The Virtuous Book of Distillation

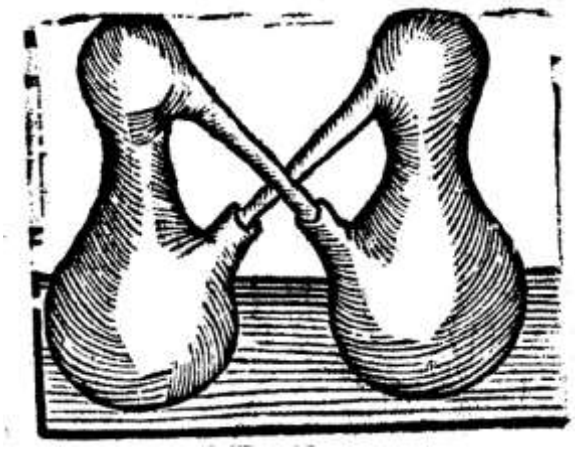
of the waters of all manner of herbs
with the figures of the distillatories.

Imprinted at London in the Fleet Street by Laurence Andrews
in the Sign of the Golden Cross by Fleet Bridge.
In the year of Our Lord MCCCCCXXVII (1527), the 17th day of April.

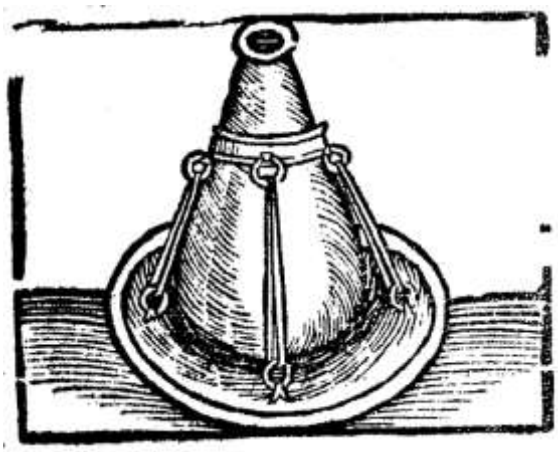
Transcribed to Modern English by Theophrastus von Oberstockstall for
The Restorers of Alchemical Manuscripts Society Digital, 2013.

God's grace shall ever endure.

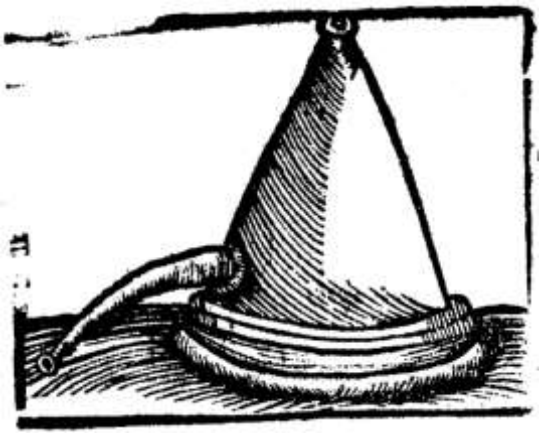
The Distillation through *the Pelican*.



The distillation *per balnem Marie*.



To distil through common stillatory.



The distillation *per filtrum*.

The Prologue of Laurence Andrew[1], the Translator,

After diverse & sundry small volumes & trifles of mirth & parlance some newly composed / some translated and of late finished / Now minded to exercise my pen in matter to the reader somewhat more profitable / I have chosen among all other the book of distillation of waters / written by the thirty years labour of master Hieronymus Brunschwig / to translate into English. Not thinking (though peradventure some in that part will take it) that my knowledge in these two tongues is such that I of all other to this translation should be most mere / but only being moved with natural love onto my country / which surely should want it I were able to perform it / no profitable book for lack of a translator / that is in another language written. For me think where the masters in all science expert will take no further pains / it is an old saying / though power often does fail / a willing heart is to be accepted. Which ones well remembered. Spare not favourable reader to pursue and revolve to the singular health / comfort / and learning / this book of distillation. Learn the high and marvellous virtue of herbs / know how inestimable a preservative to health of man God has provided growing every day at our hand / use the effects with reverence / and give thanks to the maker celestial. Behold how much it exceeds to use medicine of efficacy natural by God ordained than wicked words or charms of efficacy unnatural by the devil invented. Which if you do well mark / you shall have occasion to give the more lovings & praise to our Savour / by reading this book and knowing His benefits innumerable / to whose praise / and health of all my Christian brethren / I have taken upon me this simple translation / will all humble reverence / ever ready to submit me to the correction of the learned reader.

