanta fugiens*." *Journal of Chemical Education*, 15 (1938), 410-415.

Analyzes the "fugues" accompanying each of the emblems in Maier's work. They are canons for two voices, all set to the same *cantus firmus*.

434. Welles, Elizabeth B. "The Unpublished Alchemical Sonnets of Felice Feliciano: An Episode in Science and Humanism in 15th Century Italy." *Ambix*, 29 (1982), 1-16.

Analyzes a letter and nine sonnets by this humanist with strong occult interests within the context of the fifteenth-century Italian cultural scene.

435. Wellesz, Egon. "Music in the Treatises of Greek Gnostics and Alchemists." *Ambix*, 4 (1951), 145-155.

Shows the common influence of neoplatonic and neo-Pythagorean number theory (e.g., the association of numerical ratios with musical pitch) found in Greek alchemy and in treatises on music theory by Byzantine authors.

436. Zinguer, Ilanna. "Alchemy, 'Locus' of Renewal for Writing in the *Moyen de parvenir* of Béroalde de Verville (1610)." *Ambix*, 31 (1984), 6-15.

Argues that the elaborate fantasy of the *Moyen de parvenir* can be explicated by analogy with the alchemical Great Work, in which writing and the alchemical procedure both lead to a psychic redemption in the Jungian sense.

See item 427.

ALCHEMY AND SOCIETY

437. Allen, Sally G., and Joanna Hubbs. "Outrunning Atalanta: Feminine Destiny in Alchemical Transmutation." *Signs: Journal of Women in Culture and Society*, 6 (1980), 210-229.

Focuses on the Greek heroine, Atalanta (her races with would-be suitors as well as her use in Maier's emblem book, *Atalanta fugiens*), seeing her as symbolic of feminine power in the alchemical mastery of nature.

438. Bolton, Henry C. *Alchemy and Numismatics*. Boston: T.R. Marvin & Son, 1887. Pp. 12.

Describes coins purported to have been made from alchemical gold by a transmutation usually from lead. A widespread belief in the feasibility of transmutation gave a degree of credibility to these products.

439. Bolton, Henry C. *Contribution of Alchemy to Numismatics*. New York: Author's ed., 1890. Pp. 44.

Describes 43 medals and coins preserved or reported of alchemical noble metal, often commemorating a transmutation or dedicated to the adept or his patron. An edition of 175 copies printed.

440. Bolton, Henry C. "Contribution of Alchemy to Numismatics." *American Journal of Numismatics*, 24 (1890), 73-83.

Describes several coins and medals fabricated from alchemical gold.

441. Brunel, Clovis. *Recettes médicales alchimiques et astrologiques du quinzième siècle en langue vulgaire des Pyrénées*. Toulouse: Edouart Privat, 1956. Pp. xxx + 157.

Provides a list of several hundred alchemical/astrological vernacular recipes dealing mostly with illnesses of men and animals.

442. Buntz, Herwig. "Alchemie und Aufklärung: Die Diskussion in der Zeitschrift *Parnassus Boicus* (1722-1740)." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 327-344.

Illustrates the transition from alchemy to chemistry by an analysis of the content of the articles which appeared in the *Parnassus Boicus*. The journal gradually developed an orientation toward applied chemistry.

443. Flamand, Elie-Charles. *Erotique de l'alchimie*. Preface by Eugène Canseliet. Paris: Belfond, 1970. Pp. 174.

444. Gagnon, Claude. "Les alchimistes et les spéculateurs." *Aspects de la marginalité au moyen âge*. Edited by Guy H. Allard. Montreal: L'Aurore, 1975, 147-155.

Ascribes much of the suspicion toward the alchemist to alchemy's claim to gold-making. Gold was a subject of great and growing economic concern, especially in an age where the identification of the metal was not generally possible. While the alchemist was usually far from a cheat, he and his art were excluded from respectable society.

445. Heym, Gerard. "An Alchemical Journal of the Eighteenth Century." *Ambix*, 1 (1938), 197-199.

Describes briefly a German alchemical weekly, *Der chymische Warsager*.

446. Karpenko, Vladimir. "Coins and Medals Made of Alchemical Metal." *Ambix*, 35 (1988), 65-76.

Discusses problems met in classifying and identifying specie made from alchemically derived metals.

