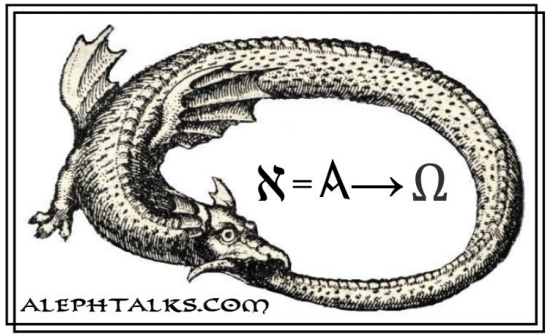

Mysticism: Where Science, Art and Spirituality Meet?

Topic Two: Science in the Microcosm

Alchemy and Mysticism

What Is Alchemy?

- Alchemy (from Arabic: al-kīmiyā; from Ancient Greek: χυμεία, khumeía) is an ancient branch of natural philosophy, a philosophical and protoscientific tradition that was historically practiced in China, India, the Muslim world, and Europe.
- In its Western form, alchemy is first attested in a number of pseudepigraphical texts written in Greco-Roman Egypt during the first few centuries AD.
- Alchemists attempted to purify, mature, and perfect certain materials. Common aims were chrysopoeia, the transmutation of "base metals" (e.g., lead) into "noble metals" (particularly gold); the creation of an elixir of immortality; and the creation of panaceas able to cure any disease. The perfection of the human body and soul was thought to result from the alchemical magnum opus ("Great Work"). The concept of creating the philosophers' stone was variously connected with all of these projects.

What Is Alchemy?

- Islamic and European alchemists developed a basic set of laboratory techniques, theories, and terms, some of which are still in use today. They did not abandon the Ancient Greek philosophical idea that everything is composed of four elements, and they tended to guard their work in secrecy, often making use of cyphers and cryptic symbolism. In Europe, the 12th-century translations of medieval Islamic works on science and the rediscovery of Aristotelian philosophy gave birth to a flourishing tradition of Latin alchemy. This late medieval tradition of alchemy would go on to play a significant role in the development of early modern science (particularly chemistry and medicine).
- Modern discussions of alchemy are generally split into an examination of its exoteric practical applications and its esoteric spiritual aspects, despite criticisms by scholars such as Eric J. Holmyard and Marie-Louise von Franz that they should be understood as complementary. The former is pursued by historians of the physical sciences, who examine the subject in terms of early chemistry, medicine, and charlatanism, and the philosophical and religious contexts in which these events occurred. The latter interests historians of esotericism, psychologists, and some philosophers and spiritualists. The subject has also made an ongoing impact on literature and the arts.

What Is Alchemy?

- Alchemy encompasses several philosophical traditions spanning some four millennia and three continents. These traditions' general penchant for cryptic and symbolic language makes it hard to trace their mutual influences and "genetic" relationships. One can distinguish at least three major strands, which appear to be mostly independent, at least in their earlier stages**: Chinese alchemy**, centered in China**; Indian alchemy**, centered on the Indian subcontinent; and **Western alchemy**, which occurred around the Mediterranean and whose center shifted over the millennia from Greco-Roman Egypt to the Islamic world, and finally medieval Europe.
- Chinese alchemy was closely connected to Taoism and Indian alchemy with the Dharmic faiths. In contrast, Western alchemy developed its philosophical system mostly independent of but influenced by various Western religions. It is still an open question whether these three strands share a common origin, or to what extent they influenced each other.

Hellenistic Egypt

- The start of Western alchemy may generally be traced to ancient and Hellenistic Egypt, where the city of Alexandria was a center of alchemical knowledge, and retained its pre-eminence through most of the Greek and Roman periods. Following the work of André-Jean Festugière, modern scholars see alchemical practice in the Roman Empire as originating from the Egyptian goldsmith's art, Greek philosophy and different religious traditions. Tracing the origins of the alchemical art in Egypt is complicated by the pseudepigraphic nature of texts from the Greek alchemical corpus.
- The treatises of Zosimos of Panopolis, the earliest historically attested author (fl. c. 300 AD), can help in situating the other authors. Zosimus based his work on that of older alchemical authors, such as Mary the Jewess, Pseudo-Democritus, and Agathodaimon, but very little is known about any of these authors. The most complete of their works, The Four Books of Pseudo-Democritus, were probably written in the first century AD.