Robertus Huetus ad Lectorem.
Miranda omnipare pandit medicamina matris
Nature: doctum hoc en tibi Lector opus
Vires disce aqueas herbarum: et nullus habeto
Secula vixuro: pharmaca plura tibi.

[1] Andrew Laurence's life was brief, 1510 – 1537; he translated *The Virtuous Book of Distillation* at the age of 17 (which may be an influence on the peradventure comments) from the German '*Liber de arte distillandi,'* Strassburg, *1500*. He is also the author of the earlier title '*The Valuation of Gold and Silver Made in the year 1499'* ca. 1520. Antwerp, 48 p, (An original of *Valuation* is available in the British Library: 24591); and translator from Dutch (German) of Hortus Sanitatis' '*The Noble Life and Natures of beasts, serpents, fowls and fishes*', printed in the same year as *The Virtuous Book of Distillation,* 1527, Antwerp, 156 p., (An original of *Noble Life* is available in the Wellcome Institute for the History of Medicine Library: 13837.5). Both Antwerp titles were printed by Johan van Doesborch. Laurence also reprinted Caxton's '*Mirror of the World*', no date, in Folio, and '*Directory of Conscience'*, without date, in quarto.

There be the chapters of the second part of the first book in which chapters you shall find the manner and science of distillations.

The **first** chapter of the first book shows what distilling is.
The **second** chapter is wherefore distilling is found.
The **third** in how many manners you may distil.
The **fourth** what instruments belong to this work.
The **fifth** chapter shows: how the stones, the *lutum* or loam shall be made belonging onto this work.
The **.vi.** how the common furnaces shall be made belonging to this work.
The **.vii.** how the instruments shall be ordered and the water kept after the distillation.
The **.viii.** how you shall distil per filtrum, named *per filtre distillationem*, that is a filter.
The **.ix.** how you shall distil in the Sun, named *per Solis distillationem*.
The **.x.** to distil in bread in the oven, named *per panis distillatio*.
The **.xi.** to distil in horse dung, named *per fimum equorum distillatio*.
The **.xii.** to distil in an anthill among ants or pismires, named *per formice distillatio*.
The **.xiii.** to distil in warm water, named *distillatio per balneum Marie*.
The **.xiiii.** to distil in water mixed with horse dung, named *distillatio per ventrum equinum*.
The **.xv.** to distil in ashes, named *distillatio per cineris*.
The **.xvi.** to distil in sand, named *distillatio per arenam*.
The **.xvii.** to distil freely in the wind oven, or furnace, named *distillatio per ignem*.
The **.xviii.** to distil in the common stillatory.
The **.xix.** to distil in general each according to his nature.
The **.xx.** to distil at all seasons dry herbs, flowers, root or seed, when the green cannot be gotten.
The **.xxi.** shows how the waters shall be rectified after their distillation.
The **.xxii.** how and where the waters shall be kept and when they must be cast away.
The **.xxiii.** how long they abide good and may be kept.

Hereafter follows the table of the names of the herbs. [Not included in this pamphlet]

Here begins the first part of this book / wherein is comprehended the noble science & the true distillations of waters / and other diverse things artificially.

The first chapter shows what distillation is.

Chapter .i.

In the first it is needful to be expressed and shown what distilling is / for it belongs to all manner of people to understand and know the cause of that thing that they begin or enterprise to work upon / to the intent that he may have a perfect knowledge of such works as be begins / and how he may bring it to a good end.

Wherefore it is to be understood that distilling is none other thing / but only a purifying of the gross from the subtle / & the subtle from the gross / each separately from the other / & to the intent that the corruptible shall be made incorruptible / and to make the material immaterial / & the quick spirits to be made more quicker / because it should the soon pierce & pass through by the virtue of his great goodness and strength that therein is sunk and hide for the conceiving of his healthful operation in the body of man / for distillation is an elemental thing / for through the moving of the natural heavens / everyone must be naturally governed by the bodies above likewise the body of man through an expert master in medicine / and through the waters that there be divided from the grossness of the herbs each in his substance / & that to be conveyed to the place most needful for health & comfort / like as hereafter more diligently shall be declared.

