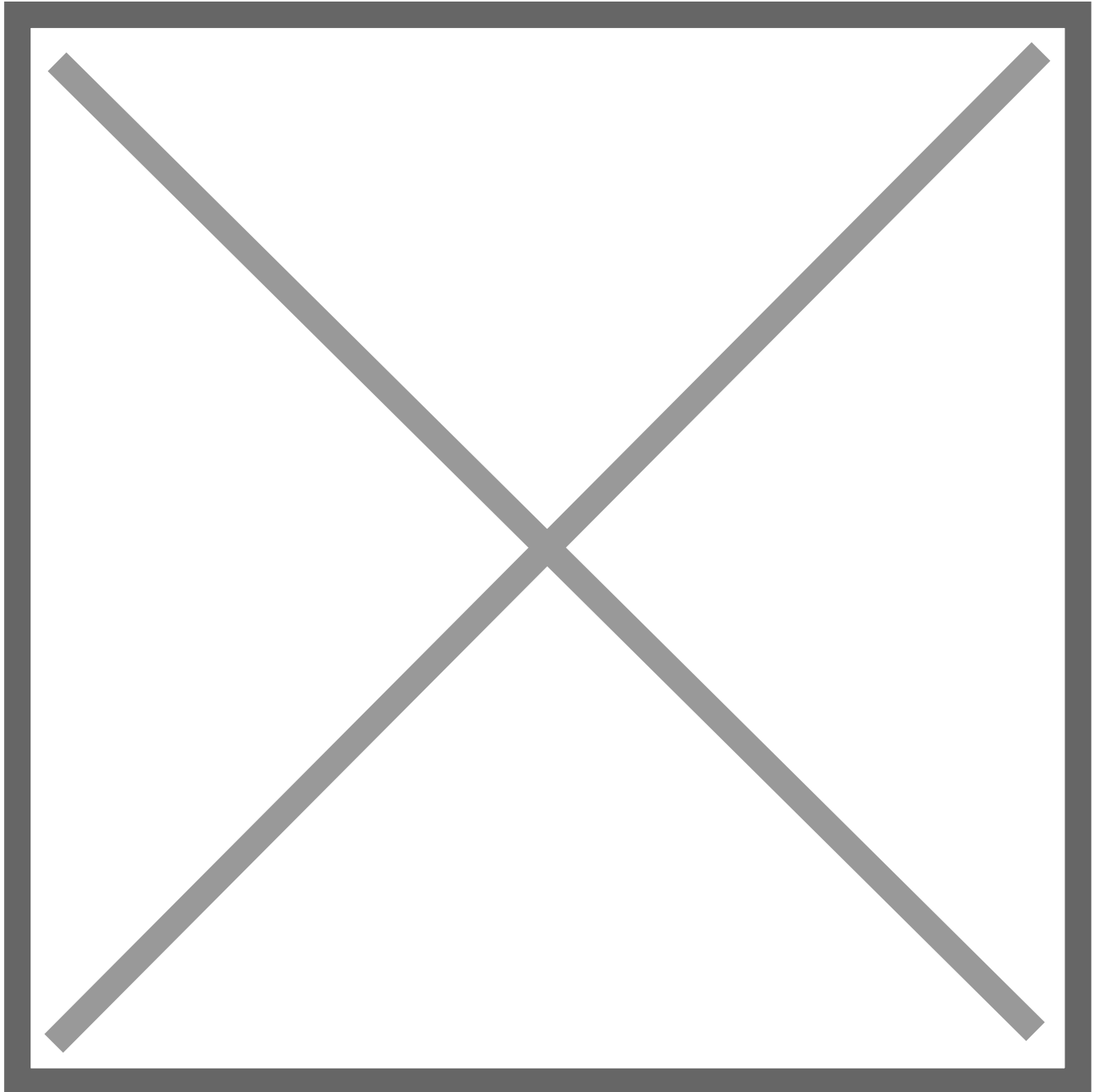


33 Roger Bacon

Roger Bacon (1219 - 1292) was also a monk (Franciscan friar) teaching at the University of Paris. He was the Aristotle lecturer there. Needless to say he was also an Aristotelian, and wrote after the manner of Aristotle.



Woodcut of Bacon presenting a work to the Chancellors of the University of Paris.

Bacon had a very fertile imagination, and also a good sense of referencing quotations and ideas. For these alone he is considered by some (not me) one of the early fathers of science. This may be

because of a confusion with Francis Bacon 400 years later. The magnitude of Bacon's contributions to science are debatable. He strikes me as one of the best summarizers of Arabic alchemy.

His contemporary reputation was large enough that he became the stuff of legends: he was reputed to do sorcery and necromancy, to "make women of devils." Documents report that Bacon invented the compound microscope and telescope and had observed the nuclei of cells, bespeaking the credulity of the times.