Hellenistic Egypt-Mythology

- Zosimos of Panopolis asserted that alchemy dated back to Pharaonic Egypt where it was the domain of the priestly class, though there is little to no evidence for his assertion. Alchemical writers used Classical figures from Greek, Roman, and Egyptian mythology to illuminate their works and allegorize alchemical transmutation. These included the pantheon of gods related to the Classical planets, Isis, Osiris, Jason, and many others.
- The central figure in the mythology of alchemy is Hermes Trismegistus (or Thrice-Great Hermes). His name is derived from the god Thoth and his Greek counterpart Hermes. Hermes and his caduceus or serpent-staff, were among alchemy's principal symbols. According to Clement of Alexandria, he wrote what were called the "forty-two books of Hermes", covering all fields of knowledge. The Hermetica of Thrice-Great Hermes is generally understood to form the basis for Western alchemical philosophy and practice, called the hermetic philosophy by its early practitioners. These writings were collected in the first centuries of the common era.

Hellenistic Egypt-Technology

- The dawn of Western alchemy is sometimes associated with that of metallurgy, extending back to 3500 BC. Many writings were lost when the Roman emperor Diocletian ordered the burning of alchemical books after suppressing a revolt in Alexandria (AD 292).
- Few original Egyptian documents on alchemy have survived, most notable among them the Stockholm papyrus and the Leyden papyrus X. Dating from AD 250–300, they contained recipes for dyeing and making artificial gemstones, cleaning and fabricating pearls, and manufacturing of imitation gold and silver. These writings lack the mystical, philosophical elements of alchemy, but do contain the works of Bolus of Mendes (or Pseudo-Democritus), which aligned these recipes with theoretical knowledge of astrology and the classical elements.
- Between the time of Bolus and Zosimos, the change took place that transformed this metallurgy into a Hermetic art.

Hellenistic Egypt-Philosophy

- Alexandria acted as a melting pot for philosophies of Pythagoreanism, Platonism, Stoicism and Gnosticism which formed the origin of alchemy's character.[An important example of alchemy's roots in Greek philosophy, originated by Empedocles and developed by Aristotle, was that all things in the universe were formed from only four elements: earth, air, water, and fire.
- According to Aristotle, each element had a sphere to which it belonged and to which it would return if left undisturbed.
- The four elements of the Greek were mostly qualitative aspects of matter, not quantitative, as our modern elements are; "...True alchemy never regarded earth, air, water, and fire as corporeal or chemical substances in the present-day sense of the word.
- The four elements are simply the primary, and most general, qualities by means of which the amorphous and purely quantitative substance of all bodies first reveals itself in differentiated form." Later alchemists extensively developed the mystical aspects of this concept.

Hellenistic Egypt-Philosophy

- Alchemy coexisted alongside emerging Christianity. Lactantius believed Hermes Trismegistus had prophesied its birth. St Augustine later affirmed this in the 4th & 5th centuries, but also condemned Trismegistus for idolatry. Examples of Pagan, Christian, and Jewish alchemists can be found during this period.
- Most of the Greco-Roman alchemists preceding Zosimos are known only by pseudonyms, such as Moses, Isis, Cleopatra, Democritus, and Ostanes. Others authors such as Komarios, and Chymes, we only know through fragments of text. After AD 400, Greek alchemical writers occupied themselves solely in commenting on the works of these predecessors. By the middle of the 7th century alchemy was almost an entirely mystical discipline. It was at that time that Khalid Ibn Yazid sparked its migration from Alexandria to the Islamic world, facilitating the translation and preservation of Greek alchemical texts in the 8th and 9th centuries.