Wherefore distilling is found and ordained.

Chapter .ii.

Distilling is necessarily found and ordained for many manner of necessities / and specially for the love of man him for to keep in health & strength and to bring the sick and weak body again to health / and to the intent that the gross and corruptible body may be again cleansed and purified / for whosoever takes herbs / roots / or other substances and stamp them / the juice thereof strained and ministered is not rightly which many one therefore does then abhor / because of the inconvenient sight.

Secondarily with waters distilled / all manner of confections / syrups / powders / & electuaries[2] be mixed to the intent that they should be the more sightly & dulcet to be ministered received & used. Also this distilling is only found for the common people that dwell far from medicines & physicians / & for them that be not able to pay for costly medicines / which has moved me greatly this my little work to open & disclose for health of man & prosperity of mine even Christian.

Thirdly, the distilling is ordained / because that when only medicine is ministered with her corpus or substance in the manner of electuaries / confections / powders /

[2] *Electuaries* are medical powders mixed with honey.

or syrups or any medicines with eating / or in what manner so ever it be / is *leoperdus* in the body / because of her substance / of which *Avicenna* writes in the beginning of the fourth canon / whereas he through the learning of *Hippocras*[3] says / that every medicine that is used with her substance / enables and makes aged and weak. For which *Hippocras* / *Mesue* / *Arnoldus de Villa Nova* / and many other more have found the noble science to separate the gross and earthy substance from the subtle through the operation / that is named the handwork of distillation / or bringing through the Alembic or helm / and other instruments as here after follows and to you shall be shown.

In how many manners may be distilled.

Chapter .iii.

It is needful with short conclusion to show the most expert & common or lightest way a distilling / to the intent that the reader or learner should understand me without any murmuration or long rehearsing. Wherefore I have two manners of ways wherein is comprehended in brief the shortest way of distillation.

The **first** is how it may be done in **five** manners of ways without any cost.

The **second** the way with cost only of fire and that also in **five** manners.

The **first** without cost / is done through a three corned filter / named *per filter distillation*.

The **second** manner of the first way is this. A glass filled upon another glass turned with the bottom upward / & well stopped / set or so hanged in the Sun / is named *per Solis distillationem*.

The **third** of the **first** way is / A glass filled & welled stopped wrought in dough and so set in the oven when the bread is baking / & is named *per panis distillatio*.

The **fourth** manner of the **first** way is / A glass the third part[4] filled / well stopped and buried in horse dung / & is named / *per fimi equino distillationem*.

The **fifth** manner of the **first** way is A glass filled well stopped buried in an anthill / named *per formice distillatio*.

The **first** manner of the **second** way is of the distilling with fire / as thus. A glass reasonably filled and set in water / under it a fire made / & there upon an helm or Alembic set / named *distillatio balneu Marie* or *distillatio in duplo vase*.

The **second** manner of the **second** way is / you shall put to the same water that the glass stands in / horse dung / that shall it be named / *distillatio per ventrein equinum*.

The **third** manner of the **second** way is / set your glass in a *cupel* whereas sifted ashes be in / named *distillatio per cineris*.

The **fourth** manner of the **second** way is / you shall put sand for ashes in the *cupel*

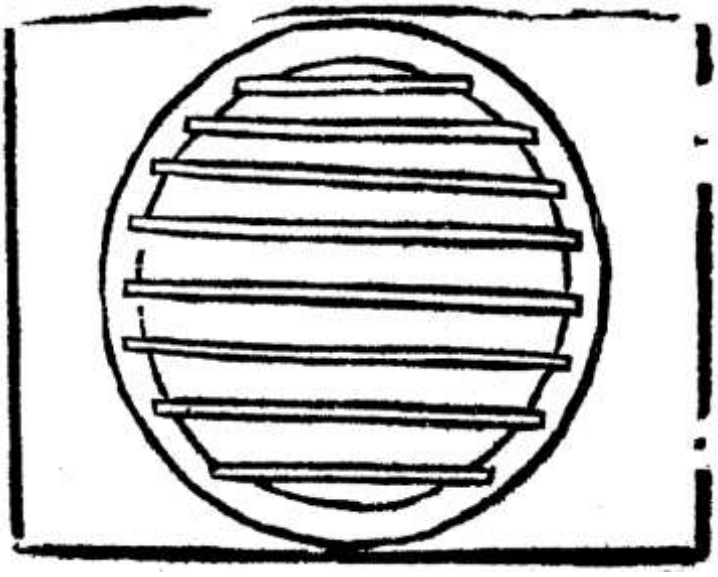
[3] Original text used '*Ipocras*', an obsolete form of *Hippocras*. The spelling, *Ipocras,* was used by Chaucer.
[4] Original texts uses the shortened, '*prte*'.