Bacon considered theology the "queen of the sciences" and that tangible knowledge was superior to philosophical knowledge.

Bacon differentiated between "speculative" and "practical" alchemy; speculative alchemy...

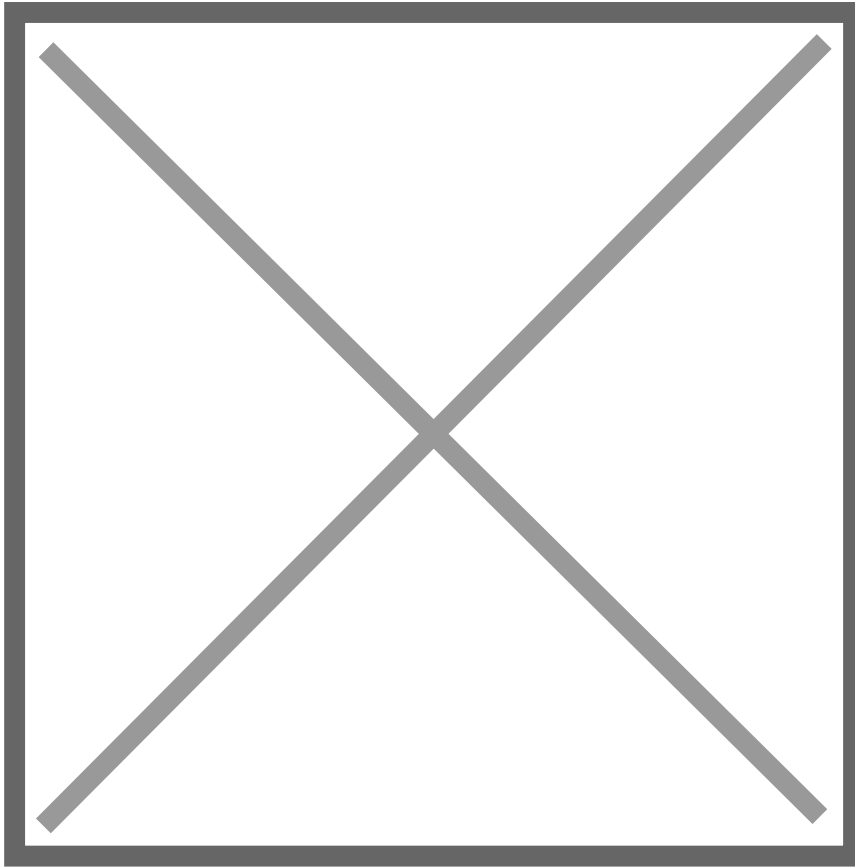
“...treats of the generation of things from the elements and of all inanimate things and of simple and composite humours, of common stones, gems, marbles, of gold and other metals, of sulphurs and salts and pigments, of lapis lazuli and minium and other colours, of oils and burning bitumens and other things without limit, concerning which we have nothing in the books of Aristotle. Nor do the natural philosophers know of these, nor the whole assembly of Latin writers. And because this science is not known to the generality of students it necessarily follows that they are ignorant of all that depends upon it concerning natural things, namely of the generation of animate things, of plants and animals and men, for being ignorant of what comes before they are necessarily ignorant of what follows.

Practical alchemy, on the other hand,

“which teaches how to make the noble metals, and colours, and many other things better or more abundantly by art than they are made in nature. And the science of this kind is greater than all those preceding because it produces greater utilities. For not only can it yield wealth and very many other things for the public good, but it also teaches how to discover such things as are capable of prolonging human life for much longer periods than can be accomplished by nature.... It confirms theoretical alchemy through its works and therefore confirms natural philosophy and medicine, and this is plain from the books of the physicians. For these authors teach how to sublime, distil and resolve their medicines, and by many other methods according to the operation of that science, as is clear in health-giving waters, oils and many other things.

This gives us an idea of what Bacon thought of experiment as a source of knowledge, and the reliability of observation. He does not, however, move very far from the Aristotelian alchemists; he minimized the role of Prime Matter, but is quite accepting of transmutation and the Mercury-Sulfur

theory direct from Avicenna (who interpreted the theory from Jabir, save without the numerology).