447. Kerschagl, Richard. *Die Jagd nach dem künstlichen Gold: Der Weg der Alchemie. Volkswirtschaftliche Schriften*, 202. Berlin: Duncker & Humblot, 1973. Pp. 123.

Surveys the history and nature of alchemy from a non-mystical viewpoint with emphasis on the alchemist's role in society.

448. Martineau, Robert. "L'Eros universel des alchimistes." *L'Erotisme au moyen âge*. Edited by Bruno Roy. Montreal: L'Aurore, 1977, pp. 13-19.

Connects symbolic alchemy and its union of male and female principles with an ancient erotic tradition.

449. Martin-Rey, P. "Anciennes monnaies hermétiques faites d'or et d'argent philosophal." *Revue numismatique*, 12 (1867), 255-274.

Provides descriptions of a number of coins and medals purported made of alchemically derived noble metal.

450. Migliorino, Francesco. "Alchimia lecita e illecita nel Trecento." *Quaderni medievali*, 11 (1981), 6-41.

Presents the opinion of the jurist Oldrado da Ponte (b. 1270) as expressed in one of his *consilia* (No. 74) on the legitimacy of a practical alchemy freed of magic.

451. Müller-Jahncke, Wolf-Dieter, and Joachim Telle. "Numismatik und Alchemie. Mitteilungen zu Münzen und Medaillen des 17. und 18. Jahrhunderts." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*.

Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 229-275.

Illustrates the connection between numismatics and alchemy's transmutation by numerous early modern examples, pointing out that the study of specie and medals in an alchemical context is a neglected area.

452. Obrist, Barbara. "Die Alchemie in der mittelalterlichen Gesellschaft." *Die Alchemie in der europäischen Kultur- und Wissenschaftschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 33-59.

Comments on alchemy in relation to the larger context of medieval society divided into two periods: 1200-1300 and 1300 on.

453. Ogrinc, Will H.L. "Western Society and Alchemy, 1200-1500." *Journal of Medieval History*, 6 (1980), 127-137.

Surveys the fortunes of alchemy over a 300-year period with a social context revealing the changing attitudes of various levels of society.

454. Reidy, John. "Alchemy as Counter-Culture." *Indiana Social Studies Quarterly*, 24 (1971), 41-51.

Argues that the dubious reputation of alchemy and alchemists lay in alchemy's association with gold-making, its aura of mystery and the occult, its connection with heterodox religious thought.

455. Wilsdorf, Helmut. "Alchemie und Bergwerck. Zur Entdeckungsgeschichte einiger Elemente aus bergmannischen Produkten." *Abhandlungen des staatlichen Museums für Mineralogie und Geologie zu Dresden*, 11 (1966), 315-376.

Argues that there is no evidence that pre-1500 miners and metallurgists adhered to the mercury/sulfur theory of

metals, nor did alchemical doctrines contribute much to the discovery of new elements.

456. Zimmermann, Rainer E. "The Structure of Mythos: On the Cultural Stability of Alchemy." *Ambix*, 31 (1984), 125-137.

Employs Jungian concepts to assert the universality of alchemical fundamental notions in different cultures despite variations in techniques.

ALCHEMY AND THE SPIRITUAL

457. Arnold, Gottfried. *Das Geheimniss der göttlichen Sophia*. Introduction by Walter Nigg. Leipzig, 1700. Reprint. Stuttgart-Bad Canstatt: Friedrich Frommann Verlag, 1963.

A work by a Protestant divine of Annaberg with strong mystical tendencies. It provides an example of the blend between mystical alchemy and religion.

458. Batfroi, Séverin. *Alchimie et révélation Chrétienne*. Paris: Editions de la Maisnie, 1976. Pp. xxv + 249.

Draws strong parallels between features of a spiritual, allegorical alchemy and Christian doctrine.

459. Breymayer, Reinhard. "Ein radikaler Pietist im Umkreis des jungen Goethe: Der Frankfurter konzertdirector Johann Daniel Müller alias Elias Artista (1716 nach 1785)." *Pietismus und Neuzeit: Ein Handbuch zur Geschichte des neueren Protestantismus*, 9 (1983), 180-237.

Treats the life and career of this Frankfurt alchemist whose wife was related to Goethe.

460. Damon, S. Foster. "De Brahm: Alchemist." *Ambix*, 24 (1977), 77-87.

Points out that this eighteenth-century military man was a forerunner of the psychological interpretation of alchemy.

