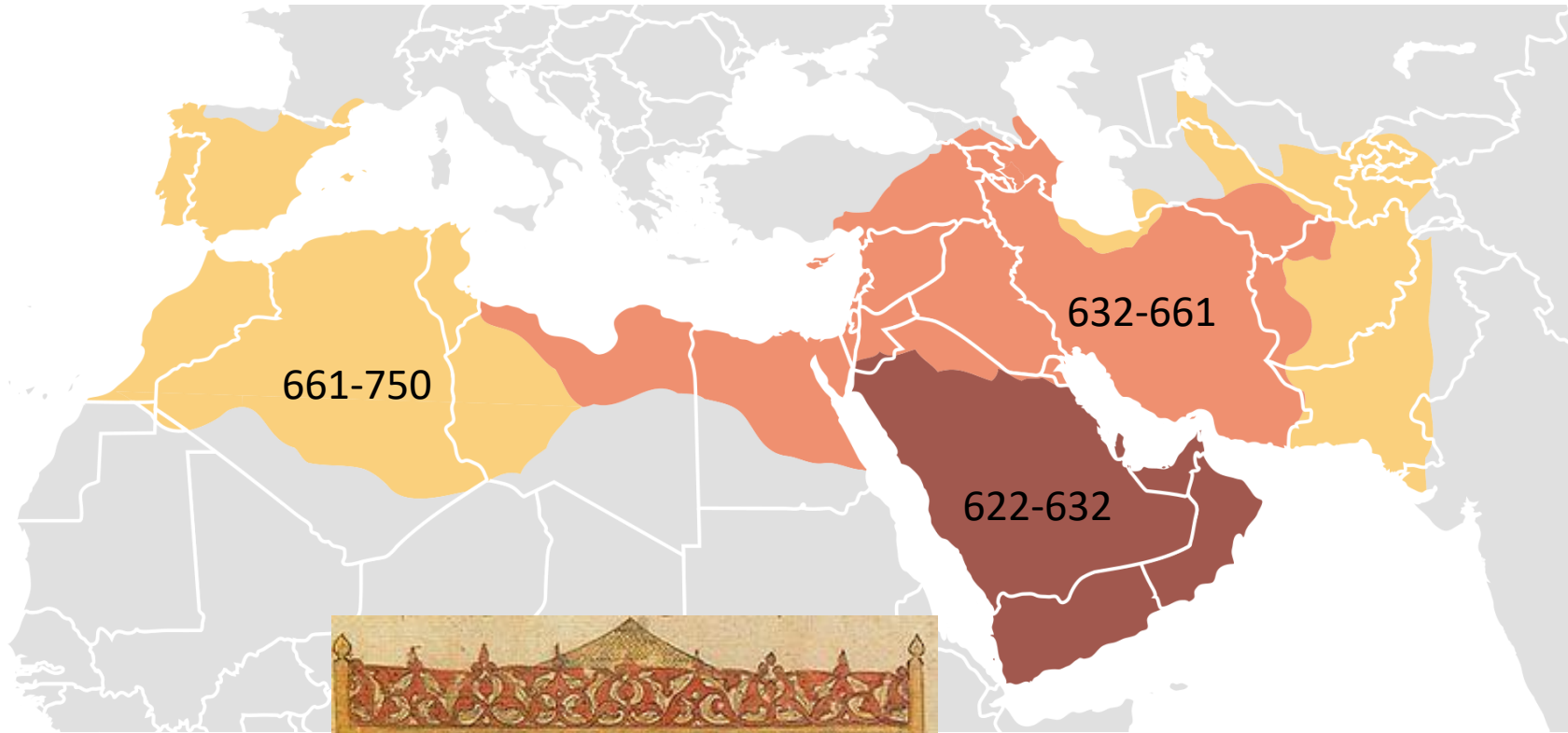


3.

alkemija i jatrokemija



*Bait al hikma* (ilustracija oko 1237.)



**Harun al-Rašid** (oko 763.–809.)



**Abu al-Abas Abdalah ibn Harun al-Rašid al-Mamun** (786.–833.)



( 22 )

**G E B E R,**  
*The Famous Arabian Prince  
 and Philosopher,*  
*Of the Sum of*  
**P E R F E C T I O N,**  
 OR, OF THE  
**P E R F E C T M A G I S T E R Y ;**  
 Two Books.

---

The First Book.

---

*The P R E F A C E, Touching the Way of  
 Describing this ART, and of those  
 that are fit D I S C I P L E S.*

**O**ur whole Science of Chymistry, which, with a divers Compilations, out of the Books of the Ancients, We have abbreviated in our Preface; We here reduce into one Sum. And what in other Books written by Us is diminished, that We have sufficiently

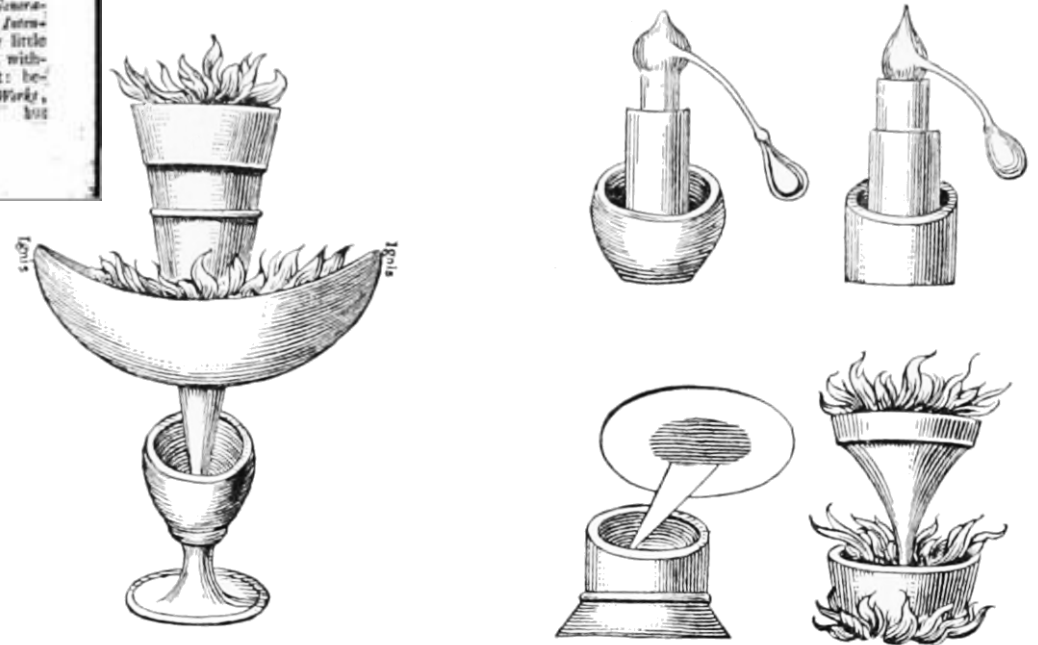
( 23 )

ciently made up in the *Wisdom* of this Our Book, and supplied the *Defect* of them very briefly. And what was abridged by Us in one Part, that We have made manifest in the same Part, in this Our *Preface*; that the *Compliments* of so Excellent and Noble a Part of *Philosophy*, may be apparent to the *Wise*.

Therefore, Most dear *Sen*, know, that in this *Work*, the whole *Operation* of Our *Art* is sufficiently contained in *General Heads*, with an *Universal Discourse*, without any Diminution. And he, who shall operate according to this *Book*, he shall (through *God*) with Joy find, that he is come to the true *end* of this *Art*. But you must also know, that he, who in himself knows not *Natural Principles*, is very remote from our *Art*; because he hath not a true *End*, whereon to found his intention. And he, who knows his *Natural Principles*, and all *Causes of Minerals*, yet hath not acquired the true *End* and *Proficiency* of this *Art*, hath a more easie Access to the *Principles* of this *Art*, than he who is ignorant in his *Invention* of the *Method* of his *Work*, and is but a little remote from the *Entrance* of *Art*. But he who knows the *Principles* of all Things, and the *Causes of Minerals*, and the *Way of Generation*, which consists, according to the *Intention* of *Nature*, is indeed but a very little short of the *Compliments* of the *Work*; without which our *Science* cannot be perfect; because *Art* cannot imitate *Nature* in all *Works*.

C 4

Abu Musa **Džabir** ibn Hajan al Asdi al Hufi al Sufi (721.–815.)