India

- The 2nd millennium BC text Vedas describe a connection between eternal life and gold. A considerable knowledge of metallurgy has been exhibited in a third-century AD text called Arthashastra which provides ingredients of explosives (Agniyoga) and salts extracted from fertile soils and plant remains (Yavakshara) such as saltpetre/nitre, perfume making (different qualities of perfumes are mentioned), granulated (refined) Sugar. Buddhist texts from the 2nd to 5th centuries mention the transmutation of base metals to gold. According to some scholars Greek alchemy may have influenced Indian alchemy but there are no hard evidences to back this claim.
- The 11th-century Persian chemist and physician Abū Rayhān Bīrūnī, who visited Gujarat as part of the court of Mahmud of Ghazni, reported that theyhave a science similar to alchemy which is quite peculiar to them, which in Sanskrit is called Rasāyana and in Persian Rasavātam. It means the art of obtaining/manipulating Rasa: nectar, mercury, and juice. This art was restricted to certain operations, metals, drugs, compounds, and medicines, many of which have mercury as their core element. Its principles restored the health of those who were ill beyond hope and gave back youth to fading old age.
- The goals of alchemy in India included the creation of a divine body (Sanskrit divya-deham) and immortality while still embodied (Sanskrit jīvan-mukti). Sanskrit alchemical texts include much material on the manipulation of mercury and sulphur, that are homologized with the semen of the god Śiva and the menstrual blood of the goddess Devī.

India

- Some early alchemical writings seem to have their origins in the Kaula tantric schools associated to the teachings of the personality of Matsyendranath. Other early writings are found in the Jaina medical treatise Kalyāṇakārakam of Ugrāditya, written in South India in the early 9th century.[46]
- Two famous early Indian alchemical authors were Nāgārjuna Siddha and Nityanātha Siddha. Nāgārjuna Siddha was a Buddhist monk. His book, Rasendramangalam, is an example of Indian alchemy and medicine. Nityanātha Siddha wrote Rasaratnākara, also a highly influential work. In Sanskrit, rasa translates to "mercury", and Nāgārjuna Siddha was said to have developed a method of converting mercury into gold.
- The contents of 39 Sanskrit alchemical treatises have been analysed in detail in G. Jan Meulenbeld's History of Indian Medical Literature (HIML) The discussion of these works in HIML gives a summary of the contents of each work, their special features, and where possible the evidence concerning their dating. Chapter 13 of HIML, Various works on rasaśāstra and ratnaśāstra (or Various works on alchemy and gems) gives brief details of a further 655 (six hundred and fifty-five) treatises. In some cases Meulenbeld gives notes on the contents and authorship of these works; in other cases references are made only to the unpublished manuscripts of these titles.

Islam

- After the fall of the Roman Empire, the focus of alchemical development moved to the Islamic World. Much more is known about Islamic alchemy because it was better documented: indeed, most of the earlier writings that have come down through the years were preserved as Arabic translations. The word alchemy itself was derived from the Arabic word al-kīmiyā (.(الكيمياءThe early Islamic world was a melting pot for alchemy. Platonic and Aristotelian thought, which had already been somewhat appropriated into hermetical science, continued to be assimilated during the late 7th and early 8th centuries through Syriac translations and scholarship.
- In the late ninth and early tenth centuries, the Arabic works attributed to Jābir ibn Hayyān (Latinized as "Geber" or "Geberus") introduced a new approach to alchemy. Paul Kraus, who wrote the standard reference work on Jabir, put it as follows:
- To form an idea of the historical place of Jabir's alchemy and to tackle the problem of its sources, it is advisable to compare it with what remains to us of the alchemical literature in the Greek language. One knows in which miserable state this literature reached us. Collected by Byzantine scientists from the tenth century, the corpus of the Greek alchemists is a cluster of incoherent fragments, going back to all the times since the third century until the end of the Middle Ages.

Islam

- The efforts of Berthelot and Ruelle to put a little order in this mass of literature led only to poor results, and the later researchers, among them in particular Mrs. Hammer-Jensen, Tannery, Lagercrantz, von Lippmann, Reitzenstein, Ruska, Bidez, Festugière and others, could make clear only few points of detail ....
- The study of the Greek alchemists is not very encouraging. An even surface examination of the Greek texts shows that a very small part only was organized according to true experiments of laboratory: even the supposedly technical writings, in the state where we find them today, are unintelligible nonsense which refuses any interpretation.
- It is different with Jabir's alchemy. The relatively clear description of the processes and the alchemical apparati, the methodical classification of the substances, mark an experimental spirit which is extremely far away from the weird and odd esotericism of the Greek texts. The theory on which Jabir supports his operations is one of clearness and of an impressive unity. More than with the other Arab authors, one notes with him a balance between theoretical teaching and practical teaching, between the 'ilm and the amal. In vain one would seek in the Greek texts a work as systematic as that which is presented, for example, in the Book of Seventy.