whereas the glass shall stand in / & is called *distillatio per arenam*.
The fifth manner of the second way is / you shall set boldly the glass upon the fire / & nothing between the fire and it but only an iron grate or an iron trivet / and is named *distillatio per ignem*.
Thus you have the manners of the two ways of distillations with cost & without cost. Now be it many more manners there be to distil / ways out of number whereof the *Alkemists* apart can testify / and is to therein well be known / pending in these for named ten manners of which as now I will cease for shortening of the time / and because as now it is no necessity here to rehearse.

What instruments be necessary or needful onto this work.

Chapter .iv.

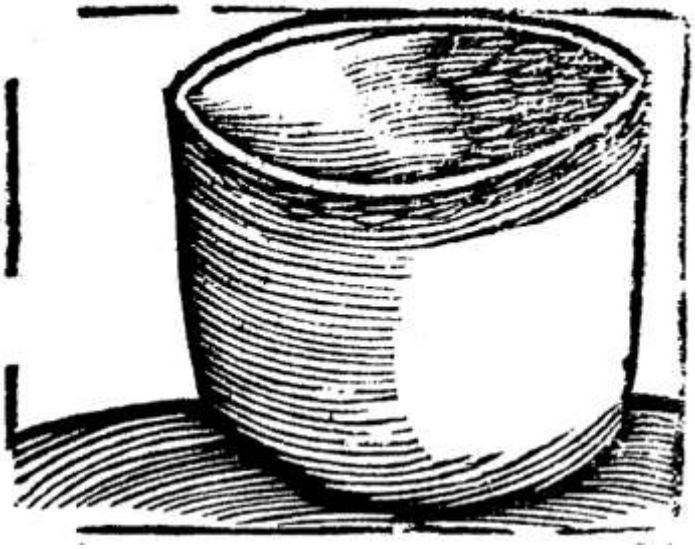
After the rehearsals of the nine manners of the distillations afore said now it is behoveful to know the instruments thereto belonging / which as nigh as God will give me grace / in short conclusion I will to you declare them / as far as it is possible / to the intent that the operation of distillation may be accomplished / and openly show in figures as here after follows. How be it that the learned and expert masters of the science of *Alkemye* hereof have a knowledge / yet it is not open to all manner of people wherefore I shall make hereof as thus the first rehearsal.
You must have three cornered white filters like filters of hats / clay / or loam / brick / baken and unbaken. After that Iron grates a square finger thick / made round or square as this figure shows.



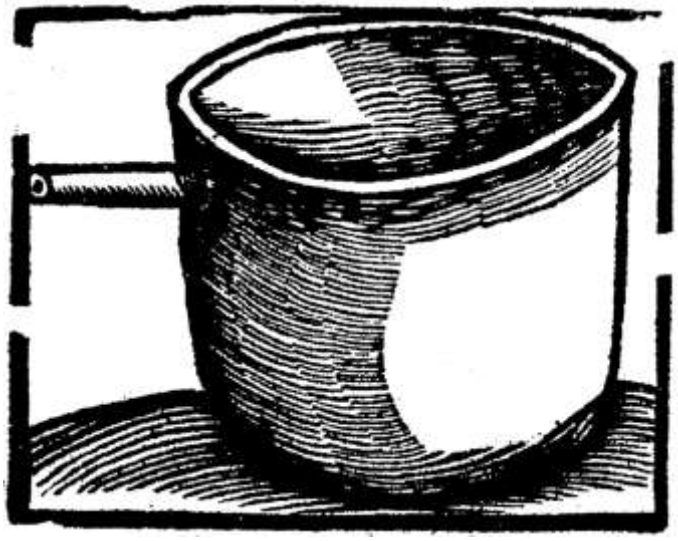
After that you must have *cupels* of white clay / such as the gold smiths crucibles is made of / some leaded and some not leaded / commonly half a yard[5] wide and deep /

[5] The 'Yard' began usage between 1266 – 1303.

or more or less as below according to the proportion of the furnace. And the *cupels* be made of this manner in figures following.