461. Faivre, Antoine. "Mystische Alchemie und geistige Hermeneutik." *Eranos-Jahrbuch*, 42 (1973, pub. 1975), 323-360.

Presents a commentary on eight of the emblems in Michael Maier's *Atalanta fugiens*.

462. von Franz, Marie-Louise. "Die alchemistische Makrokosmos-Mikrokosmos-Idee im Lichte der Jungschen Psychologie." *Symbolon*, 1 (1960), 27-38.

Argues that the relationship between the macro-world and its alchemical equivalent, for example, between the creation (macro) and the appearance of the stone (micro), has a parallel in Jungian analysis in that the individual self is made whole (created).

463. von Franz, Marie-Louise. "The Idea of the Macro- and Microcosmos in the Light of Jungian Psychology." *Ambix*, 13 (1965), 22-34.

Interprets instances of this Hellenistic theme in the context of the Jungian view of alchemy as a psychic process.

464. von Franz, Marie-Louise. *Alchemy: An Introduction to the Symbolism and the Psychology*. Toronto: Inner City Books, 1980. Pp. 280.

Interprets the symbolism in nine alchemical texts, Hellenistic, Arabic, and European (including the *Aurora consurgens*) from the point of view of Jungian psychoanalysis.

465. Frick, Karl R.H. *Die Erleuchteten. Gnostisch-theosophische und alchemistisch-rosenkreuzerische Geheimgesellschaften bis zum Ende des 18. Jahrhunderts—Ein Beitrag zur*

Geistesgeschichte der Neuzeit. Graz: Akademische Druck- und Verlagsanstalt, 1973. Pp. xi + 635.

Traces the origin and evolution of mystery cults, secret societies, and occultist movements, in which the "illuminated" had access to ancient wisdom and magic power just as the alchemical adept had access to nature's secrets.

466. Gessmann, Gustav W. *Die Geheimsymbole der Chemie und Medizin des Mittelalters. Eine Zusammenstellung der von den Mystikern und Alchymisten gebrauchten geheimen Zeichenschrift. Nebst einem kurzgefassten geheimwissenschaftlichen Lexikon.* Walluf bei Wiesbaden: Sändig, 1972. Pp. xiii + 67 + 143.

A reprint of the 1899 edition.

467. Hoheisel, Karl. "Christus und der philosophische Stein. Alchemie als über- und nichtchristlicher Heilsweg." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte.* Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 61-84.

Stresses the spiritual-religious aspect of medieval alchemy, focusing on the notion of the Great Work as a process of salvation with Christ as the stone. Alchemy drew heavily on gnostic ideas as well as on neoplatonic and Hermetic thought, notions which were not always orthodox.

468. Jung, C.G. *Paracelsica, Zwei Vorlesungen über den Arzt und Philosophen Theophrastus.* Zurich: Rascher Verlag, 1942. Pp. 188.

Contains lectures which interpret esoteric alchemy within the context of Jung's theories.

469. Jung, C.G. "The Bologna Enigma." *Ambix*, 2 (1946), 182-191.

Argues that this supposedly ancient text, an epitaph in Bologna, is a sixteenth-century instance of a psychological projection in which internal characteristics are externalized on to persons or things.

470. Jung, C.G. *Alchemical Studies*. Translated by R.F.C. Hull. Princeton: Princeton University Press, 1967. Pp. xiv + 444.

A collection of previously published essays (1942-1957), in which alchemical themes are explicated in terms of analytical psychology. They include a commentary on a Chinese text, "The Secret of the Golden Flower," an analysis of the visions of Zosimos, consideration of Paracelsus as a spiritual phenomenon, and finally a discussion of two of Western alchemy's most important factors—Mercury and the tree.

471. Jung, C.G. *Psychology and Alchemy*. Translated by R.F.C. Hull. 2d ed. Princeton: Princeton University Press, 1968. Pp. xxxiv + 571.

Establishes the theory (the so-called Jungian model) that alchemical doctrines and procedures have nothing to do with physical materials and laboratory work, but rather represent stages in a psychological experience, intensely individual, leading to psychic healing. The phenomenon of alchemy is thus best explicated within the framework of analytical psychology. Originally published as *Psychologie und Alchemie* in 1944.

472. Jung, C.G. *Mysterium coniunctionis: An Inquiry into the Separation and Synthesis of Psychic Opposites in Alchemy*. Translated by R.F.C. Hull. 2d ed. Paperback.

