Women in Alchemy in the Late Medieval & Early Modern Periods Annotated Bibliography

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1. "Marie Le Jars De Gournay Facts." *Encyclopedia of World Biography.* The Gale Group, Inc., 2010. Web. 20 Feb. 2014.

   Marie le Jars de Gourney lived from 1565 to 1645 in France. She was born to a minor French aristocrat. She had an intellectual friendship with Michel de Montaigne, whose works she edited after his death and became well-known for. She tried to become a woman of letters, and became an alchemist instead, managing to get access to a furnace to use through her connections. She made feminist arguments about womens repression and said it could be overcome through opportunities in science.

2. Berlin, Isaiah. "History and Theory: The Concept of Scientific History." *History and Theory* 1.1 (1960): 1-31. Print.

   Berlin argues that history cannot and should not use the same methods as science. He argues this is so because its goals are much too broad to apply and test each maxim we use to make causal judgments in history. He argues for the scientific method to be successful, you must have a very specific subject matter- history has too many variables to be able to rigorously link events. The goals of history also do not fit into the outcome of the scientific method because history cares about the differences and characteristics of each age, which cannot be captured in general laws. Bowler argues that history requires a rigorous skill set including a good sense of judgment from experience that is different than but not inferior to what one needs to do science.

3. Bowler, Peter J., and Iwan Rhys Morus. "Science and Gender." *Making Modern Science: A Historical Survey.* Chicago: U of Chicago, 2005. 487-509. Print.

   Bowler and Morus present the possibility that science might be an inherently sexist activity. Some feminist philosophers argue that science has been this way from creation, citing the language of nature as an exploitable female body used, and others think it stemmed from the scientific revolution, when nature become a machine which could be depersonalized and conquered, also citing parallels between this occurrence and the increasing economic and social marginalization of women. While it is apparent there are less women in science than men, it is not obvious if this is because science is done from a male perspective and thus less attractive to women or if the bias against women keeps them out. Some radical feminist philosophers argue for a science that is more intuitive and feminine, which in its presented form Bowler and Morus argue simply plays into the harmful stereotypes and ideas of femininity female scientists may be trying to escape from; she also argues this marginalizes the history of female scientists that is being found by a growing number of researchers. In the end, Bowler and Morus present Donna Haraways proposal for a recognition of many valid ways of obtaining

knowledge, scientific or otherwise, and also advocate that scientists see knowledge as situated and place themselves on level with the natural world.

4. Clucas, Stephen. "Alchemy and Certainty in the Seventeenth Century." *Chymists and Chymistry: Studies in the History of Alchemy and Early Modern Chemistry.* By Lawrence Principe. Sagamore Beach, MA: Science History Publications/USA, 2007. 39-51. Print.

   Alchemical texts are known for their obscure metaphors and their use of many different names for common chemicals. Here, Clucus argues that the move towards a more standardized and less obscure system came from inside alchemy before the scientific revolution, not first by Boyle as often presented. A century before Boyle, Andreas Libavius presented arguments for standardization of terminology and rational framing in Rerum chymicarum espitolica forma. He argues for standardization by way of arguing that chemists ought to share their discoveries with the public, and obscure language seriously hinders that. He was not against the use of metaphor and hieroglyphs, but as argued in Morans chapter, he asked for the metaphors to be more cannon and accessible. He praises Gerber for providing arguments about cause and effect. Clucas argues that this idea may have been forgotten because Libavius directs his efforts toward creating an Aristotelian science, and because he focuses on refining the theoretical system, not the practical side of chemistry.

5. Kearney, Hugh. *Science and Change*. McGraw- Hill. 1971. Print.

   Kearney argues that the scientific revolution is much more multi-faceted than often presented and was influenced by, and therefore indivisible from, the Renaissance, reformation, religion, and philosophy. He cautions against trying to find one strand to follow that will produce the scientific revolution, because it actually grew out of many disciplines and explanations of the universe, the three major views being organic, magical, and mechanistic. Other notable confounding factors include the inseparability of science and religion (and further problems reconciling Greek thought with Christianity) and the fact that Greek thought was not unified and handed down through bad Latin translations in Europe.