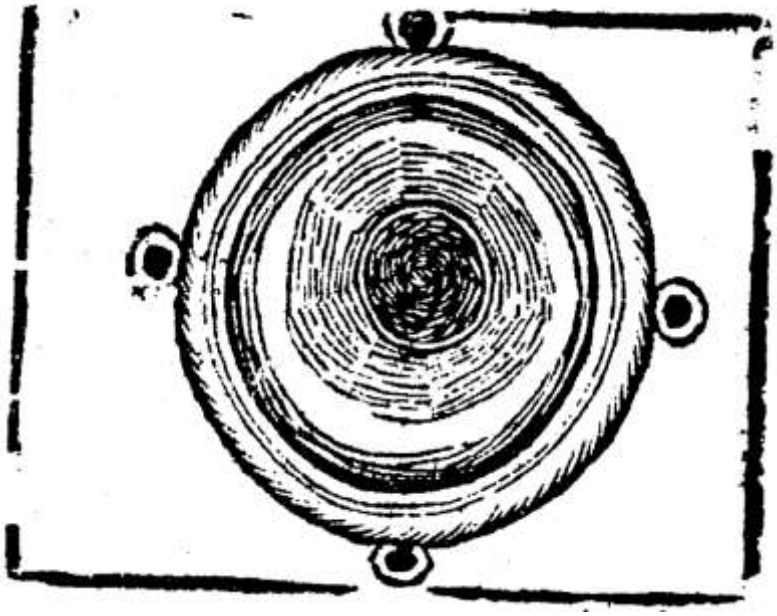


After that you must have copper kettles or copper *cupel* is being in quarter & half a yard of wideness and depth with a pipe of copper being a quarter & a half a yard length / and it shall stand within two finger breath of the border or edge of the kettle as this figure shows / for to distil in *balneo Marie* or in *ventre equino* as here after I shall to you more expressly declare.

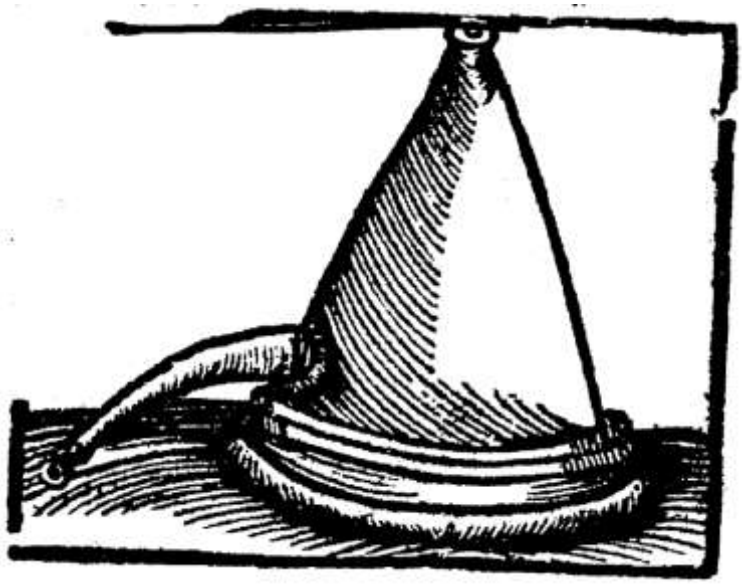


Then must you have leaden plates through verified in the middle / with four round rings about it / great and small light and heavy. The middle bar of ten pound weight; The small of eight pound; The greatest of all eleven or twelve pound / as this figure following shows. Also you must have borders as broad and long as the *cupel* or furnace is / in such manner that the glass may stand in the middle most hole / to the intent that the glass do not fall one way or other through the heaviness of the anhanging[6] of the leads in the binding thereto when you shall / distil in *balneo Marie*.