Princeton: Princeton University Press, 1977. Pp. xix + 695.

Interprets the significance of one of the stages of the alchemical process (*coniunctio*) in which the conflict of opposites is resolved and the Great Work can triumphantly conclude.

473. Luther, Martin H., Jr. "A History of the Psychological Interpretation of Alchemy." *Ambix*, 22 (1975), 10-20.

Discusses three contributors to a psychological explanation of alchemy: Ethan Allen Hitchcock (1798-1870), Herbert Silberer (1881-1923) and C.G. Jung (1875-1961).

474. Montgomery, John Warwick. "Cross, Constellation, and Crucible: Lutheran Astrology and Alchemy in the Age of the Reformation." *Ambix*, 11 (1963), 65-86.

Comments on the favorable atmosphere for alchemical pursuits found among early Lutherans. They saw much that was congenial in alchemy's penchant for religious mysticism.

475. Montgomery, John Warwick. "L'astrologie et l'alchimie luthériennes à l'époque de la Réforme." *Revue d'histoire et de philosophie religieuse*, 46 (1966), 323-345.

Discusses attitudes toward nature expressed by some Lutheran theologians, especially as related to astrology and alchemy.

476. Noize, N. "Le Grand Oeuvre, liturgie de alchimie chrétienne." *Revue l'histoire des religions*, 186 (1974), 149-183.

Describes parallels between the Great Work and the Christian passion in which the alchemical process appears as a religious ritual with the alchemist as celebrant.

477. Putscher, Marielene. *Pneuma, Spiritus, Geist. Vorstellungen vom Lebensantrieb in ihren geschichtlichen Wandlungen.* Wiesbaden: Steiner, 1973. Pp. xi + 278.

Argues that the notion of a vital, spiritual force played an important role in Western scientific culture, including alchemy.

478. Reitzenstein, Richard. *Zur Geschichte der Alchemie und des Mystizismus.* Göttingen: Akademie der Wissenschaften, 1919. Pp. 37.

479. Schwarz, Arturo. *L'immaginazione alchemica.* Milan: La Salamandra, 1980. Pp. 221.

A collection of essays written over a thirty-year period presenting the author's interpretation of the relation between alchemy, modern art and analytical psychology.

480. Secret, François. *Les kabbalistes chrétiens de la Renaissance.* Paris: Dunod, 1964. Pp. xvi + 372.

Argues that Renaissance interest in Jewish philosophical mysteries provided the basis for a Christian cabala attractive to many alchemists.

481. Shumaker, Wayne. *The Occult Sciences in the Renaissance. A Study in Intellectual Patterns.* Berkeley: University of California Press, 1972. Pp. xxi + 284.

Includes a section on alchemy which surveys a considerable number of sources from the perspective of a literary scholar.

482. Silberer, Herbert. *Hidden Symbolism of Alchemy and the Occult Arts.* Translated by Smith Ely Jelliffe. New York,

1917. Paperback Reprint. New York: Dover, 1971. Pp. v + 451.

A psychoanalytic interpretation of the symbolism in mystical/religious alchemical works by a member of the Vienna School considerably before the analysis associated with Jung. It was originally titled *Problems of Mysticism and Its Symbolism*.

483. Waite, Arthur E. *The Secret Tradition in Alchemy, Its Development and Records*. New York, 1926. Reprint. London: Stuart & Watkins, 1969. Pp. xxii + 415.

Connects alchemy with a number of occult and mystical traditions, in which the Great Work is treated as an arcane knowledge with spiritual goals.

484. Webb, Eugene. "The Alchemy of Man and the Alchemy of God: The Alchemist as Cultural Symbol in Modern Thought." *Religion and Literature*, 17 (1985), 47-60.
485. Willard, Thomas. "Alchemy and the Bible." *Centre and Labyrinth: Essays in Honour of Northrop Frye*. Toronto: University of Toronto Press, 1983, pp. 115-127.
486. Wirth, Oswald. *Le symbolisme hermétique dans ses rapports avec l'alchimie et la franc-maçonnerie*. Paris, 1930. Reprint. Paris: Dervy-Livres, 1969. Pp. iv + 224.

Reprint of a 1930 collection of articles which appeared in the early decades of this century, as well as commentary on earlier material dealing with Hermetic notions, alchemical symbolism, and their connection with Freemasonry.