'Geberove' aparature (16. stoljeće)

# Continens Rasis.

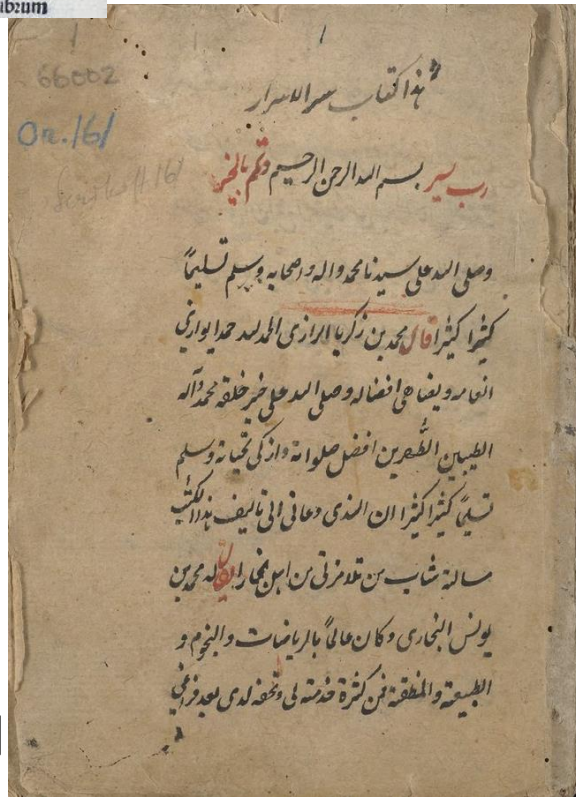


Quisquis es qui antiquiores illos 7 nuncq̄ satis laudatos auctores  
In medicinali disciplina sectari studeas. **En tibi Liber** quem in medicina edidit **Abucapre**  
**filius Zacharie Rasis**, vir qui nulli p̄fecto inter arabas auctores auctoritate doctrina indici-  
ciorum experientia fuit secundus. **Hunc Delchauy / hoc est Continetem** appellauit: quia  
omnem fere medicinalem artem contineret. In eo enī quęcūq; a p̄fictis illis tam grecis q̄  
arabibus auctoribus annotatu digna in medicina sunt sparsim cōscripta collecta cōgestaq; in  
vnum compertis: ita vt nequaquam possit cruditus medicus haberi qui hunc librum

Abu Bakr Muhamad ibn Zakarija  
al-Razi (Rhazes; 854.–925.)

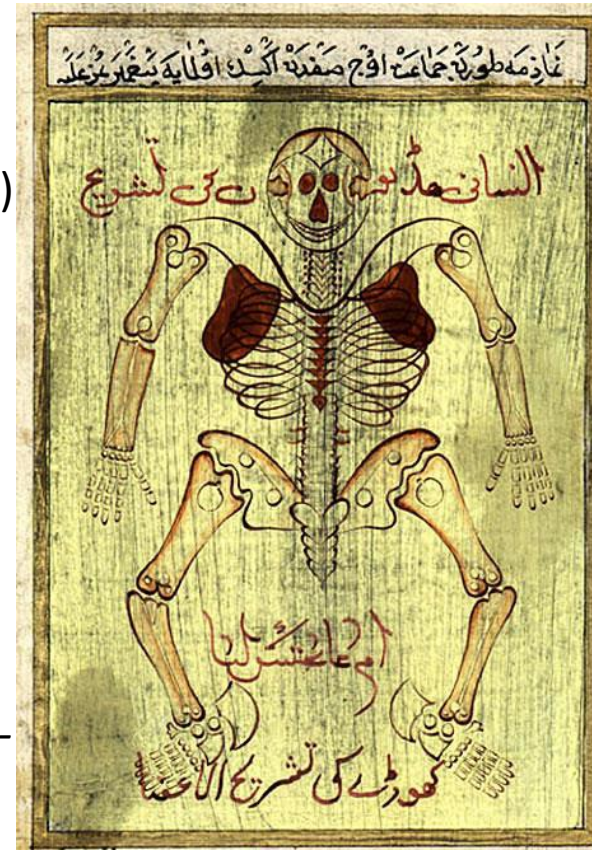
Knjiga o tajnama (Kitab al-  
Asrar; Liber Secretorum)

[Knjiga o stipsama i solima]



Abu Ali al Hasain ibn Abdalah  
ibn Sina (Avicenna; 980.–1037.)

Knjiga ozdravljenja (Kitab al-  
Šifa; Sufficientia)



**Robert iz Chestera (*Robertus Castrensis*, 12 st.)**

**Džabir ibn Hajan ('Morienuus princu Calidu'), *Liber de compositione alchimiae*, 1144.;**  
**al Horizmi *Liber algebrae et almucabola*, 1145.**

**Herman Dalmatin (Herman Koruški, *Hermannus Dalmata, Sclavus, Secundus*; oko 1100.–1160.),**

**Euklid *Elementa* [*Στοιχεῖα*], 1140.; Ptolomej, *Planisphaerium* 1143.**

**Adelard iz Batha (*Adelardus Bathensis*; oko 1080.–1152.)**

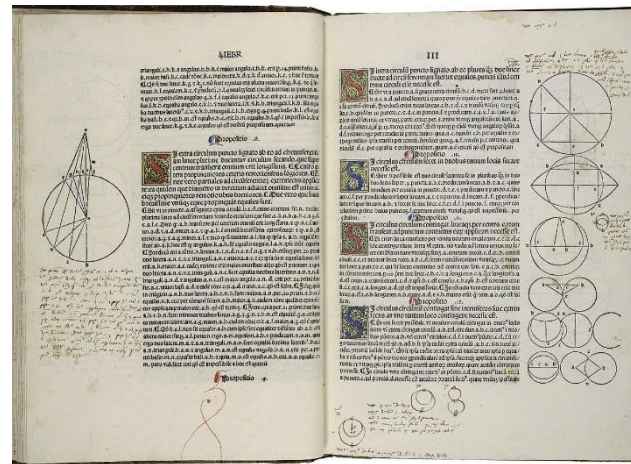
**Gerard iz Cremona (*Gerardus Cremonensis*; oko 1114.–1187.) Ptolomej, *Almagest* [*Μαθηματικὴ Σύνταξις*, *Ἡ Μεγάλη Σύνταξις*]**



Rhazes, *Recueil des traités de médecine*, 13. st. (Gerard iz Cremona)



*Almagest*, 1213.

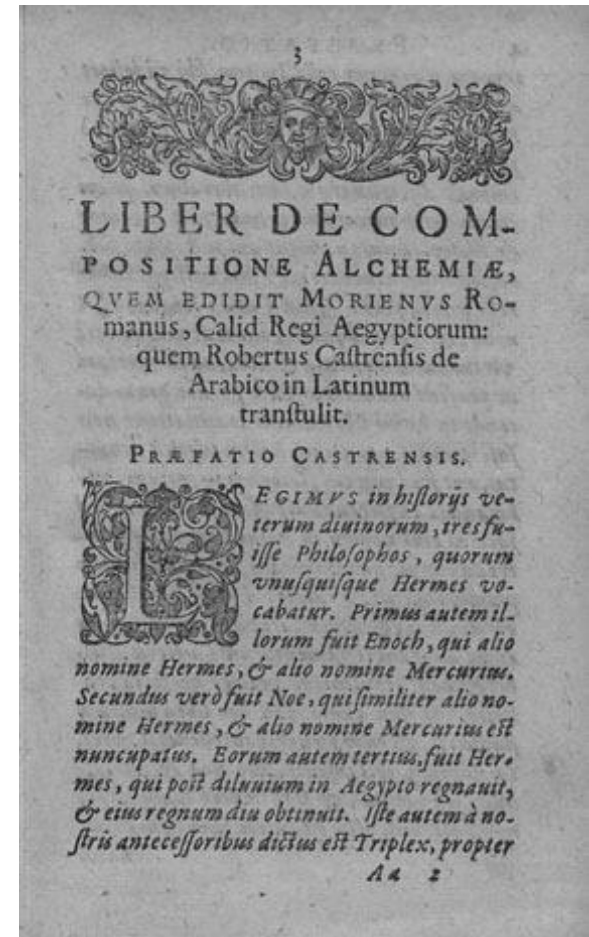


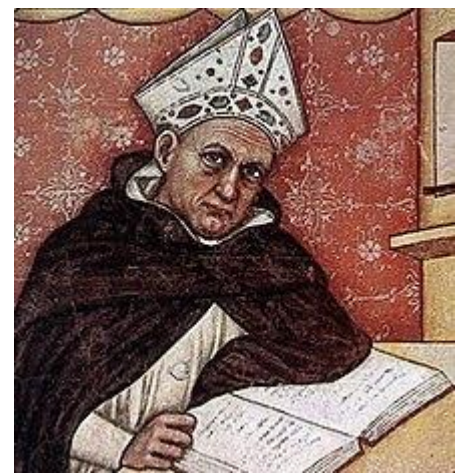
*Elementa*, 1482.