Remarkably his insight into the future never fails to catch the imaginations of the young in our day:

“ Machines for navigation can be made without rowers so that the largest ships on rivers or seas will be moved by a single man in charge with greater velocity than if they were full of men. Also cars can be made so that without animals they will move with unbelievable rapidity; such we opine were the scythe-bearing chariots with which the men of old fought. Also flying machines can be constructed so that a man sits in the midst of the machine revolving some engine by which artificial wings are made to beat the air like a flying bird. Also a machine small in size for raising or lowering enormous weights, than which nothing is more useful in emergencies. For by a machine three fingers high and wide and of less a man could free himself and his friends from all danger of prison, and rise and descend. Also a machine can easily be made by which one man can draw a thousand to himself by violence against their wills, and attract other things in like manner. Also machines can be made for walking in the sea and rivers, even to the bottom without danger. For Alexander the Great employed such, that he might see the secrets of the deep, as Ethicus the astronomer tells. These machines were made in antiquity and they have certainly been made in our times except possibly a flying machine which I have not seen nor do I know of any one who has, but I know an expert who has

thought out the way to make one. And such things can be made almost without limit, for instance, bridges across rivers without piers or other supports, and mechanisms, and unheard-of engines.

His disagreeableness got him into trouble with his order, and he was placed in confinement in Paris for fourteen years toward the end of his life.

“ I have laboured from my youth in the sciences and languages, and for the furtherance of study, getting together much that is useful. I sought the friendship of all wise men among the Latins, and caused youth to be instructed in languages and geometric figures, in numbers and tables and instruments, and many needful matters. I examined everything useful to the purpose, and I know how to proceed, and with what means, and what are the impediments: but I cannot go on for lack of the necessary funds. Through the twenty years in which I laboured specially in the study of wisdom, careless of the crowd’s opinion, I spent more than two thousand livres [about £10,000] in these pursuits on occult books (*libros secretos*) and various experiments, and languages and instruments, and tables and other things.

From *Radix Mundi*: translated by Willian Salmon as part of *Medicina Practica, or Practical Physics* (London, 1692). As you read Roger Bacon, it becomes evident that he is reading the Arabic himself, not relying on translations; he is using Arabic names that differ from those used in the translations.

“ Chap. 37: Of the Original of Metals, and Principles of the Mineral Work.

1. The bodies of all natural things being as well perfect as imperfect from the original of time, and compounded of a quaternity of elements or natures, viz. fire, air, earth, water, are conjoynd by God Almighty in a perfect unity.
2. In these four elements is hid the secret of Philosophers: the earth and water give corporeity and visibility; the fire and air, the spirit and invisible power, which cannot be seen or touched but in the other two.
3. When these four elements are conjoynd and made to exist in one, they become another thing; whence it is evident, that all things in nature are composed of the said elements, being altered and changed.
4. So saith *Rhasis, Simple Generation, and Natural Transformation is the Operation of the Elements.*

5. But it is necessary, that the elements be of one kind, and not divers, to wit, Simple: For otherwise neither action nor passion could happen between them: So saith *Aristotle*, *There is no true Generation, but of things agreeing in Nature*. So that things be not made but according to their natures.

6. The elder or oak trees will not bring forth pears; nor can you gather grapes of thorns, or figs of thistles; things bring not forth, but only their like, or what agrees with them in nature, each tree its own fruit.

7. Our secret therefore is to be drawn only out of those things in which it is. You cannot extract it out of stones or salt, or other heterogene bodies: neither salt nor alum enters into our mystery. But as *Theophrastus* saith, *The Philosophers disguise with Salts and Alums, the Places of the Elements*.

8. If you prudently desire to make our Elixir, you must extract it from a mineral root: for as *Geber* saith, *You must obtain the perfection of the Matter from the Seeds thereof*.

9. Sulphur and mercury are the mineral roots and natural principles upon which nature her self acts and works in the mines and caverns of the earth, which are viscous water, and subtil spirit running through the pores, veins, and bowels of the mountains.

10. Of them is produced a vapour or cloud, which is the substance and body of metals united, ascending, and reverberating upon its own proper earth, (as *Geber* sheweth) even till by a temperate digestion through the space of a thousand years, the matter is fixed and converted into a mineral stone, of which metals are made.

11. In the same manner of Sol which is our sulphur, being reduced into mercury by mercury, which is the viscous water made thick, and mixt with its proper earth, by a temperate decoction and digestion, ariseth the vapour or cloud, agreeing in nature and substance with that in the bowels of the earth.

12. This afterwards is turned into most subtil water, which is called the soul, spirit, and tincture, as we shall hereafter shew.

13. When this water is returned into the earth, (out of which it was drawn) and every way spreads through or is mixed with it, as its proper womb, it becomes fixed. Thus the wise man does that by Art in a short time, which Nature cannot perform in less than the revolution of a thousand years.

14. Yet notwithstanding, it is not we that make the metal, but Nature herself that does it. Nor do or can we change one thing into another; but it is Nature that changes them; we are no more than meer servants in the work.

15. Therefore *Medus* in *Turba Philosophorum*, saith, *Our stone naturally contains in it the whole tincture*. It is perfectly made in the mountains and body of the earth; yet of it self (without Art) it has no life or power whereby to move the elements.