Islam

- Islamic philosophers also made great contributions to alchemical hermeticism. The most influential author in this regard was arguably Jabir. Jabir's ultimate goal was Takwin, the artificial creation of life in the alchemical laboratory, up to, and including, human life. He analyzed each Aristotelian element in terms of four basic qualities of hotness, coldness, dryness, and moistness. According to Jabir, in each metal two of these qualities were interior and two were exterior. For example, lead was externally cold and dry, while gold was hot and moist. Thus, Jabir theorized, by rearranging the qualities of one metal, a different metal would result. By this reasoning, the search for the philosopher's stone was introduced to Western alchemy. Jabir developed an elaborate numerology whereby the root letters of a substance's name in Arabic, when treated with various transformations, held correspondences to the element's physical properties.
- The elemental system used in medieval alchemy also originated with Jabir. His original system consisted of seven elements, which included the five classical elements (aether, air, earth, fire, and water) in addition to two chemical elements representing the metals: sulphur, "the stone which burns", which characterized the principle of combustibility, and mercury, which contained the idealized principle of metallic properties.[dubious – discuss][citation needed] Shortly thereafter, this evolved into eight elements, with the Arabic concept of the three metallic principles: sulphur giving flammability or combustion, mercury giving volatility and stability, and salt giving solidity. The atomic theory of corpuscularianism, where all physical bodies possess an inner and outer layer of minute particles or corpuscles, also has its origins in the work of Jabir.

East Asia

- Researchers have found evidence that Chinese alchemists and philosophers discovered complex mathematical phenomena that were shared with Arab alchemists during the medieval period. Discovered in BC China, the "magic square of three" was propagated to followers of Abū Mūsā Jābir ibn Ḥayyān at some point over the proceeding several hundred years. Other commonalities shared between the two alchemical schools of thought include discrete naming for ingredients and heavy influence from the natural elements. The silk road provided a clear path for the exchange of goods, ideas, ingredients, religion, and many other aspects of life with which alchemy is intertwined.
- Whereas European alchemy eventually centered on the transmutation of base metals into noble metals, Chinese alchemy had a more obvious connection to medicine. The philosopher's stone of European alchemists can be compared to the Grand Elixir of Immortality sought by Chinese alchemists. In the hermetic view, these two goals were not unconnected, and the philosopher's stone was often equated with the universal panacea; therefore, the two traditions may have had more in common than initially appears.

East Asia

- As early as 317 AD, Ge Hong documented the use of metals, minerals, and elixirs in early Chinese medicine. Hong identified three ancient Chinese documents, titled Scripture of Great Clarity, Scripture of the Nine Elixirs, and Scripture of the Golden Liquor, as texts containing fundamental alchemical information. He also described alchemy, along with meditation, as the sole spiritual practices that could allow one to gain immortality or to transcend. In his work Inner Chapters of the Book of the Master Who Embraces Spontaneous Nature (317 AD), Hong argued that alchemical solutions such as elixirs were preferable to traditional medicinal treatment due to the spiritual protection they could provide. In the centuries following Ge Hong's death, the emphasis placed on alchemy as a spiritual practice among Chinese Daoists was reduced. In 499 AD, Tao Hongjing refuted Hong's statement that alchemy is as important a spiritual practice as Shangqing meditation. While Hongjing did not deny the power of alchemical elixirs to grant immortality or provide divine protection, he ultimately the found the Scripture of the Nine Elixirs to be ambiguous and spiritually unfulfilling, aiming to implement more accessible practicing techniques.