***Mappae clavicula* oko 600.**

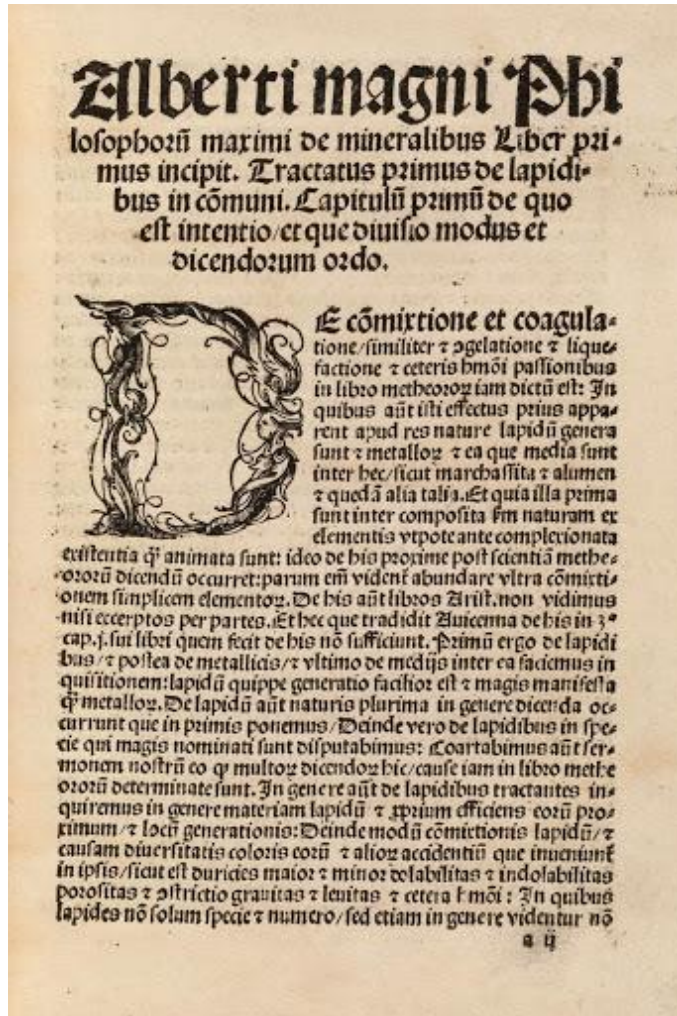
**„Theophilus Presbyter” (fl. 1070–1125) *Schedula diversarum artium* (ili *De diversis artibus*)**

**„Marcus Graecus” *Liber Ignium ad Comburendos Hostes*, 13. st.**





**Albertus Magnus**  
(*Doctor universalis,*  
*Doctor expertus*  
oko 1197.–1280.),



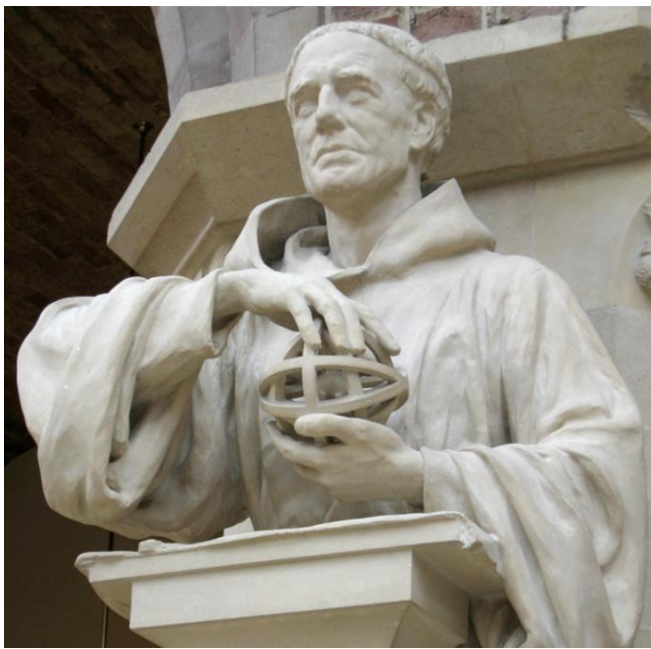
*De Mineralibus Libri Quinque.* (1519.)



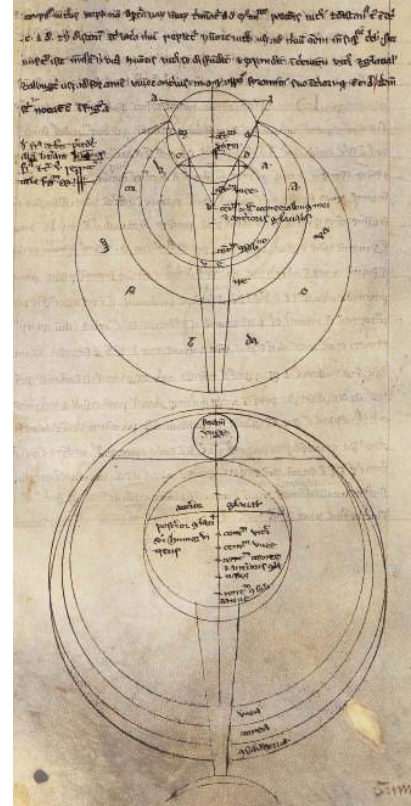
**Vincent iz Beauvaisa (*Vincentius Bellovacensis; Burgundus;*  
oko 1184./1194.–1264.)**



*Speculum naturale.* 1260-1270.



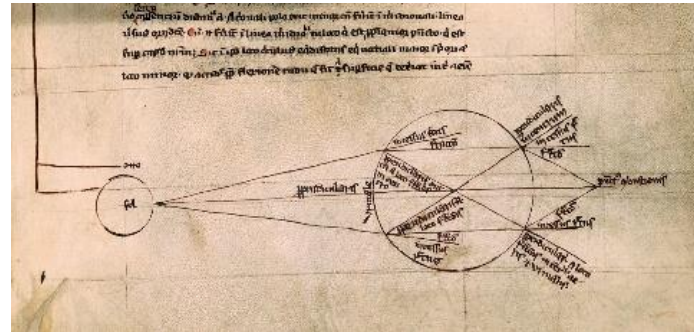
**Roger Bacon (c. 1219/20 – c. 1292),  
*Doctor Mirabilis***



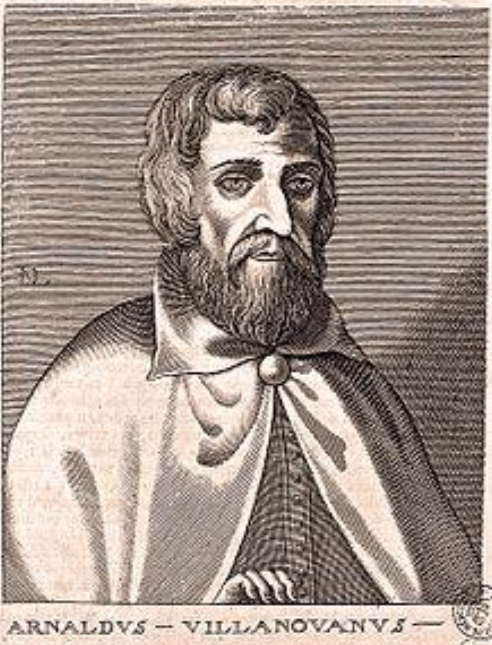
F. Opper, *Roger Bacon discovers gunpowder, whereby Guy Fawkes was made possible* iz Bill Nye, *Bill Nye's Comic History of England*, 1896.

**1267. *Opus Majus:***  
*Causae Erroris,*  
*Philosophiae cum Theologia Affinitas,*  
*De Utilitate Grammaticae,*  
***Mathematicae in Physicis Utilitas,***  
*De Scientia Perspectivae,*  
***De Scientia Experimentalis,***  
*Moralis Philosophia*

**1268. *Opus Tertium***



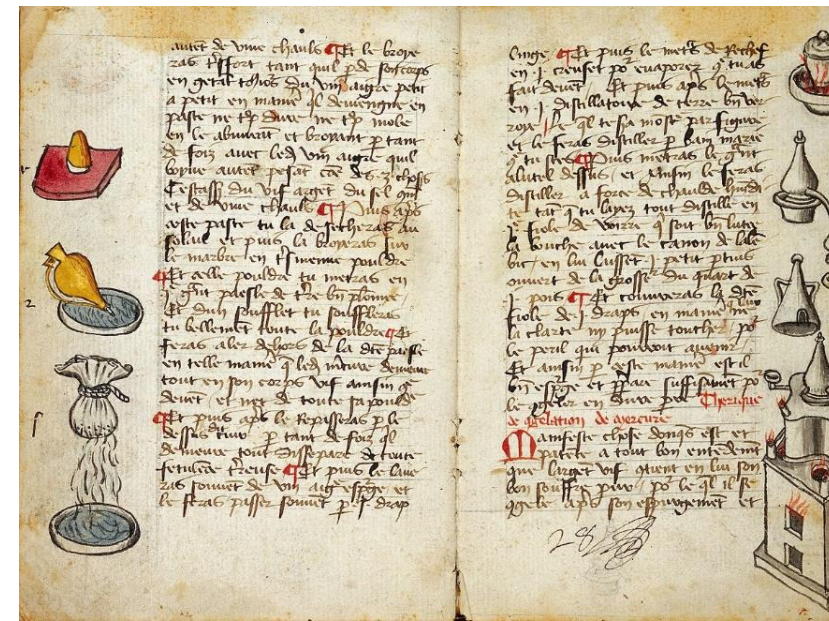
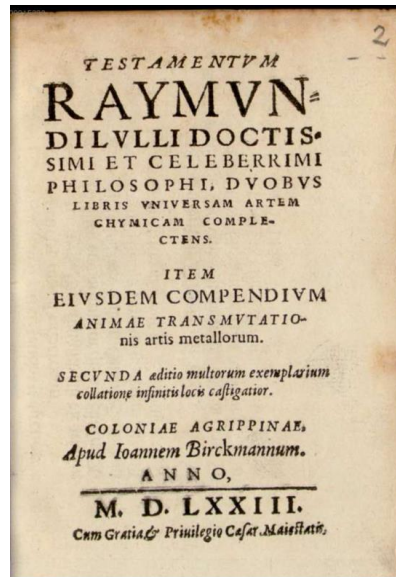
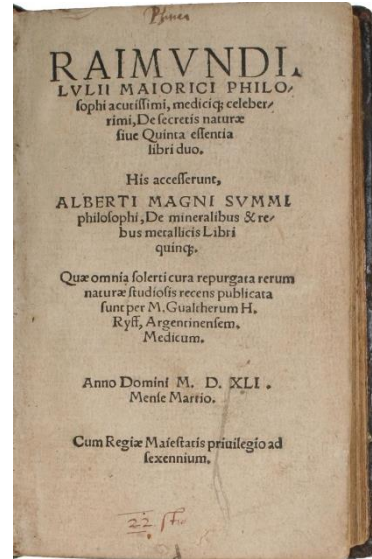
***Epistola de Secretis Operibus Artis et Naturae et de Nullitate Magiae***  
**ili *De Mirabili Potestate Artis et Naturae (?)***