487. Yates, Frances A. *The Rosicrucian Enlightenment*. London: Routledge & Kegan Paul, 1972. Pp. xv + 269.

Traces the sources, influence, and fate of the Rosicrucian movement within the context of the Counterreformation.

With its themes of magic, the cabala, alchemy, and religious fervor, Rosicrucian documents (with a Christian Rosencreutz as the founder of a putative brotherhood) preached the dawn of a new reformation which was to inspire genuine secret groups such as the Freemasons.

488. Zolla, Elémire. *Le meraviglia della natura: Introduzione all'alchimia*. Milan: Bompiani, 1975. Pp. 623.

Provides a mystical-religious-spiritual treatment of alchemy which draws on interpretations of alchemical and literary sources.

ALCHEMY AND NEWTON

489. Casini, Paolo. "Newton, a Sceptical Alchemist?" *Reason, Experiment, and Mysticism in the Scientific Revolution*. Edited by M.L. Righini Bonelli and William R. Shea. New York: Science History Publications, 1975, pp. 233-238.

Suggests that while Newton's alchemy was an attempt to arrive at nature's ultimate mysteries, it is possible that Newton, at times, did not accept the validity of alchemy nor did he think its goals really attainable.

490. Castillejo, David. *The Expanding Force in Newton's Cosmos*. Madrid: Ediciones de Arte y Bibliofilia, 1981. Pp. 125.

Draws on Newton's MS materials on alchemy, prophecy, and Biblical chronology, as well as on Newton's optics to suggest that these ostensibly diverse areas are possibly part of a unified system affected by an expanding force which is not the attractive gravitational force.

491. Churchill, Mary S. "The Seven Chapters, with Explanatory Notes." *Chymia*, 12 (1967), 27-57.

Contains the text of an alchemical work transcribed by Newton from a manuscript in the Keynes collection, with a summary and glossary by Newton.

492. Dobbs, Betty Jo. *The Foundations of Newton's Alchemy or "The Hunting of the Greene Lyon"*. Cambridge: Cambridge University Press, 1975. Pp. xv + 300.

Analyzes Newton's alchemical interests, relying on the

MSS and experimental notes as set within the context of the seventeenth-century philosophical and alchemical background. Supports the argument that Newton's alchemical mode of thought introduced a new notion of force into the mechanical philosophy of the seventeenth century.

493. Dobbs, Betty Jo. "Newton's Copy of *Secrets Reveal'd* and the Regimens of the Work." *Ambix*, 26 (1979), 145-169.

Describes the content of a work on esoteric alchemy and argues that the long series of annotations by Newton show him convinced of an active and immaterial first principle.

494. Dobbs, Betty Jo. "Newton's Alchemy and His Theory of Matter." *Isis*, 73 (1982), 511-528.

Argues that Newton's intense preoccupation with alchemy enabled him to introduce vital principles (active forces of cohesion, repulsion/attraction, fermentation) into the mechanistic atomism of the seventeenth-century, non-mechanical agents through which the purposes of the deity were brought about.

495. Dobbs, Betty Jo. "Newton's *Clavis*: New Evidence on its Dating and Significance." *Ambix*, 29 (1982), 198-202.

Adduces new evidence to support the previously assumed period of composition of 1675-1680 for the *Clavis* and to attest to Newton's agreement with the content of the work whether he wrote it or not.

496. Dobbs, Betty Jo. "Alchemische Kosmogonie und arianische Theologie bei Isaac Newton." *Die Alchemie in der europäischen Kultur- und Wissenschaftsgeschichte*. Edited by Christoph Meinel. Wiesbaden: Harrassowitz, 1986, pp. 137-150.

Argues, drawing on Newton's commentary on the *Emerald Table*, that to him a creative, non-mechanical,

vegetative spirit animated matter leading it from chaos, analogous to the Great Work. This spirit, mediator between nature and a transcendent God, was Christ, for whom the Hermes of the *Emerald Table* served as a pagan typos.

See item 497.

497. Dobbs, Betty Jo. "Newton's Commentary on the *Emerald Table* of Hermes Trismegistus: Its Scientific and Theological Significance." *Hermeticism and the Renaissance: Intellectual History and the Occult in Early Modern Europe*. Edited by Ingrid Merkel and Allen G. Debus. Washington, D.C.: Folger Shakespeare Library, 1988, pp. 182-191.