East Asia

- In the early 700s, Neidan (also known as internal alchemy) was adopted by Daoists as a new form of alchemy. Neidan emphasized appeasing the inner gods that inhabit the human body by practicing alchemy with compounds found in the body, rather than the mixing of natural resources that was emphasized in early Dao alchemy. For example, saliva was often considered nourishment for the inner gods and didn't require any conscious alchemical reaction to produce. The inner gods were not thought of as physical presences occupying each person, but rather a collection of deities that are each said to represent and protect a specific body part or region. Although those who practiced Neidan prioritized meditation over external alchemical strategies, many of the same elixirs and constituents from previous Daoist alchemical schools of thought continued to be utilized in tandem with meditation. Eternal life remained a consideration for Neidan alchemists, as it was believed that one would become immortal if an inner god were to be immortalized within them through spiritual fulfillment.
- Black powder may have been an important invention of Chinese alchemists. It is said that the Chinese invented gunpowder while trying to find a potion for eternal life. Described in 9th-century texts[citation needed] and used in fireworks in China by the 10th century,[citation needed] it was used in cannons by 1290.[citation needed] From China, the use of gunpowder spread to Japan, the Mongols, the Muslim world, and Europe. Gunpowder was used by the Mongols against the Hungarians in 1241, and in Europe by the 14th century.

East Asia

- Chinese alchemy was closely connected to Taoist forms of traditional Chinese medicine, such as Acupuncture and Moxibustion. In the early Song dynasty, followers of this Taoist idea (chiefly the elite and upper class) would ingest mercuric sulfide, which, though tolerable in low levels, led many to suicide.[citation needed] Thinking that this consequential death would lead to freedom and access to the Taoist heavens, the ensuing deaths encouraged people to eschew this method of alchemy in favor of external sources (the aforementioned Tai Chi Chuan,mastering of the qi, etc.)
- Chinese alchemy was introduced to the West by Obed Simon Johnson.

Western Europe

- The introduction of alchemy to Latin Europe may be dated to 11 February 1144, with the completion of Robert of Chester's translation of the Liber de compositione alchemiae ("Book of the Composition of Alchemy") from an Arabic work attributed to Khalid ibn Yazid. Although European craftsmen and technicians pre-existed, Robert notes in his preface that alchemy (here still referring to the elixir rather than to the art itself) was unknown in Latin Europe at the time of his writing. The translation of Arabic texts concerning numerous disciplines including alchemy flourished in 12th-century Toledo, Spain, through contributors like Gerard of Cremona and Adelard of Bath. Translations of the time included the Turba Philosophorum, and the works of Avicenna and Muhammad ibn Zakariya al-Razi. These brought with them many new words to the European vocabulary for which there was no previous Latin equivalent. Alcohol, carboy, elixir, and athanor are examples.
- Meanwhile, theologian contemporaries of the translators made strides towards the reconciliation of faith and experimental rationalism, thereby priming Europe for the influx of alchemical thought. The 11th-century St Anselm put forth the opinion that faith and rationalism were compatible and encouraged rationalism in a Christian context. In the early 12th century, Peter Abelard followed Anselm's work, laying down the foundation for acceptance of Aristotelian thought before the first works of Aristotle had reached the West. In the early 13th century, Robert Grosseteste used Abelard's methods of analysis and added the use of observation, experimentation, and conclusions when conducting scientific investigations. Grosseteste also did much work to reconcile Platonic and Aristotelian thinking.

Western Europe

- Through much of the 12th and 13th centuries, alchemical knowledge in Europe remained centered on translations, and new Latin contributions were not made. The efforts of the translators were succeeded by that of the encyclopaedists.
- In the 13th century, Albertus Magnus and Roger Bacon were the most notable of these, their work summarizing and explaining the newly imported alchemical knowledge in Aristotelian terms. Albertus Magnus, a Dominican friar, is known to have written works such as the Book of Minerals where he observed and commented on the operations and theories of alchemical authorities like Hermes and Democritus and unnamed alchemists of his time. Albertus critically compared these to the writings of Aristotle and Avicenna, where they concerned the transmutation of metals. From the time shortly after his death through to the 15th century, more than 28 alchemical tracts were misattributed to him, a common practice giving rise to his reputation as an accomplished alchemist. Likewise, alchemical texts have been attributed to Albert's student Thomas Aquinas.