**Arnaldus de Villa Nova**  
(1240.–1311.)



**Ramon Llull** (oko  
1232.–1315.)

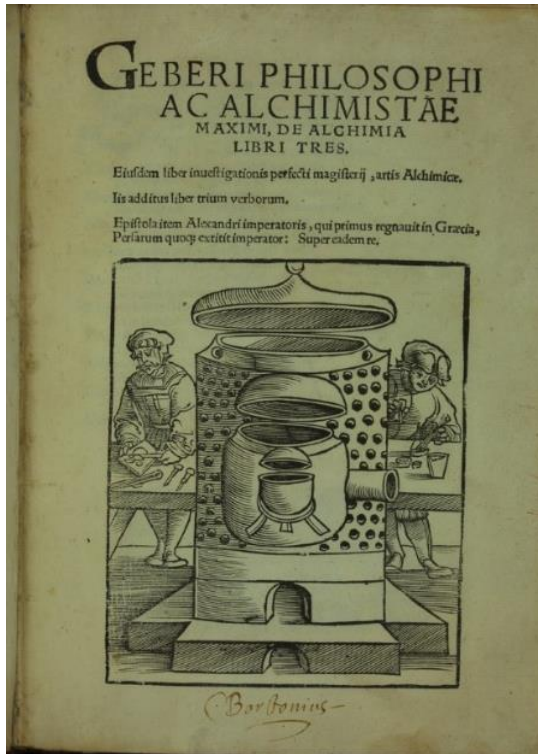


Rosarium Philosophorum,  
Novum Lumen, Flos  
Florum ?

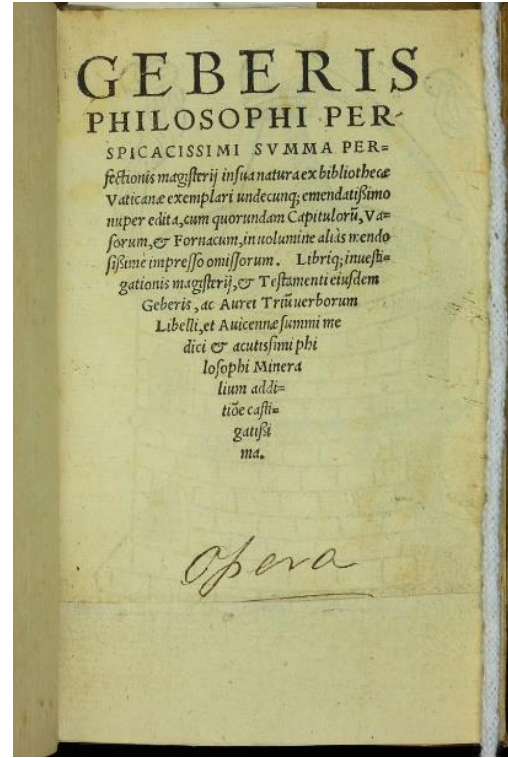
H. Brunshwig, *Liber de arte Distillandi de Compositis* 1512.



„Geber” (Pavao iz Taranta?), 13. st.



Geberi philosophi ac alchymistae maximi de alchimia libri tres, 1531,



Geberis philosophi perspicacissimi, Summa perfectionis magisterii, 1542

- Summa perfectionis magisterii
- Liber fornacum
- De investigatione perfectionis
- De inventione veritatis

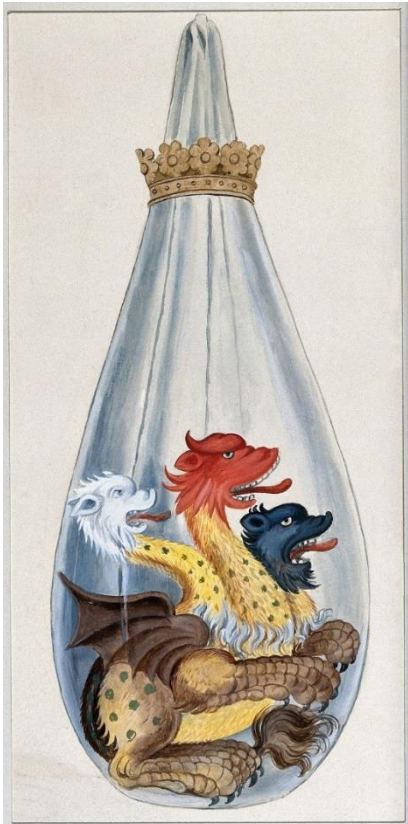


1682.



1542.

# Magnum opus



## Sir George Ripley (c. 1415.–1490.)

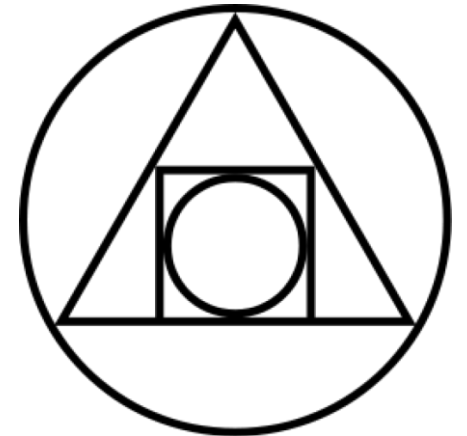
- |                |                   |
|----------------|-------------------|
| 1. Calcinatio  | 7. Cibation       |
| 2. Solutio     | 8. Sublimatio     |
| 3. Separatio   | 9. Fermentatio    |
| 4. Coniunctio  | 10. Exaltatio     |
| 5. Putrefactio | 11. Multiplicatio |
| 6. Congelatio  | 12. Projectio     |

## Samuel Norton (1548.–1621.)

- |               |                                    |
|---------------|------------------------------------|
| 1. Purgatio   | 8. Coniunctio                      |
| 2. Sublimatio | 9. Putrefactio in sulphuri         |
| 3. Calcinatio | 10. Solutio sulphuris corporalis   |
| 4. Exuberatio | 11. Solutio sulphuris luminis albi |
| 5. Fixatio    | 12. Fermentatio in elixiri         |
| 6. Solutio    | 13. Multiplicatio in virtute       |
| 7. Separatio  | 14. Multiplicatio in quantitate    |



Iz H. Nollius, *Theoria Philosophiae Hermeticae*, 1617.



Typicarum imaginum expositio.

**TRIA** in opere seruanda sunt, primo materia prepara, secundo opus continua, ne discontinuatione dissipetur, tertio sis patiens intima naturae passim uestigia seruans.

**PRAEPARA** primo aquam uitae summae purissimam, & eam serua. Non tamen credas, ut liquor iste, quae cuncta madent, sit Bacchi candens ac limpidus humor. Nante dum uarijs immensa per auita rebus, detines intentiones felices praeteris undas.

**PALATIVM** ingrediens in quo quindecim sunt mansiones ubi Rex diademate coronatus in excelsa sede sceptro totius orbis in manu tenens erit: coram cuius maiestate flexu cum quinque famulis uarijs indutis uestibus, flexis genibus regem deprecantur ut tam filio quam seruis regnum impertiri dignarentur, quorum precibus nil Rex ipse respondit.



At filius

**AT** filius indignatus seruorum suasionem, patrem in sua sede intermit. Fiat igitur amalgama cum aqua bene purgata &c.



**COLLIGIT** in tertio loco filius sua ueste patris sanguinem, quod est secundum opus & in Methodo iam declaratum.



\*\*\*

**EFFICITVR** fouea in quarta mansione, quae maxima est: cuius altitudo sit duorum palmorum, latitudo sit digitorum quatuor.



**IN** mansione quinta filius male cogitans credit perire in foueam deiectum relinquere, sed ambo in foueam arte per artem.



**SEXTA** uero mansio, est in qua curat adhuc filius exire: sed unus uenit, qui ab illis ortus est in operatione secunda, & filium non exire permittit.



**CVM** autem pater & filius sunt in fouea, quae septima dicitur mansio, illis sequitur putrefactio in cineribus seu balneo perquam calido.



\*\*\* ij

OCTAVO enim loco inspicitur id, quod in purificatione euenit in frigidato uase &c.