6. Moran, Bruce T. "The Less Well-Known Libavius: Spirits, Powers, and Metaphors in the Knowing of Nature." *Chymists and Chymistry: Studies in the History of Alchemy and Early Modern Chemistry.* By Lawrence Principe. Sagamore Beach, MA: Science History Publications/USA, 2007. 13-24. Print.

   Andreas Libavius was a 17th century alchemist who is often presented as embodying the Aristotelian spirit; Moran argues that Libavius was much more open to symbolism, occult, and mystical ideas for explanation than the strict Aristotelianism he is usually presented with. Libavius defended the use of alchemical metaphors, parables, and hieroglyphs, wherein the alchemical process was represented symbolically and in place of a rigid causal explanation. He argued that other artisans like book printers had similar marks to convey information in a short form. Being overly obscure with the symbology was the only objectionable part of the alchemists version of the practice. He also wrote on occult explanations, such as the power of a tree bringing forth a medical condition that lay dormant, violating the Aristotelian principle that properties of a body cannot migrate from one to another. Libavius ultimately thought metaphor was important to be able to understand phenomena like magnets that could not be explained strictly empirically.

7. Mozans, H. J. "Martine de Bertereau du Chatelet." *Woman in Science: With an Introductory Chapter on Woman's Long Struggle for Things of the Mind.* Cambridge: MIT, 1974. Print.

Martine de Bertereau du Chatelet lived in the early 1600s in France. She published two works on the science of mining, the different kinds of mines, the assaying of ores and the divers method[s] of smelting them, as well as the general principles of metallurgy. In 1642, she was imprisoned for witchcraft and died in jail that year.

8. Newman, William R. and Principe, Lawrence M. "Alchemy vs. Chemistry: The Etymological Origins of a Historiographic Mistake." *Early Science and Medicine*, Vol. 3, No. 1 (1998): 32-65

   Newman and Principe argue that until the last quarter of the seventeenth century in the early modern period, the terms alchemy and chemistry referred to the same practice and were used interchangeably by writers and practitioners; attempts to distinguish the two in the historical record is shown to be a modernist intervention. The separation of terms occurred via an etymological error made by a lexicographer, Martin Ruland, who treated the Arabic definite article prefix al as an intensifier and thus treated alchemy as being a more emphatic term than chemistry. This inaccurate distinction was propagated through later textbooks and the division became multi-dimensional when alchemy became a category of chemistry that sometimes dealt with transmutation, leading to its divorce from chemistry as a concept when transmutation was attacked by influential textbook author Nicolas Lemery in 1679. Newman and Principe advocate discussing alchemy and chemistry in the Early-Modern period using the term chymistry to demonstrate the then-equality of now-distinct terms, and chrysopoeia to discuss the transmutation of metals.

9. Nummedal, Tara. *Alchemy and Authority in the Holy Roman Empire.* Chicago, IL, USA: University of Chicago Press, 2007.

   Nummedal asserts that in the early modern period in the Holy Roman Empire, the practice of alchemy was legitimate and multi-faceted, with its manifestation in a particular practitioner dependent on many factors. Alchemists were of all classes and backgrounds, from the most educated who could directly read medieval alchemic texts in the original Latin to those who learned skills orally and through practice from other alchemists and tradespeople. Further, Nummedal places alchemy at the center of state-building; nobility contracted alchemists to work to increase their knowledge and wealth in order to give them further power over their land. This gave rise to the image of the alchemist as a respected scholarly figure in the popular imagination until the late 16th century when humanists began to perpetuate the image of the alchemist as a charlatan, which played a part in the delegitimization of alchemy.

10. Nummedal, Tara. "Assembling Expertise." *Alchemy and Authority in the Holy Roman Empire.* Chicago, IL, USA: University of Chicago Press, 2007.