16. Chuse then the natural minerals, to which, by the advice of *Aristotle*, add Art: For Nature generates metaline bodies of the vapours, clouds, or fumes, of sulphur and mercury, to which all the Philosophers agree. Know therefore the principles upon which Art works, to wit, the principles or beginnings of metals: for he that knows not these things shall never attain to the perfection of the work.

17. *Geber* saith, *He who has not in himself the knowledge of the Natural Principles, is far from attaining the perfection of the Art*: being ignorant of the mineral root upon which he should work.

18. *Geber* also farther saith *That our Art is only to be understood and Learned through the true wisdom and knowledge of natural things*: that is, with a wisdom searching into the roots and natural principles of the matter.

19. Yet saith he, my Son, I shew thee a secret, though thou knowest the principles, yet therein thou canst not follow Nature in all things. Herein some have erred, in essaying to follow Nature in all her properties and differences.

Chap. 38: Of Mercury, the Second Principle of the Work.

1. The second principle of our Stone is called Mercury, which some Philosophers call (as it is simple of it self) a Stone. One of them said, *This is a Stone, and no Stone, and that without which Nature never performs any thing; which enters into, or is swallowed up of other Bodies, and also swallows them up*.

2. This is simply argent vive, which contains the essential power, which explicates the tincture of our Elixir or Philosophers Stone.

3. Therefore saith *Rhasis*, *such a thing may be made of it which exceedeth the highest perfection of Nature*. For it is the root of metals, harmonises with them, and is the medium that explicates and conjoyns the tincture.

4. Wherefore our Stone is called Natural, or Mineral, Vegetable, and Animal, for it is generated in the mines, and is the mother or womb of all metals, and by projection converts into metals; it springs or grows like a vegetable: and abounds with life like an animal, by piercing with its tincture, like spirit and life, every where, and through all particles.

5. *Morien* saith, *This Stone is no Stone that can Generate a living Creature.* Another saith, *It is cast out upon the Dunghill as a vile thing, and is hidden from the Eyes or understandings of Ignorant Men.*

6. Also in *Libro Speculi Alchymiae*, it is said, *Our Stone is a thing rejected, but found in Dunghills* (i.e. in putrefaction, or the matter being putrefied) *containing in itself the four elements, over which it triumphs, and is certainly to be perfected by humane industry.*

Chap. 39: Of the Purification of the Metals and Mercury for our Work.

1. This is a great and certain truth, that the clean ought to be separated from the unclean, for nothing can give that which it has not. For the pure substance is of one simple essence, void of all heterogeneity, but that which is impure and unclean consists of heterogeneous parts, is not simple, but compounded (to wit of pure and impure) and apt to putrify and corrupt.

2. Therefore let nothing enter into your composition which is alien or foreign to the matter (as all impurity is), for nothing goes to the composition of our Stone that proceedeth not from it, neither in part nor in whole.

4. The Citrine bodies (as *Sol*, &c.) you must purge by calcination or cementation; and it is then purged or purified if it be fine and florid.

5. The metal being well cleansed, beat it into thin plates or leaves (as is leaf gold) and reserve them for use.

6. The White Liquor (as mercury) contains two superfluities, which must necessarily be removed from it, viz. its foetid *earthiness*, which hinders its fusion, and its *humidity*, which causes its flying.

7. The earthiness is thus removed. Put it into a marble or wooden mortar, with its equal weight of pure fine and dry salt and a little vinegar. Grind all with the pestle till nothing of the matter appears, but the whole salt becomes very black. Wash this whole matter with pure water till the salt is dissolved; this filthy water decant, and put to the mercury again as much more salt and vinegar, grinding it as before, and washing it with fair water, which work so often repeat, till the water comes clear from it, and that the mercury remains pure bright and clear . . .

9. *Rhasis* saith, Those Bodies come nearest to perfection, which contain most Argent Vive: he farther saith, That the Philosophers hid nothing but weight and measure, to wit, the proportions of the ingredients, which is clear, for that none of them all agree one with another therein, which causeth great error.

10. Though the matters be well prepared and well mixed, without the proportions or quantities of the things be just, and according to the reason of the work, you will miss of the truth, or the end, and lose all your labour; you will not indeed bring anything to perfection.

11. And this is evident in the examination: when there is a transmutation of the body or that the body is changed, then let it be put into the Cineritium or Test, and then it will be consumed or otherwise remain; according as the proportions are more or less than just; or just as they ought to be.

12. If they be right and just, according to the reason of that, your body will be incorruptible and remain firm, without any loss, through all essays and tryals; you can do nothing in this work without the true knowledge of this thing, whose foundation is natural matter, purity of substance, and right reason or proportion.

Chap. 40: Of the Conjunction of the Principles, in order to [achieve] this great Work.