SEQUITUR nona mansio in qua ossa è mortuo emittuntur. quo fit, cum totum corpus fuerit solutum: quod uero non fuerit solutum iterato opere soluitur ut prius dicitur: totum soluitur, solutumq; caute reserua



IN mansione decima ossa diuiduntur in nouem partes, quo fit cum materia soluta per nouem dies super lentum ignem coquitur quousque nigredo superueniat, qua remota in alio uasculo in loco calido serua & iterum per nouem dies aquam excoquito, & corruptum nigrum collige cum alijs; reponet, & sic prosequi necesse est quousque aqua sit clara atque munda: corruptio autem siue nigredo ponatur in uasculo uitreo & superponatur de aqua uitæ sua, ut supernatet per medium digitum & leui igne coquatur ad nouem dies singulo quoque die aquam innouando si opus fuerit & sic erit terra munda ac dealbata iuxta philosophorum dicta, scilicet hæc terra cum aqua sua putrescit & mundificatur.

MITTITUR Angelus proiciens ossa super terram mundificatam & dealbatam, qua nunc miscetur cum spermate suo, & totum ponitur in uase clauso cum alio bico materia aliquantulum inspissata adhuc fortiori igne diuidatur ab aqua, & sit in fundo dura.

VNDECIMO loco famuli Deum precantur, ut Reseruetur, in cuius reseruatione totum opus dirigitur.



MITTITUR alter propterea Angelus in mansione duodecima, qui alteram illorum ossium partem super terram ponit, donec simul inspissentur tunc mira in opere apparent.



T V  
Plus est  
potens f

ET sic alternatim mittuntur Angeli, qui primam, secundam, tertiam & quartam partem ossium proiciunt, ut scilicet albescat, sit lucida atque firmetur. Quinto & sexto firmata mutetur in citrinum. Et sic cum septima, octava & nona parte: ossium terra efficitur uti sanguis atque rubinus.

13



TVNC Rex surgens, de sepulcro Dei gratia plenus, factus est totus spiritus totusq; coelicus cum potestate magna, potens facere Reges omnes suos famulos.

POSTREMO potentiam suam super filium & se demonstrat, eis coronas aureas singulas singulis imponere ut sint & ipsi Reges gratia sui, cui dominus dedit potentiam magnam atque maiestatem.



Impuris nemo manibus fraudator, audax, sacrilegus, ne aliquis pergrave tangat opus. Huc probus, huc sapiens animo se conferat, & qui cum rerum causis dogmata nosse queat.

PRIMA CLAVIS.



II. CLAVIS.



III. CLAVIS.



IV. CLAVIS.



V. CLAVIS.



VI. CLAVIS.



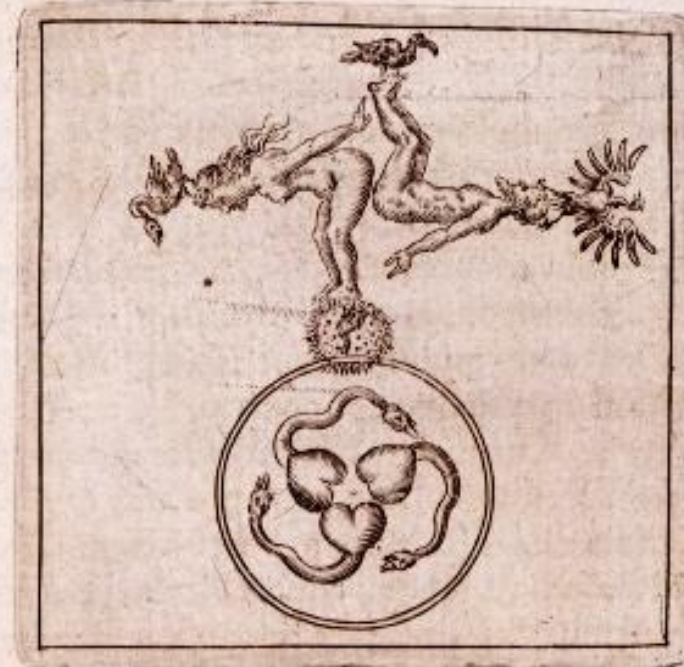
VII. CLAVIS.



VIII. CLAVIS.



IX. CLAVIS.



X. CLAVIS.



XI. CLAVIS.



XII. CLAVIS.



Chemical Signs explained.

Acids.

- 1. + ⊕ vitriolic
- 2. + ⊕ ⚡ phlogisticated
- 3. + ⊕ nitrous
- 4. + ⊕ ⚡ phlogisticated
- 5. + ⊕ marine
- 6. + ⊕ ⚡ dephlogisticated
- 7. ♃ Aqua regia
- 8. + ♁ of fluor
- 9. ∞ arsenic
- 10. + ⊕ borac
- 11. + ⊕ sugar
- 12. + ♁ tartar
- 13. + ⊕ sorrel
- 14. + ⊕ lemon
- 15. + ∞ benzoin
- 16. + ⊕ amber
- 17. + ⊕ sugar of milk
- 18. # aceros distilled
- 19. + ⊕ milke
- 20. + ♁ ants
- 21. + ⊕ fat
- 22. + ⊕ of phosphorus
- 23. + ⊕ perlatum
- 24. + ⊕ of prussian blue
- 25. ⊕ aerial

Alkalis.

- 26. ⊕ ♁ pure fixed vegetable
- 27. ⊕ ♁ pure fixed mineral
- 28. ⊕ ♁ pure volatile

Earths.

- 29. ♁ pure ponderous
- 30. ♁ pure calcareous Lime
- 31. ♁ pure magnesia
- 32. ♁ pure argillaceous
- 33. ♁ pure siliceous
- 34. ∇ water
- 35. ∆ vital air
- 36. ⚡ phlogiston
- 37. ∆ matter of heat
- 38. ♁ sulphur
- 39. ⊕ ♁ saline hepar
- 40. ∇ spirit of wine
- 41. ∞ ether
- 42. ∞ essential oil
- 43. ⊕ unctuous oil

Metallic Culces.

- 44. ♁ gold
- 45. ♁ platinum
- 46. ♁ silver
- 47. ♁ mercury
- 48. ♁ lead
- 49. ♁ copper
- 50. ♁ iron
- 51. ♁ tin
- 52. ♁ bismuth
- 53. ♁ nichle
- 54. ♁ arsenic
- 55. ♁ cobalt
- 56. ♁ zinc
- 57. ♁ antimony
- 58. ♁ manganese
- 59. ♁ siderite

A Table of Chemical & Philosophical Characters of their signification as they are usually found in Chemical Characters, printed by the author.