    Alchemical knowledge was spread in a variety of ways, which helped to create the diversity in its practitioners. The primary ways of obtaining alchemical knowledge were through books, first only ancient and medieval texts but later contemporary authorities like Paraclesus, studying under a purely alchemical master, which was less common, and gathering knowledge from practitioners and books from related arts, which provided the most variance in results. Alchemy drew on many other established practices, most notably metallurgy, assaying, goldsmithing, distilling, and medicine, though other recommended courses of study by various published alchemists included philosophy, mathematics, and mythology to understand alchemical texts. These varied approaches make it impossible to say what one individual alchemist did through the title alone.

11. Nummedal, Tara. "Laboratories, Space, and Secrecy." *Alchemy and Authority in the Holy Roman Empire.* Chicago, IL, USA: University of Chicago Press, 2007.

Alchemists practiced in a variety of settings depending on their means. For those without, many urban kitchens and homes were the setting for alchemical activities. On the other hand, nobility was able to provide contracted alchemists devoted labs to practice in which were filled with copious amounts of equipment and materials for their use. Among those who were employed by the nobility, there were different classes of practitioners ranging from laborants who simply carried out tasks and alchemists who had autonomy in producing recipes for their patrons; with these distinctions also came vast differences in pay and risk, with many alchemists being executed when they could not produce what they claimed.

12. Nummedal, Tara. "Alchemical Reproduction and the Career of Anna Marie Zieglerin." *Ambix* 2nd ser. 48 (2001): 56-68. Web.

Anna Maria Zieglerin lived from 1550 to 1575. She was born in Saxxony to parents of minor nobility, and later worked, starting when she was 25, at court of Duke Julius of Braunschweig-Wolfenbuttel for 3 years, with own lab and assistants but no official title. While there, she wrote a short treatise for Duke Julius, Concerning the Noble and Precious art of Alchamia, on the philosophers stone, medicines, artificial gemstones, and fertilizing fruit trees. She had no official training in alchemy before working under the Duke, but she probably met alchemists in the noble courts she grew up in. She created a fake teacher and lover figure that was related to Paracelsus in order to give legitimacy to her work as a woman and also to separate her knowledge base from other alchemists. She maintained his reality even while she was being persecuted, testifying that he passed on a book to her that contained alchemical recipes and spiritual knowledge. An important part of her alchemical work was the inclusiveness of the female womb as a part of alchemical reproduction, as opposed to the male alchemical reproduction that cut females out of the picture; in her writings she includes parallels between her own fertility and capacity for motherhood and alchemical thought. She also demonstrates what working alchemists cared about separate from alchemical philosophers - in order to get patronage, something practical needed to be produced, so in contrast to alchemical philosophers lie Micheal Maier (1600) who thought that alchemy should privilege the intellect over the senses, Anna cared more about the experimental side (whether this was grounded in an empiricist view or purely just a matter of getting employment for her still could be argued as she did have a noble background). In the end, an interesting difference in the result of her story is that while the other alchemists of Julius court were executed for fraud and treason, she was executed for sorcery and adultery.

13. Nummedal, Tara. "Marie Meurdrac." *Women Alchemists.* N.p., n.d. Web. 20 Feb. 2014.

Marie Meudrac lived in the mid-1600s in France. She wrote La Chymie Chritable et Facile, en Faveur des Dames, describing her experiments and alchemy. She was self-taught and was a teacher to female students in her lab. She believed that the mind has no sex and that men and women could attain equal achievements through education, and was a particular advocate for womens achievement in the sciences. She also distributed the medicine she created to the poor.

14. Peterschmitt, Luc. "The Cartesians and Chemistry: Cordemoy, Rohault, Regis." *Chymists and Chymistry: Studies in the History of Alchemy and Early Modern Chemistry.* By Lawrence Principe. Sagamore Beach, MA: Science History Publications/USA, 2007. 193-202. Print.