Uses Newton's commentary to illustrate the fundamental unity of his views regarding God and nature. Newton found in the *Emerald Table* a vitalistic, active alchemical spirit which he likely identified with Christ as a mediator between God and matter.

See item 496.

498. Figala, Karin. "Historische Experimente (um 1675) Isaac Newtons, Gewinnen eines 'philosophischen merkurs' als Lösungsmittel für Gold." *Chemie, Experiment und Didaktik*, 2 (1976), 143-148.
499. Figala, Karin. "Zwei Londoner Alchemisten um 1700: Sir Isaac Newton und Cleidophorus Mystagogus." *Physis*, 18 (1976), 245-273.

Rejects the opinion that Newton discarded alchemy after leaving Cambridge and maintains that he had contacts with an "underground" alchemy including those with Cleidophorus (possibly a well-known medical man, W.Y. Worth). Attempts to show similarities in their alchemical ideas.

500. Figala, Karin. "Newtons rationales System der Alchemie." *Chemie in unseren Zeit*, 12 (1978), 101-110.

501. Figala, Karin. "Gedanken zu Isaac Newtons Studium von Georg Agricolas Werken." *Arithmos-Arrythmos: Skizzen aus der Wissenschaftsgeschichte. Festschrift für Joachim Otto Fleckenstein*. Edited by Karin Figala and Ernst H. Berninger. Munich: Minerva, 1979, pp. 73-103.

Attests to Newton's familiarity with Agricola's ideas. Due to a false attribution, Newton may have thought Agricola more sympathetic to alchemy than was the case.

502. Figala, Karin. "Das verheimlichte Leben des Sir Isaac Newton." *Bild der Wissenschaft*, 12 (1980), 154-161.

Suggests that Newton's difficult personality as well as his acute period of psychic distress might have been the result of or exacerbated by a slow poisoning from the materials he used in his alchemical researches.

503. Figala, Karin. "Die exakte Alchemie von Isaac Newton." *Verhandlungen der naturforschenden Gesellschaft zu Basel*, 94 (1984), 157-227.

Argues that Newton's interest in alchemy was long-standing and paralleled his scientific concerns, treats Newton's alchemical notions in the context of his theory of matter, and discusses the influence of Sendivogius and Michael Maier on his thought.

504. Forbes, R.J. "Was Newton an Alchemist?" *Chymia*, 2 (1949), 27-36.

Maintains that Newton's preoccupation with alchemy was not for the purpose of gold-making, but rather represented his interest in the structure of matter.

505. Geoghegan, D. "Some Indications of Newton's Attitude towards Alchemy." *Ambix*, 6 (1957), 102-106.

Argues that while Newton believed in the claims of alchemy, he did not want his opinion made public.

506. Hall, Marie Boas. "Newton's Voyage in the Strange Seas of Alchemy." *Reason, Experiment, and Mysticism in the Scientific Revolution*. Edited by M.L. Righini Bonelli and William R. Shea. New York: Science History Publications, 1975, pp. 239-246.

Suggests that Newton's experimental work does not reveal him as an unalloyed alchemist, and that an analytical examination of his alchemical sources and his own conclusions may show his alchemy to be more chemical than "mystical."

507. McGuire, J.E. "Transmutation and Immutability: Newton's Doctrine of Physical Qualities." *Ambix*, 14 (1967), 69-75.

Attempts to determine the development of Newton's attitude toward the possibility of transmutation based on material drawn from the *Principia* and the *Opticks*.

508. McGuire, J.E. "Neoplatonism and Active Principles: Newton and the Corpus Hermeticum." *Hermeticism and the Scientific Revolution*. Edited by Robert S. Westman and J.E. McGuire. Los Angeles: The William Andrews Clark Memorial Library, University of California, 1977, pp. 94-142.

Argues that Hermetic notions (including alchemy) had no major role in the formation of Newton's philosophy of nature. Rather such key Newtonian concepts as the notion of active forces operating on a passive matter through a distance derive from the doctrines of the Cambridge Platonists.

509. McGuire, J.E., and P.M. Rattansi. "Newton and the 'Pipes of Pan.'" *Notes and Records of the Royal Society*, 21 (1966), 108-143.

Argues the value of the so-called "classical" *scholia* to

the *Principia* in comprehending Newton's holistic view of God and creation, and in understanding the unity behind Newton's apparently disparate fields of interest (scientific versus mystical and occult).