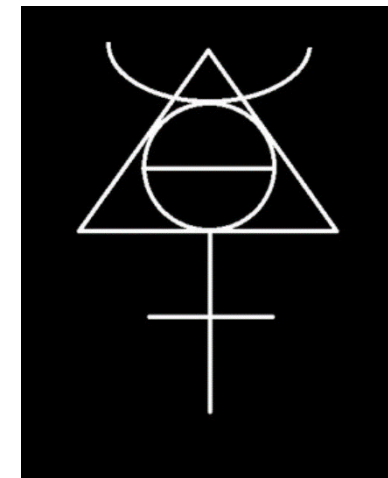
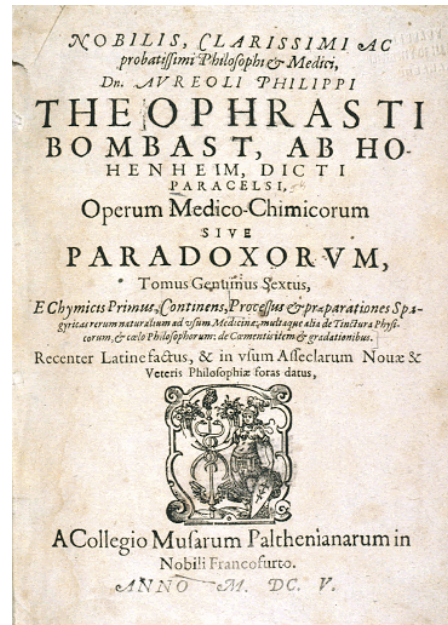
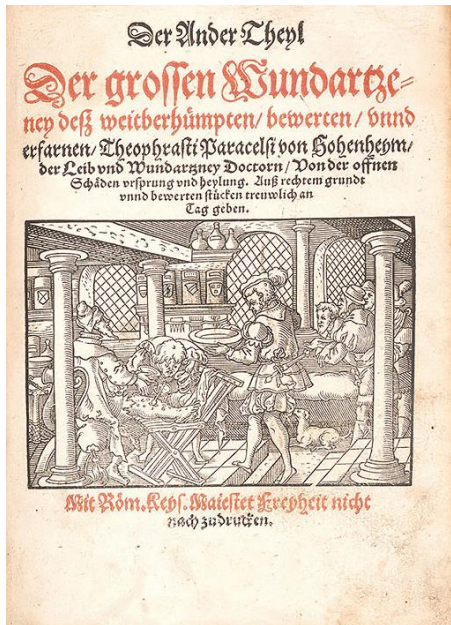
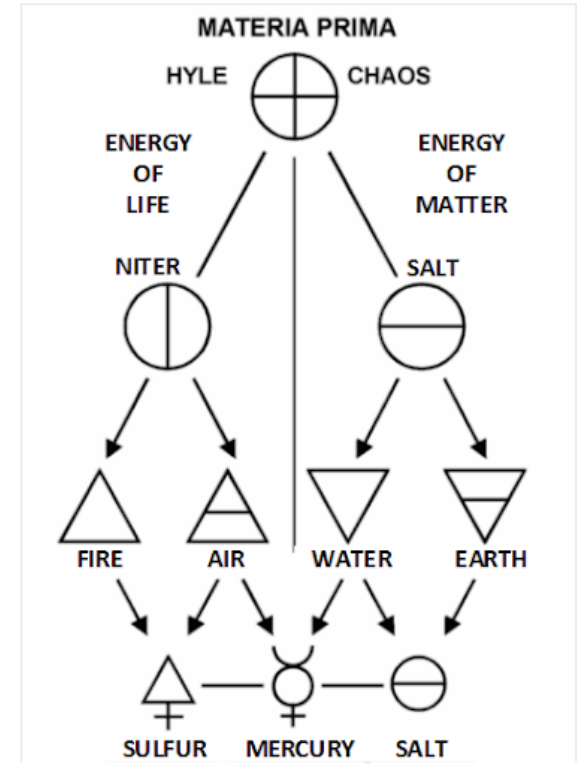
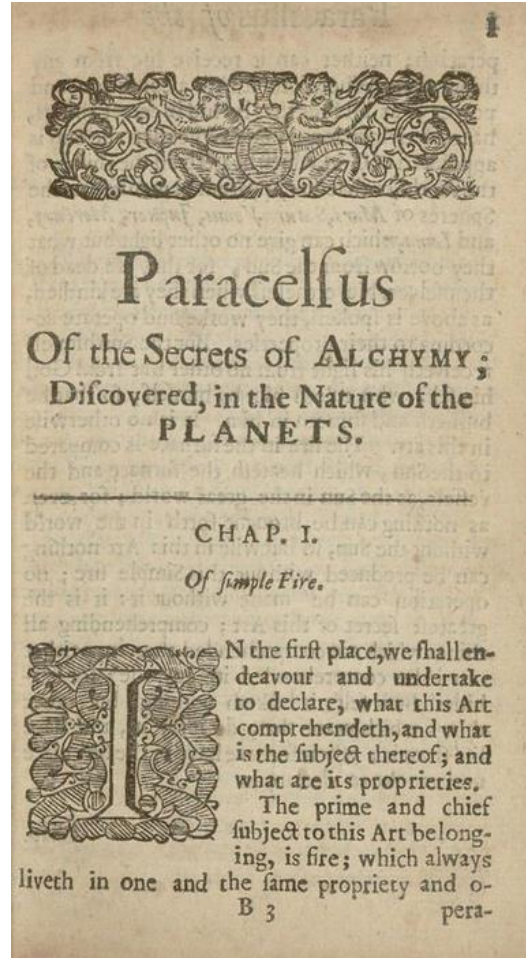
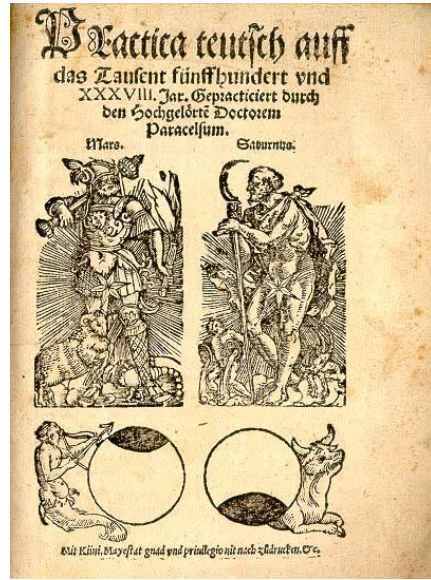
☉ Saturne	♃ Mars	♁ Mercury	♁ Mercury	♁ Mercury
♁ Lead	♁ Iron	♁ Copper	♁ Tin	♁ Zinc
♁ Tin	♁ Zinc	♁ Nickel	♁ Arsenic	♁ Cobalt
♁ Iron	♁ Silver	♁ Gold	♁ Platinum	♁ Bismuth
♁ Copper	♁ Lead	♁ Mercury	♁ Antimony	♁ Manganese
♁ Nickel	♁ Siderite	♁ Sulfur	♁ Phlogiston	♁ Matter of Heat
♁ Arsenic	♁ Vital Air	♁ Water	♁ Siliceous	♁ Argillaceous
♁ Magnesia	♁ Calcareous	♁ Lime	♁ Fixed Vegetable	♁ Fixed Mineral
♁ Volatile	♁ Ponderous	♁ Aerial	♁ Phlogisticated	♁ Dephlogisticated
♁ Nitrous	♁ Phlogisticated	♁ Marine	♁ Vitriolic	♁ Phlogisticated
♁ Aqua Regia	♁ Fluor	♁ Borac	♁ Sugar	♁ Tartar
♁ Sorrel	♁ Lemon	♁ Benzoin	♁ Amber	♁ Sugar of Milk
♁ Aceros Distilled	♁ Milke	♁ Ants	♁ Fat	♁ Phosphorus
♁ Perlatum	♁ Prussian Blue	♁ Aerial		

„B. Valentine“, The Last Will and Testament, 1670.





**Paracelsus (Philippus Aureolus Theophrastus Bombastus von Hohenheim; 1493./1494.–1541.).**

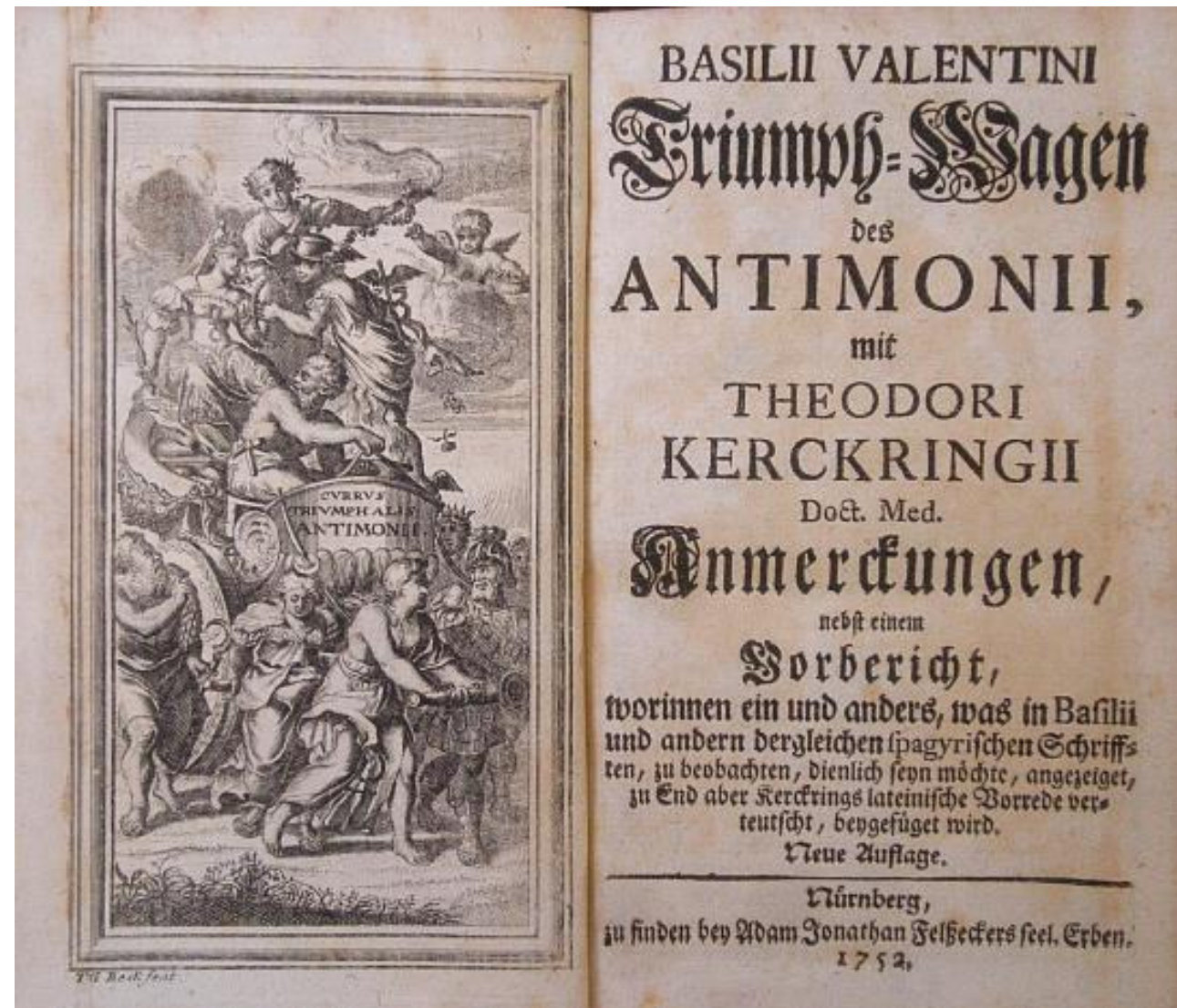




„Basilus Valentinus“,  
„15. stoljeće“ (Johann  
Thölde, oko 1565.–  
1624. i drugi)