Western Europe

- Roger Bacon, a Franciscan friar who wrote on a wide variety of topics including optics, comparative linguistics, and medicine, composed his Great Work (Latin: Opus Majus) for Pope Clement IV as part of a project towards rebuilding the medieval university curriculum to include the new learning of his time. While alchemy was not more important to him than other sciences and he did not produce allegorical works on the topic, he did consider it and astrology to be important parts of both natural philosophy and theology and his contributions advanced alchemy's connections to soteriology and Christian theology. Bacon's writings integrated morality, salvation, alchemy, and the prolongation of life. His correspondence with Clement highlighted this, noting the importance of alchemy to the papacy. Like the Greeks before him, Bacon acknowledged the division of alchemy into practical and theoretical spheres. He noted that the theoretical lay outside the scope of Aristotle, the natural philosophers, and all Latin writers of his time. The practical confirmed the theoretical, and Bacon advocated its uses in natural science and medicine. In later European legend, he became an archmage. In particular, along with Albertus Magnus, he was credited with the forging of a brazen head capable of answering its owner's questions.

Western Europe

- Soon after Bacon, the influential work of Pseudo-Geber (sometimes identified as Paul of Taranto) appeared. His Summa Perfectionis remained a staple summary of alchemical practice and theory through the medieval and renaissance periods. It was notable for its inclusion of practical chemical operations alongside sulphur-mercury theory, and the unusual clarity with which they were described.
- By the end of the 13th century, alchemy had developed into a fairly structured system of belief. Adepts believed in the macrocosm-microcosm theories of Hermes, that is to say, they believed that processes that affect minerals and other substances could have an effect on the human body (for example, if one could learn the secret of purifying gold, one could use the technique to purify the human soul). They believed in the four elements and the four qualities as described above, and they had a strong tradition of cloaking their written ideas in a labyrinth of coded jargon set with traps to mislead the uninitiated. Finally, the alchemists practiced their art: they actively experimented with chemicals and made observations and theories about how the universe operated. Their entire philosophy revolved around their belief that man's soul was divided within himself after the fall of Adam. By purifying the two parts of man's soul, man could be reunited with God.

Western Europe

- In the 14th century, alchemy became more accessible to Europeans outside the confines of Latin speaking churchmen and scholars. Alchemical discourse shifted from scholarly philosophical debate to an exposed social commentary on the alchemists themselves.[80] Dante, Piers Plowman, and Chaucer all painted unflattering pictures of alchemists as thieves and liars. Pope John XXII's 1317 edict, Spondent quas non-exhibent forbade the false promises of transmutation made by pseudo-alchemists.
- Roman Catholic Inquisitor General Nicholas Eymerich's Directorium Inquisitorum, written in 1376, associated alchemy with the performance of demonic rituals, which Eymerich differentiated from magic performed in accordance with scripture. This did not, however, lead to any change in the Inquisition's monitoring or prosecution of alchemists. In 1403, Henry IV of England banned the practice of multiplying metals (although it was possible to buy a licence to attempt to make gold alchemically, and a number were granted by Henry VI and Edward IV). These critiques and regulations centered more around pseudo-alchemical charlatanism than the actual study of alchemy, which continued with an increasingly Christian tone. The 14th century saw the Christian imagery of death and resurrection employed in the alchemical texts of Petrus Bonus, John of Rupescissa, and in works written in the name of Raymond Lull and Arnold of Villanova.

Western Europe

- Nicolas Flamel is a well-known alchemist to the point where he had many pseudepigraphic imitators. Although the historical Flamel existed, the writings and legends assigned to him only appeared in 1612. Flamel was not a religious scholar as were many of his predecessors, and his entire interest in the subject revolved around the pursuit of the philosopher's stone. His work spends a great deal of time describing the processes and reactions, but never actually gives the formula for carrying out the transmutations. Most of 'his' work was aimed at gathering alchemical knowledge that had existed before him, especially as regarded the philosopher's stone. Through the 14th and 15th centuries, alchemists were much like Flamel: they concentrated on looking for the philosophers' stone. Bernard Trevisan and George Ripley made similar contributions. Their cryptic allusions and symbolism led to wide variations in interpretation of the art.
- A common idea in European alchemy in the medieval era was a metaphysical "Homeric chain of wise men that link[ed] heaven and earth" that included ancient pagan philosophers and other important historical figures.