1. *Euclid* the Philosopher, and a man of great understanding, advises to work in nothing but in *Sol* and *Mercury*; which joyned together make the wonderful and admirable Philosophers Stone, as *Rhasis* saith: White and Red, both proceed from one Root; no other Bodies coming between them.

4. For being broken and made one, they have in themselves the whole tincture both of the agent and patient. Wherefore saith *Rhasis*, make a Marriage (that is a Conjunction) between the *Red Man* and his *White Wife*, and you shall have the whole secret.

5. The same saith *Merlin*: *If you Marry the White Woman to the Red Man, they will be Conjoyned and Imbrace one another, and become impregnated. By themselves they are Dissolved, and by themselves they bring forth what they have conceived, whereby the two are made but one Body.*

6. And truly our Dissolution is only the reducing the hard body into a liquid form, and into the nature of Argent Vive, that the saltness of the *sulphur* may be diminished.

8. And therefore in the *Speculum Alchymiae* it is said, *The first work is the reducing the Body into Water, that is into Mercury.* And this the Philosophers called Dissolution, which is the foundation of the whole art.

10. Wherefore saith *Rhasis*, the work of making our Stone is, that the matter be put into its proper Vessel, and continually Decocted and Digested, until such time as it wholly Ascends, or sublimes to the top thereof.

11. This is declared in [the] *Speculum Philosophorum*. The *Philosophers Stone* is converted from a vile thing, into a pretious Substance: for the *Semen Solare*, is cast into the Matrix of Mercury, by Copulation or Conjunction, whereby in process of time they be made one.

14. And *Geber* saith, all ought to be made of Mercury only: for when *Sol* is reduced to its first Original or Matter, by Mercury, then Nature embraceth Nature.

Chap. 41: Of the Vessel, Lute, Closing, and Times of the Philosophick Work.

1. The vessel for our Stone is but one, in which the whole Magistery or Elixir is performed and perfected; this is a Cucurbit, whose bottom is round like an egg, or an urinal, smooth within, that it may ascend and descend the more easily, covered with a *Limbeck* round and smooth everywhere, and not very high, and whose bottom is round also like an egg.

2. Its largeness ought to be such that the Medicine or matter may not fill above a fourth part of it, made of strong double glass, clear and transparent, that you may see through it, all the colours appertaining to, and appearing in the work; in which the spirit moving continually, cannot pass or flie away.

3. Let it also be so closed, that as nothing can go out of it, so nothing can enter into it: as *Lucas* saith, *Lute the Vessel strongly with Lutum Sapientiæ*, that nothing may get in or go out of it.

4. For if the Flowers, or matter subliming, should breathe out, or any strange air or matter enter in, your work will be spoiled and lost.

5. And though the Philosophers oftentimes say that the matter is to be put into the vessel and closed up fast, yet it is sufficient for the operator, once to put the said matter in, once to close it up, and so to keep it even to the very perfection and finishing of the work. If these things be often repeated, the work will be spoiled.

6. Therefore saith *Rhasis*, keep your Vessel continually close, encompassed with Dew, [which demonstrates what kind of Heat you are to use] and so well Luted that none of the Flowers, or that which sublimes, may get out, or vanish in Vapor or Fume.

8. Also another Philosopher in his *Breveiloquium* saith, as there are three things in a natural Egg, viz. the Shell, the White, and the Yolk, so likewise there are three things corresponding to the Philosophers Stone, the Glass Vessel, the White liquor, and the Citrine Body.

9. And as of the yolk and white, with a little heat, a Bird is made (the shell being whole, until the coming forth or hatching of the chicken) so it is in the work of the Philosophers Stone. Of the citrine body and white liquor with a temperate or gentle heat is made the *Avis Hermetis*, or Philosophers Bird.

Chap. 42: Of the Philosophers Fire, the kinds and Government thereof.

1. The Philosophers have described in their books a two fold fire, a *moist* and a *dry*.

2. The *moist fire* they called the warm *Horse Belly*, in the which, so long as the humidity remains, the heat is retained; but the humidity being consumed, the heat vanishes and ceases, which heat being small, seldom lasts above five or six days: but it may be conserved and renewed, by casting upon it many times urine mixt [with] salt.

5. *Altudenus* the Philosopher saith likewise, *you must hide your Medicine in Horse dung, which is the fire of the Philosophers*, for this dung is hot, moist, and dark, having a humidity in it self, and an excellent light [or whiteness].

8. The *dry fire* is the fire of the bodies themselves; and the inflammability of every thing able to be burned: now the government of these fires is thus:

9. The Medicine of the White ought to be put into the moist fire, until the completement of the whiteness shall appear in the vessel. For a gentle fire is the conservation of the humidity.