510. Newman, William. "Newton's *Clavis* as Starkey's *Key*." *Isis*, 78 (1987), 564-574.

Argues that as the text of the *Clavis* attributed by some scholars to Newton appears in a letter by George Starkey (identified with Eirenaeus Philalethes) to Robert Boyle written considerably before Newton transcribed the work, the *Clavis* is certainly not by Newton.

511. Rattansi, P.M. "Newton's Alchemical Studies." *Science, Medicine and Society in the Renaissance*. 2 vols. Edited by Allen G. Debus. New York: Science History Publications, 1972, Vol. II, pp. 167-182.

Explains Newton's intense concern with alchemy, an embarrassment for older Newton scholarship, as part of Newton's search for a unitary solution to the mysteries of the universe within the context of Renaissance neoplatonic and Hermetic ideas.

512. Rattansi, P.M. "Some Evaluations of Reason in Sixteenth- and Seventeenth-Century Natural Philosophy." *Changing Perspectives in the History of Science*. Edited by Mikuláš Teich and Robert Young. London: Heinemann, 1973, pp. 148-166.

Adduces the role of the Cambridge Platonists and of Renaissance hermeticism in Newton's modifications of seventeenth-century mechanical philosophy and in his devotion to alchemical studies and Biblical chronology.

513. Taylor, F. Sherwood. "An Alchemical Work of Sir Isaac Newton." *Ambix*, 5 (1956), 59-84.

Confirms Newton's long and intense interest in alchemy and gives the text with analysis of his *Sententiae notabiles*.

514. Westfall, Richard S. "Newton and the Hermetic Tradition." *Science, Medicine and Society in the Renaissance*. 2 vols. Edited by Allen G. Debus. New York: Science History Publications, 1972, Vol. II, pp. 183-198.

Argues that while the Hermetic concept of nature was indeed antithetical to the mechanical philosophy of the seventeenth century, Hermetic notions pervaded and influenced many of the ostensibly "scientific" ideas of contemporary natural philosophers, particularly Newton.

515. Westfall, Richard S. "Isaac Newton's *Index chemicus*." *Ambix*, 22 (1975), 174-185.

Assesses the large amount of alchemical material in the *Index* (making it far more than an index or guide to the literature) as further evidence of Newton's extraordinary interest in alchemy. An appendix provides an analysis of the 46 largest entries.

516. Westfall, Richard S. "The Role of Alchemy in Newton's Career." *Reason, Experiment, and Mysticism in the Scientific Revolution*. Edited by M.L. Righini Bonelli and William R. Shea. New York: Science History Publications, 1975, pp. 189-232.

Argues that the chronology of Newton's alchemical papers reveals his interest at its highest during the period of the *Principia* at a time when Newton revised the seventeenth-century mechanical philosophy so as to include active principles acting at a distance on passive matter.

517. Westfall, Richard S. "The Influence of Alchemy on Newton." *Science, Pseudo-Science and Society*. Edited by P. Hanen, M.J. Osler and R.G. Weyant. Waterloo, Ontario: Wilfred Laurier University Press, 1980, pp. 145-169.

Suggests that Newton's long and intense preoccupation with alchemy provided the stimulus from whence rose the concepts of attractive/repulsive forces and active/passive principles found in his mechanics but not in the mechanistic world view of the seventeenth century.

518. Westfall, Richard S. "Alchemy in Newton's Library." *Ambix*, 31 (1984), 97-101.

Comments on the number of alchemical works in the library, including occult materials in general. Considers the library's contents at the time when Newton's active interest in alchemy had ceased.

519. Westfall, Richard S. "Newton and Alchemy." *Occult and Scientific Mentalities*. Edited by Brian Vickers. Cambridge: Cambridge University Press, 1986, pp. 315-335.

Maintains that Newton's intense and long-held interest in alchemy spans the years in which he introduced notions of active principles (forces of attraction and repulsion) into his natural philosophy, a fruitful influence of his alchemical concerns. But Newton transformed the concept of force from a Hermetic active principle into a science of quantitative dynamics.

520. Zafiropulo, Jean, and Catherine Monod. *Sensorium dei dans l'hermétisme et la science*. Paris: Les Belles Lettres, 1976. Pp. 390.

Contains a long discussion on Newton and alchemy on pp. 139-260.

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