Western Europe

- During the Renaissance, Hermetic and Platonic foundations were restored to European alchemy. The dawn of medical, pharmaceutical, occult, and entrepreneurial branches of alchemy followed.
- In the late 15th century, Marsilio Ficino translated the Corpus Hermeticum and the works of Plato into Latin. These were previously unavailable to Europeans who for the first time had a full picture of the alchemical theory that Bacon had declared absent. Renaissance Humanism and Renaissance Neoplatonism guided alchemists away from physics to refocus on mankind as the alchemical vessel.
- Esoteric systems developed that blended alchemy into a broader occult Hermeticism, fusing it with magic, astrology, and Christian cabala. A key figure in this development was German Heinrich Cornelius Agrippa (1486–1535), who received his Hermetic education in Italy in the schools of the humanists. In his De Occulta Philosophia, he attempted to merge Kabbalah, Hermeticism, and alchemy. He was instrumental in spreading this new blend of Hermeticism outside the borders of Italy.

Western Europe

- Paracelsus (Philippus Aureolus Theophrastus Bombastus von Hohenheim, 1493–1541) cast alchemy into a new form, rejecting some of Agrippa's occultism and moving away from chrysopoeia. Paracelsus pioneered the use of chemicals and minerals in medicine and wrote, "Many have said of Alchemy, that it is for the making of gold and silver. For me such is not the aim, but to consider only what virtue and power may lie in medicines.“
- His hermetical views were that sickness and health in the body relied on the harmony of man the microcosm and Nature the macrocosm. He took an approach different from those before him, using this analogy not in the manner of soul-purification but in the manner that humans must have certain balances of minerals in their bodies, and that certain illnesses of the body had chemical remedies that could cure them. Iatrochemistry refers to the pharmaceutical applications of alchemy championed by Paracelsus.

Western Europe

- John Dee (13 July 1527 – December, 1608) followed Agrippa's occult tradition. Although better known for angel summoning, divination, and his role as astrologer, cryptographer, and consultant to Queen Elizabeth I, Dee's alchemical[95] Monas Hieroglyphica, written in 1564 was his most popular and influential work. His writing portrayed alchemy as a sort of terrestrial astronomy in line with the Hermetic axiom As above so below. During the 17th century, a short-lived "supernatural" interpretation of alchemy became popular, including support by fellows of the Royal Society: Robert Boyle and Elias Ashmole. Proponents of the supernatural interpretation of alchemy believed that the philosopher's stone might be used to summon and communicate with angels.
- Entrepreneurial opportunities were common for the alchemists of Renaissance Europe. Alchemists were contracted by the elite for practical purposes related to mining, medical services, and the production of chemicals, medicines, metals, and gemstones.[98] Rudolf II, Holy Roman Emperor, in the late 16th century, famously received and sponsored various alchemists at his court in Prague, including Dee and his associate Edward Kelley. King James IV of Scotland, Julius, Duke of Brunswick-Lüneburg, Henry V, Duke of Brunswick-Lüneburg, Augustus, Elector of Saxony, Julius Echter von Mespelbrunn, and Maurice, Landgrave of Hesse-Kassel all contracted alchemists. John's son Arthur Dee worked as a court physician to Michael I of Russia and Charles I of England but also compiled the alchemical book Fasciculus Chemicus.

Western Europe

- Although most of these appointments were legitimate, the trend of pseudo-alchemical fraud continued through the Renaissance. Betrüger would use sleight of hand, or claims of secret knowledge to make money or secure patronage. Legitimate mystical and medical alchemists such as Michael Maier and Heinrich Khunrath wrote about fraudulent transmutations, distinguishing themselves from the con artists.[101] False alchemists were sometimes prosecuted for fraud.
- The terms "chemia" and "alchemia" were used as synonyms in the early modern period, and the differences between alchemy, chemistry and small-scale assaying and metallurgy were not as neat as in the present day. There were important overlaps between practitioners, and trying to classify them into alchemists, chemists and craftsmen is anachronistic

Western Europe

- For example, Tycho Brahe (1546–1601), an alchemist better known for his astronomical and astrological investigations, had a laboratory built at his Uraniborg observatory/research institute.
- Michael Sendivogius (Michał Sędziwój, 1566–1636), a Polish alchemist, philosopher, medical doctor and pioneer of chemistry wrote mystical works but is also credited with distilling oxygen in a lab sometime around 1600. Sendivogious taught his technique to Cornelius Drebbel who, in 1621, applied this in a submarine.
- Isaac Newton devoted considerably more of his writing to the study of alchemy (see Isaac Newton's occult studies) than he did to either optics or physics.
- Other early modern alchemists who were eminent in their other studies include Robert Boyle, and Jan Baptist van Helmont. Their Hermeticism complemented rather than precluded their practical achievements in medicine and science.