12. Therefore saith *Rhasis*, *Be very diligent and careful in the sublimation and liquefaction of the matter, that you increase not your fire too much, whereby the water may ascend to the highest part of the Vessel*; for then wanting a place of refrigeration, it will stick fast there, whereby the sulphur of the elements will not be perfected.

14. And the gentle or temperate fire is that only which compleats the mixture, makes thick, and perfects the work.

18. The happy prosecution of the whole work consists in the exact temperament of the fire: therefore beware of too much heat, lest you come to *Solution* before the time, [viz. before the matter is ripe:] For that will bring you to despair of attaining the end of your hopes.

19. Wherefore saith he [i.e., *Rhasis*], *Beware of too much fire, for if it be kindled before the time, the matter will be Red before it comes to ripeness and perfection*, whereby it becomes like an Abort, or the unripe fruit of the womb; whereas it ought to be first white, then red, like as the fruits of a tree: a cherry is

first white, then red, when it comes to its perfection.

Chap. 43: Of the Aenigmas of Philosophers, their Deceptions, and Precautions concerning the same.

1. You ought to put on courage, resolution and constancy, in attempting this great work, lest you err, and be deceived, sometimes following or doing one thing, and then another.
2. For the knowledge of this art consisteth not in the multiplicity, or great number of things, but in unity; our Stone is but One, the matter is One, and the vessel is One: the government is One. The whole Art and Work thereof is One, and begins in One manner, and in One manner is finished.
3. Notwithstanding the Philosophers have subtilly delivered themselves, and clouded their instructions with aenigmatical and typical phrases and words, to the end that their art might not only be hidden and so continued, but also be had in the greater veneration.
4. Thus they advise to decoct, to commix, and to conjoyn; to sublime, to bake, to grind, and to congeal; to make equal, to putrefie, to make white, and to make red; of all which things, the order, management and way of working is all one, which is only to; *Decoct*.

Chap. 44: Of the Various Signs Appearing in every Operation.

1. This then is the thing that the vessel with the Medicine be put into a moist fire; to wit, that the middle or one half of the vessel be in a moist fire (or *Balneo*, of equal heat with horse-dung) and the other half out of the fire, that you may daily look into it.
2. And in about the space of forty days, the superficies or upper part of the Medicine will appear black as melted pitch: and this is the sign that the citrine body is truly converted into mercury.
6. This blackness the Philosophers called the first *Conjunction*; for then the male and female are joyned together, and it is the sign of perfect mixtion.
10. This blackness is called among the Philosophers by many names, to wit, *the Fires, the Soul, a Cloud, the Ravens-Head, a Coal, Our Oyl, Aqua vitæ, the Tincture of Redness, the shadow of the Sun, Black Brass, Water of Sulphur*, and by many other names.
11. And this blackness is that which conjoyneth the body with the spirit.

16. In the first *Decoction* (which is called *Putrefaction*) our Stone is made all black, to wit, a black earth, by the drawing out of its humidity; and in that blackness, the whiteness is hidden.

17. And when the humidity is reverted upon the blackness again, and by a continued soft and gentle digestion is made fixed with its earth, then it becomes white.

18. In this whiteness, the redness is hidden; and when it is decocted and digested by augmentation (and continuance) of the fire, that earth is changed into redness, as we shall hereafter teach.

Chap. 45: Of the Eduction of the Whiteness out of the Blackness or Black Matter.

1. Now let us revolve to the black matter in its vessel, [not so much as once opened, but] continually closed: Let this vessel I say, stand continually in the moist fire, till such time as the white colour appears, like to a white moist salt.

2. The colour is called by the Philosophers *Arsenick* and *Sal Armoniack*; and some others call it, *The thing without which no profit is to be had in the work*.

3. But inward whiteness appearing in the work, then is there a perfect conjunction and copulation, of the bodies in this Stone, which is indissoluble; and then is fulfilled that saying of *Hermes*, *The thing which is above, is as that which is beneath; and that which is beneath, is as that which is above*, to perform the mystery of this matter.

7. And many times it shall be changed from colour to colour, till such time as it comes to the fixed whiteness.

9. But value none of these colours, for they be not the true tincture; yea many times it becomes citrine and redish, and many times it is dried, and becomes liquid again, before the whiteness will appear.

12. The cause of the appearance of such variety of colours in the operation of your Medicine is from the extention of the blackness; for as much as blackness and whiteness be the extreame colours, all the other colours are but means between them.

13. Therefore as often as any degree or portion of blackness descends, so often another and another colour appears, until it comes to whiteness.

14. Now concerning the ascending and descending of the Medicine, *Hermes* saith, *It ascends from the Earth into Heaven, and again descends from Heaven to the Earth, whereby it may receive both the superiour strength, and the*

inferiour.