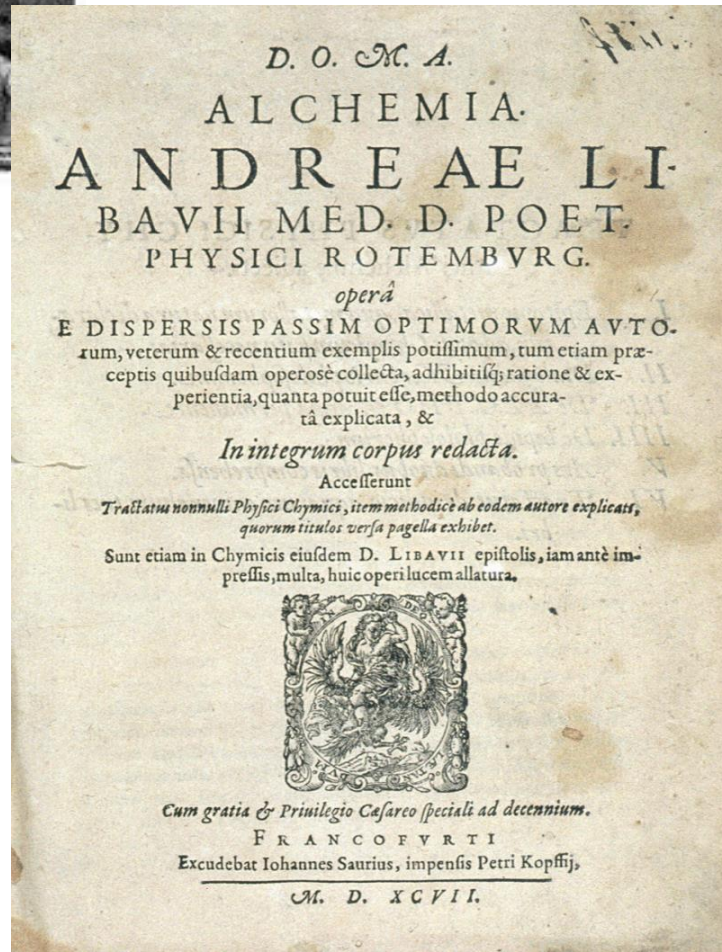
Azoth (1613)



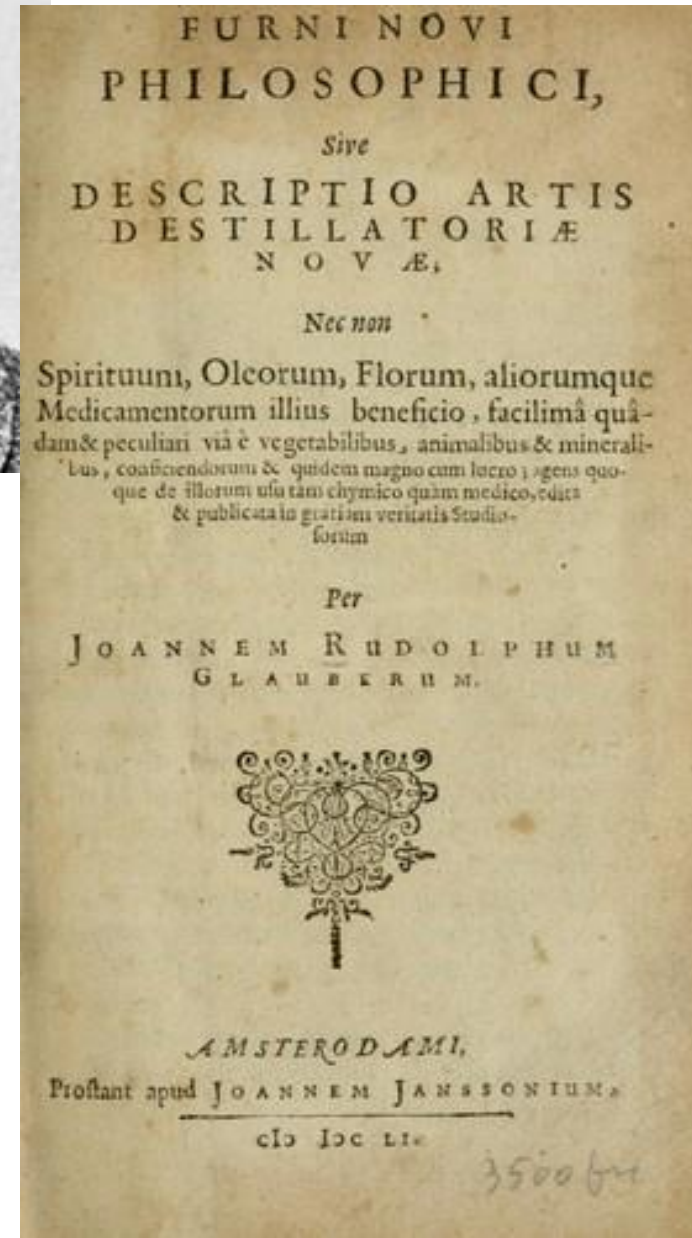
Triumph-Wagen des Antimonii, 1604.

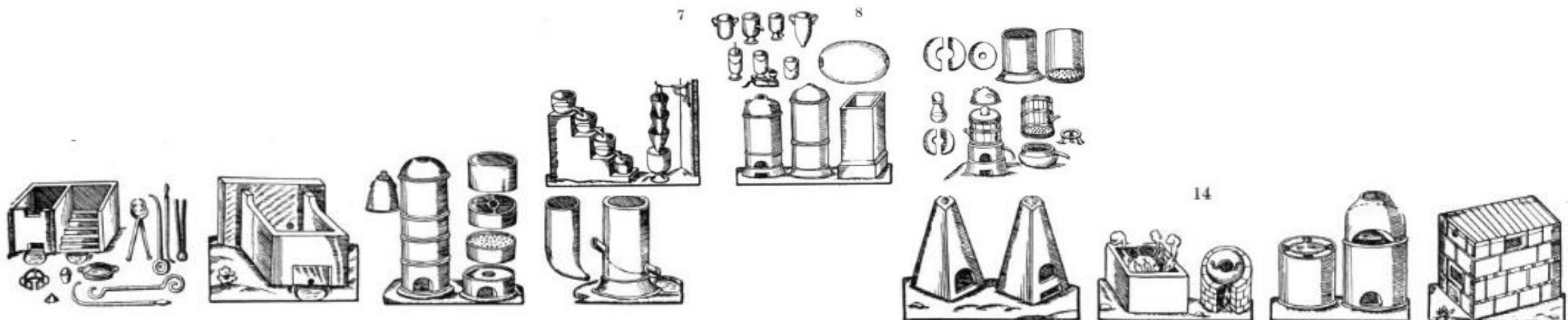
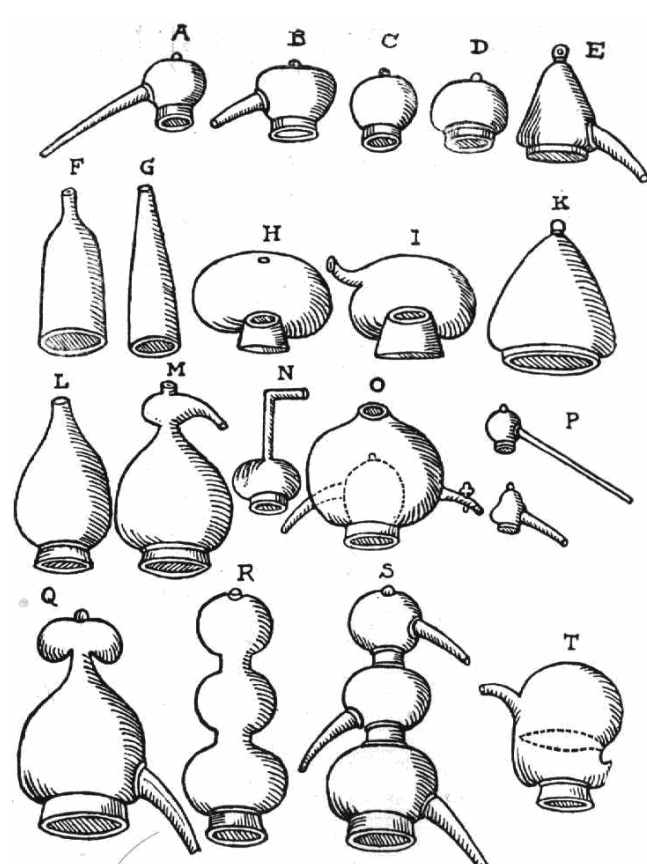
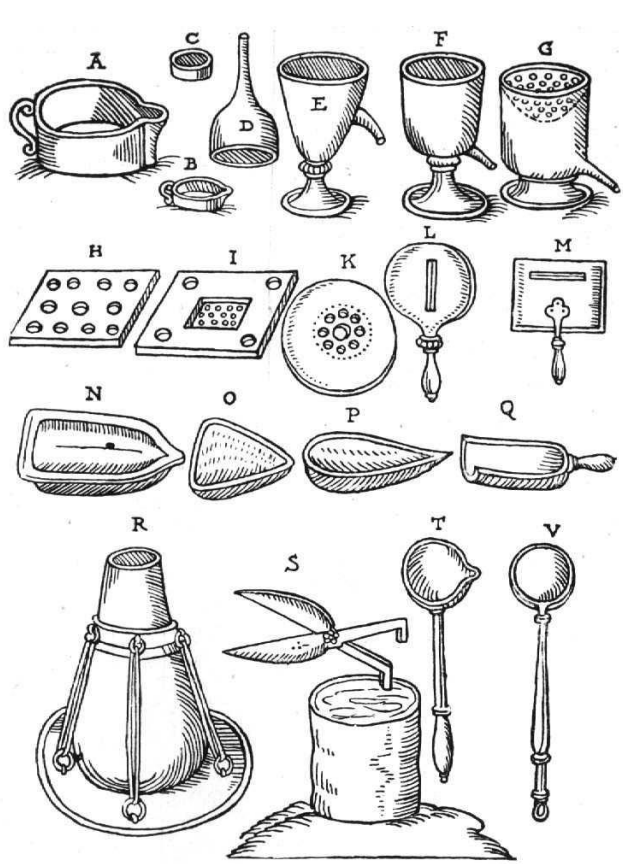
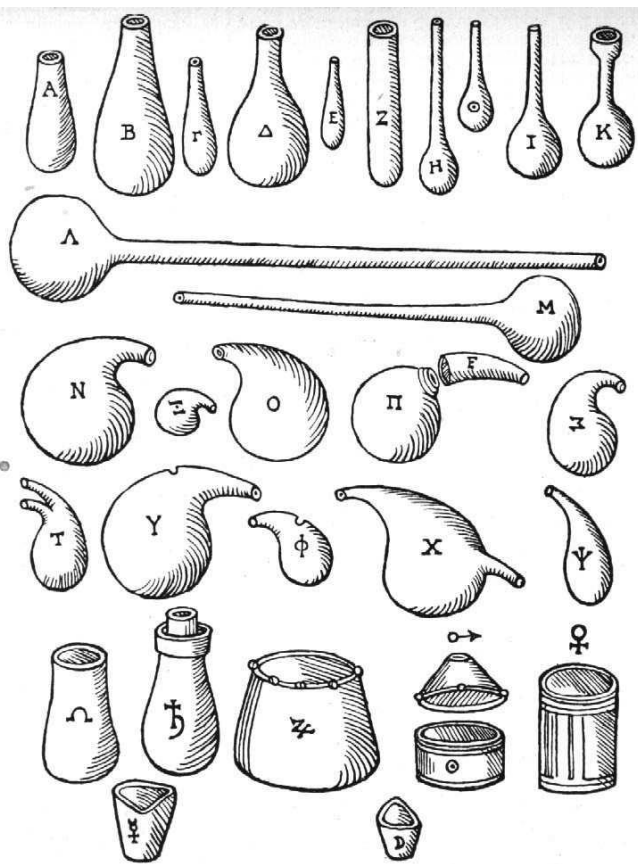