Western Europe

- During the occult revival of the early 19th century, alchemy received new attention as an occult science. The esoteric or occultist school, which arose during the 19th century, held (and continues to hold) the view that the substances and operations mentioned in alchemical literature are to be interpreted in a spiritual sense, and it downplays the role of the alchemy as a practical tradition or protoscience.
- This interpretation further forwarded the view that alchemy is an art primarily concerned with spiritual enlightenment or illumination, as opposed to the physical manipulation of apparatus and chemicals, and claims that the obscure language of the alchemical texts were an allegorical guise for spiritual, moral or mystical processes.

Western Europe

- In the 19th-century revival of alchemy, the two most seminal figures were Mary Anne Atwood and Ethan Allen Hitchcock, who independently published similar works regarding spiritual alchemy. Both forwarded a completely esoteric view of alchemy, as Atwood claimed: "No modern art or chemistry, notwithstanding all its surreptitious claims, has any thing in common with Alchemy." Atwood's work influenced subsequent authors of the occult revival including Eliphas Levi, Arthur Edward Waite, and Rudolf Steiner. Hitchcock, in his Remarks Upon Alchymists (1855) attempted to make a case for his spiritual interpretation with his claim that the alchemists wrote about a spiritual discipline under a materialistic guise in order to avoid accusations of blasphemy from the church and state. In 1845, Baron Carl Reichenbach, published his studies on Odic force, a concept with some similarities to alchemy, but his research did not enter the mainstream of scientific discussion.
- In 1946, Louis Cattiaux published the Message Retrouvé, a work that was at once philosophical, mystical and highly influenced by alchemy. In his lineage, many researchers, including Emmanuel and Charles d'Hooghvorst, are updating alchemical studies in France and Belgium.

Core Concepts

- Western alchemical theory corresponds to the worldview of late antiquity in which it was born. Concepts were imported from Neoplatonism and earlier Greek cosmology. As such, the classical elements appear in alchemical writings, as do the seven classical planets and the corresponding seven metals of antiquity. Similarly, the gods of the Roman pantheon who are associated with these luminaries are discussed in alchemical literature. The concepts of prima materia and anima mundi are central to the theory of the philosopher's stone.
- Magnum opus: The Great Work of Alchemy is often described as a series of four stages represented by colors.
- nigredo, a blackening or melanosis
- albedo, a whitening or leucosis
- citrinitas, a yellowing or xanthosis
- rubedo, a reddening, purpling, or iosis

Psychology and Alchemy

- Alchemical symbolism has been important in analytical psychology and was revived and popularized from near extinction by the Swiss psychologist Carl Gustav Jung. Jung was initially confounded and at odds with alchemy and its images but after being given a copy of **The Secret of the Golden Flower**, a Chinese alchemical text translated by his friend Richard Wilhelm, he discovered a direct correlation or parallel between the symbolic images in the alchemical drawings and the inner, symbolic images coming up in his patients' dreams, visions, or fantasies. He observed these alchemical images occurring during the psychic process of transformation, a process that Jung called "individuation." Specifically, he regarded the conjuring up of images of gold or Lapis as symbolic expressions of the origin and goal of this "process of individuation."
- .

Psychology and Alchemy

- Together with his alchemical mystica soror (mystical sister) Jungian Swiss analyst Marie-Louise von Franz, Jung began collecting old alchemical texts, compiled a lexicon of key phrases with cross-references, and pored over them. The volumes of work he wrote shed new light onto understanding the art of transubstantiation and renewed alchemy's popularity as a symbolic process of coming into wholeness as a human being where opposites are brought into contact and inner and outer, spirit and matter are reunited in the hieros gamos, or divine marriage. His writings are influential in general psychology, but especially to those who have an interest in understanding the importance of dreams, symbols, and the unconscious archetypal forces (archetypes) that comprise all psychic life.
- Both von Franz and Jung have contributed significantly to the subject and work of alchemy and its continued presence in psychology as well as contemporary culture. Among the volumes Jung wrote on alchemy, his magnum opus is Volume 14 of his Collected Works, **Mysterium Coniunctionis.**