15. Moreover this you are to observe, that if between the blackness and the whiteness, there should appear the red or citrine colour, you are not to look upon it or esteem it, for it is not fixt but will vanish away.

16. There cannot indeed be any perfect and fixt redness, without it be first white; wherefore saith *Rhasis*, *no Man can come from the first to the third, but by the second.*

17. From whence it is evident, that whiteness must always be first lookt for, [after the blackness, and before the redness] for as much as it is the complement of the whole work.

18. Then after this whiteness appears, it shall not be changed into any true or stable colour, but into the red: thus have we taught you to make the white; it remains now that we elucidate the red.

Chap. 46: Of the Way and Manner how to educe the Red Tincture out of the White.

1. The matters then of the white and red among themselves, differ not in respect to their essence; but the red Elixir needs more subtilization and longer digestion, and a hotter fire in the course of the operation, than the white, because the end of the white work is the beginning of the red work and that which is compleat in the one, is to be begun in the other.

2. Therefore without you make the white Elixir first, [*viz.*] make the matter become first white, you can never come to the red Elixir, that which is indeed the true red: which how it is to be performed we shall briefly shew.

3. The Medicine for the red ought to be put into our moist fire, until the white colour aforesaid appear, afterwards take out the vessel from the fire, and put it into another pot with sifted ashes made moist with water, to about half full, in which let it stand up to the middle thereof, making under the earthen pot a temperate dry fire, and that continually.

4. But the heat of this dry fire ought to be double at the least, to what it was before, or than the heat of the moist fire; by the help of this heat, the white Medicine receiveth the admirable tincture of the redness.

7. Decoct the red matter or Medicine; the more red it is, the more worth it is; and the more decocted it is, the more red it is. Therefore that which is more decocted is the more pretious and valuable.

8. Therefore you must burn it without fear in a dry fire, until such time as it is clothed with a most glorious red, or a pure vermillion colour.

12. As *Hermes* saith in *Turba*, *Between the Whiteness and the Redness, one Colour only appears, to wit, Citrine, but it changes from the less to the more.*

13. *Maria* also saith, *When you have the true White, then follows the false and Citrine Colour; and at last the Perfect Redness itself.* This is the glory and the beauty of the whole world.

Chap. 48: Of the Augmentation or Multiplication of our Medicine by Fermentation.

1. Our Medicine is multiplied by Fermentation; and the ferment for the white is pure *Luna*; the Ferment for the Red, is pure fine *Sol*.

2. Now cast one part of the Medicine upon twenty parts of the ferment and all shall become Medicine, Elixir, or Tincture; put it on the fire in a glass vessel, and seal it so that no air go in or out; dissolve and subtilize it, as oft as you please, even as you did for making of the first Medicine.

3. And one part of this second Medicine shall have as much virtue and power, as ten parts of the former.

5. You must then conjoyn it, that it may generate its like; yet you must not joyn it with any other that it might convert it to the same, but only with that very same kind, of whose substance it was in the beginning.

12. Wherefore we command argent vive to be mixed with argent vive, until one clear water be made of two argent vives compounded together.

13. But you must not make the mixture of them, till each of them apart or separately be dissolved into water: and in the conjunction of them, put a little of the matter upon much of the body, *viz.* First upon four; and it shall become in a short time a fine powder, whose tincture shall be white or red.

14. This powder is the true and perfect Elixir or Tincture, and the Elixir or Tincture, is truly a simple powder.

16. Keep entire the fume or vapour, and take heed that nothing thereof flie out from it; tarry by the vessel and behold the wonders, how it changes from colour to colour, in less space than an hours time, till such time as it comes to the signs of whiteness or redness.

18. This powder is the compleat and perfect Elixir or Tincture; now you may separate or take it from the fire and let it cool.

19. And first, part of it projected upon 1000 parts of any metalline body transmutes it into fine gold or silver, according as your Elixir or Tincture is for the red or the white.

20. From what has been said, it is manifest and evident that if you do not congeal argent vive, making it to bear or endure the fire, and then conjoining it with pure silver, you shall never attain to the whiteness.

21. And if you make not argent vive red, and so as it may endure the greatest fire, and then conjoyn it with pure fine gold, you shall never attain to the redness.

22. And by dissolution, viz. by fermentation, your Medicine, Elixir, or Tincture, may be multiplied infinitely.

Chap. 49: Of the Differences of the Medicine and Proportions used in Projection.

3. The third order is of such Medicines, which being cast upon imperfect bodies, not only perfectly tinge them, but also take away all their corruption and impurities, making them incorrupt and perfect . . .

4. Let therefore this your perfect Medicine, or Elixir, be cast upon a thousand or more parts, according to the number of times it has been dissolved, sublimed, and made subtil. If you put on too little, you must mend it by adding more; otherwise the virtue thereof will accomplish a perfect transmutation.