Peterschmitt argues that chemistry did not become mechanical to become a science, and also that the early modern mechanists did not account for chemical phenomena in their theory. He uses Cordemoy, Rohault, and Regis as examples of Cartesians who held that physical explanation had to occur through the different properties of extension. Peterschmit shows that the mechanical explanation by Cordemoy of digestion is actually not explanatory, citing a need for the chemical vocabulary. He also presents Rohaults criticism of chemistry as non-predictive but applauding the chemists for creating phenomena to explain through practice, which Peterschmitt argues shows the chemists were creating the more robust and real science at the time.

15. Rayner-Canham, Marelene F., and Geoffrey Rayner-Canham. *Women in Chemistry: Their Changing Roles from Alchemical times to the Mid-twentieth Century.* Philadelphia: Chemical Heritage Foundation, 2001. Print.

    During the Dark Ages, womens learning occurred in nunneries while mens learning occurred in monasteries. When nunneries began to outnumber monasteries, there was a backlash from the all-male clerical hierarchy and many nunneries were shut down or converted to charity organizations. Women were excluded from early western universities also, as the universities were very closely tied to the churches. Academic celibacy was also enforced, so there were few daughters of academic fellows. During medieval times, women were still excluded from education but began to practice alchemy. Secrecy was important because if their practices were found out, they could be tried as witches (along with herbalists and midwives.)

16. Robin, Diana Maury, Larsen, Anne R. and Levin, Carole (2007). "Isabella Cortese." *Encyclopedia of Women in the Renaissance: Italy, France, and England.* ABC-CLIO, Inc.

    Isabella Cortese lived in Italy in the mid-16th century in the context of the Renaissance. She published her book The Secrets of Lady Isabella Cortese in 1561 in Italy, which sold eleven editions. This is the only printed book actually published by a female alchemist in the 16th century. Cortese claimed that she gained more of her knowledge from traveling to central Europe than from alchemical texts, which she considered to be only fictions and riddles.

17. Warren, Karen. "Descartes and Elisabeth." *An Unconventional History of Western Philosophy: Conversations between Men and Women Philosophers.* Lanham, MD: Rowman & Littlefield, 2009. Print.

    Elisabeth was a Princess and Abbess in the 17th century who began to correspond with Descartes in her mid-twenties. She was very well-educated and interested in academic and political matters. All of her philosophy that we know is held in her correspondence with Descartes. The greatest challenge she posed to Cartesian philosophy was her objection to mind-body dualism, that there was no explanation for how the mind moved the body if they were totally different substances (and if theyre not separate than we lose the objective platform for the rest of the system.) Contemporary feminist philosophers further argue that the mind-body dualism has been historically sexist, associating females with body and males with mind, and implying that emotion compromises objectivity in ethics. Elisabeths perspective in the letters is ultimately more practical, wanting an ethical system she could apply as a ruler, more philanthropic, as she cared about balancing her own interests with the greater good, and less married to the idea of a divine guide laying out action thats likely to be true. Nye suggests in her commentary that by allowing emotions to be valid in science, we could see diverse practices and methods in science, including Intuitive styles of research, approaches that

emphasize interacting functions rather than linear causation and fixed mechanisms, concepts based on changing metaphors, [that] might lead to new insights into nature.

18. Warren, Karen. *An Unconventional History of Western Philosophy: Conversations between Men and Women Philosophers.* Lanham, MD: Rowman & Littlefield, 2009. Print.

    In this text, Dr. Warren seeks to provide an inclusive picture of the history of western thought by pairing complementary woman philosophers in correspondence with male philosophers from cannon. She theorizes that women have been excluded from the history of philosophy due to male bias, and this text is a part of the recovery project to rediscover and integrate womens voices into philosophy. Dualisms, with women being placed on the less desirable side, have been used to subordinate womens voices - one important concept of note is the dualism created by rationalism, reason vs. emotion; many philosophical assumptions and conclusions could be affected by including the oppresseds arguments for why these assumptions are false or dualisms incomplete.