Andreas Libavius (A. Libau; 1550. –1616.)



Johann Rudolf Glauber (1604.–1670.)

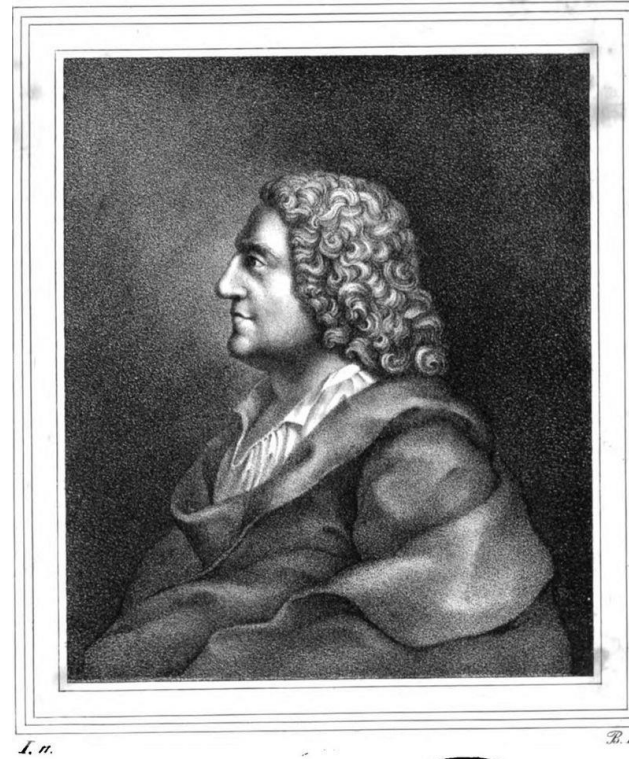




A. Libavius, *Alchemia*, 1597.



**Franciscus Sylvius**  
(Franz de le Boë;  
1614.–1672.)



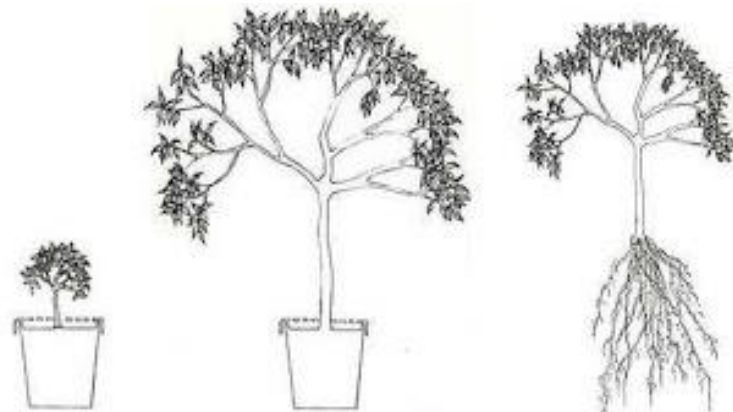
Johann Friedrich Böttger.

**Johann Friedrich Böttger**  
(1682.–1719.)





Jan Baptist van Helmont (1580.–1644.)

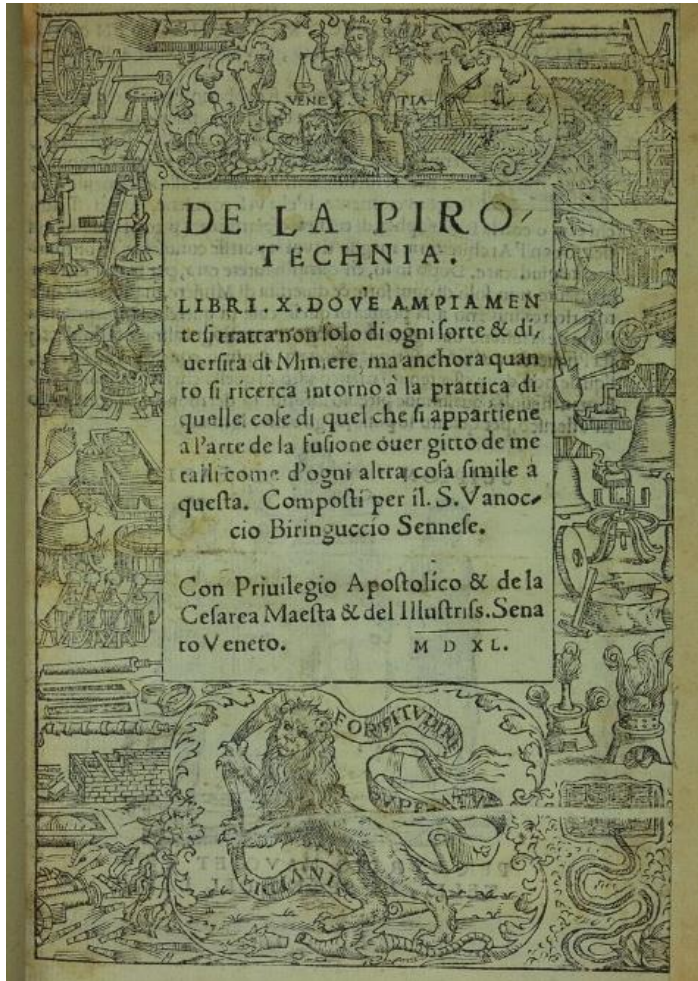




**Vannoccio Biringuccio,**  
(1480.–1539.)



**Georgius Agricola (Georg Bauer;**  
1494.–1555.)



**De la Pirotechnia libri X 1540.**



**De re metallica libri XII, 1556.**

## Hennig Brand (oko 1630. – 1692. ili 1710.)



1. Mokraću kuhati dok ne postane gust sirup
2. Dalje grijati dok ne predestilira crveno ulje (sačuvati)
3. Dalje grijati dok ne ostane crni spužvasti sloj iznad donjeg sloja soli
4. Baciti sol, spojiti crnu spužvastu masu i crveno ulje
5. Jako grijeti smjesu 16 sati
6. Prvo izlaze bijele pare, onda ulje, konačno **fosfor**
7. Fosfor se ohladi u vodi



Johann Kunckel von  
Löwenstern (1630.–1703.)



Gottfried Wilhelm Leibniz  
(1646.–1716.)



Robert Boyle  
(1627.–1691.)