5. The Philosophers therefore made three proportions, divers manner of ways, but the best proportion is this: let one part be cast upon an hundred parts of *Mercury*, cleansed from all its impurities; and it will all become Medicine, or Elixir; and this is the second Medicine, which projected upon a thousand parts, converts it all into good *Sol* or *Luna*.

6. Cast one part of this second Medicine upon an hundred of Mercury prepared, and it will all become Medicine, and this is the Third Medicine, or Elixir of the third degree, which will project upon ten thousand parts of another body and transmute it wholly into fine Sol or Luna.

7. Again, every part of this third Medicine being cast upon an hundred parts of prepared *Mercury*, it will all become Medicine of the fourth degree, and it will transmute ten hundred thousand times its own quantity of another metal into fine Sol and Luna, according as your fermentation was made.

8. Now these second, third, and fourth Medicines may be so often dissolved, sublimed, and subtilized, till they receive far greater virtues and powers, and may after the same manner be multiplyed infinitely.

9. According to *Rhasis*, the proportion is thus to be computed. First, multiply ten by ten, and its product is an hundred; again 100 by 10, and the product is 1000; and a 100[0] by 10, and the product will be 10000.

10. And this 10000 being multiplied by 10, produces an 100000; and thus by consequence you may augment it, till it comes to a number almost infinite.

Chap. 50: Of Projection, and how it is to bee performed upon the Metals.

1. Now the projection is after this manner to be done: put the body or metal upon the fire in a crucible, and cast thereon the Elixir as aforesaid, moving, or stirring it well; and when it is melted, become liquid, and mixed with the body, or with the spirit, remove it from the fire, and you shall have fine gold or silver, according to what your Elixir was prepared from.

2. But here is to be noted, that by how much the more the metaline body is the easier to be melted, by so much the more shall the Medicine have power to enter into, and transmute it.

3. Therefore by so much as Mercury is more liquid than any other body, by so much the more, the Medicine has power in being cast upon it, to wit, Mercury, to transmute it into fine Sol or Luna.

4. And a greater quantity of it shall your Medicine transmute, give tincture to, and make perfect, than of any other mineral body.

5. The like is to be understood to be performed in the same manner upon other mineral bodies, according as they are easie or hard to be fused or melted.

Chap. 51: Of the Compleatment, or Perfection of the whole Work.

1. And because prolixity is not pleasant, but induceth error and clouds the understanding, we shall now use much brevity and shew the completement of the whole work, the premises being well conceived.

2. It appears that our work is hidden in the body of the Magnesias, that is, in the body of sulphur, which is Sulphur of Sulphur; and in the body of mercury, which is Mercury of Mercury.

3. Therefore our Stone is from one thing only, as is aforesaid, and it is performed by one act or work, with decoction: and by one disposition, or operation, which is the changing of it first to black, then to white, thirdly, to red: and by one projection, by which the whole act and work is finished.

4. From henceforth, let all pseudo-chymists, and their followers, cease from their vain distillations, sublimations, conjunctions, calcinations, dissolutions, contritions, and such other like vanities.

5. Let them cease from their deceiving, prating, and pretending to any other gold, than our gold; or any other sulphur than our sulphur, or any other argent vive than ours; or any other Ablution or washing than what we have taught.

6. Which washing is made by means of the black colour, and is the cause of the white, and not a washing made with hands.

7. Let them not say, that there is any other Dissolution than ours, or other Congelation than that which is performed with an easie fire: or any other Egg than that which we have spoken of by similitude, and so called an Egg.

9. But hear now what *Rhasis* saith, *Look not upon the multitude, or diversity of Names, which are dark and obscure, they are chiefly given to the diversity of Colours appearing in the Work.*

10. Therefore whatever the names be, and how many soever, yet conceive the matter or thing to be but one, and the work to be but one only.

12. And with this it is that we tinge and colour every body, bringing them from their beginnings and smalness, to their compleat growth, and full perfection.

15. If you that are searchers into this science, understand these words and things which we have written, you are happy, yea, thrice happy; if you understood not what we have said, God himself has hidden the thing from you.

16. Therefore blame not the Philosophers but your selves; for if a just and faithful mind possessed your souls, God would doubtless reveal the verity to you.

17. And know, it is impossible for you to attain to this knowledge unless you become sanctified in mind, and purified in soul, so as to be united to God, and to become one Spirit with him.

18. When you shall appear thus before the Lord, he shall open to you the gates of his treasure, the like of which is not to be found in all the earth.

19. Behold, I shew unto you the fear of the Lord, and the love of him with unfeigned obedience: nothing shall be wanting to them that fear God, who are cloathed with the excellency of his holiness, to whom be renderd all praise, honor and glory to the Ages of Ages, *Amen*.