[6] *Anhang*, (German). Attachment.

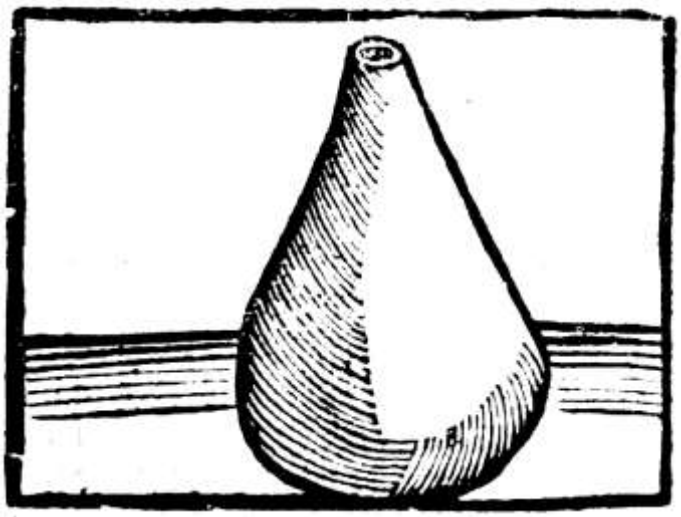


After that you must have helms made of white clay / such as before is specified / & they must be leaded within & without / or else they must be copper / tin or lead of the fashion here after following.



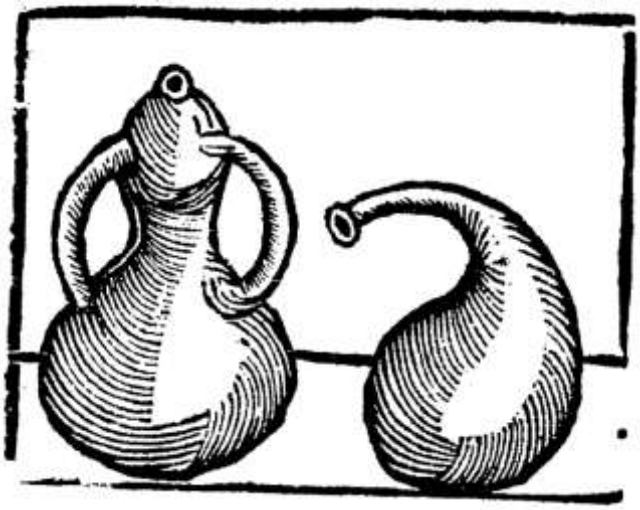
Under that must have pans according to the quantity / made of crucible earth glazed or leaded without and within or else made of copper / tin / or lead / according to your power. After that you must have glasses / or phials named *Eircubit*[7] of such fashion as this figure shows. And they must be made of Venice glass because they should the better withstand the heat of the fire.

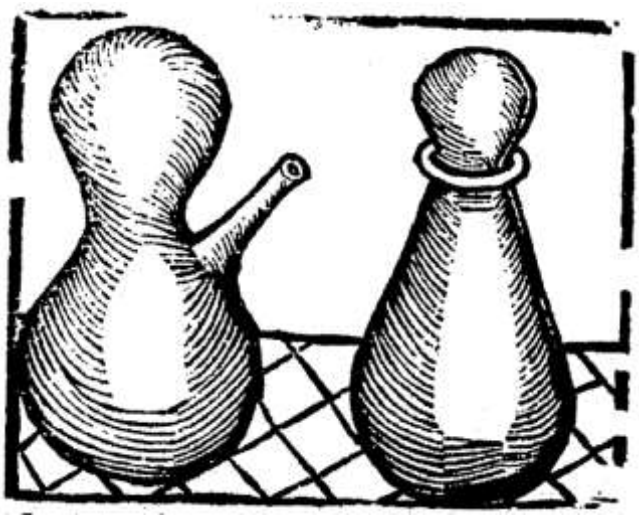
[7] Original text, *Eyrubyt* (old German): Phial; also a unit of measurement (*Ell*) of length arm from elbow, similar to a *Cubit*: ~1.14m. Interestingly Laurence includes this word, *Eyrubyt*, in his translation, either as a matter of interest and recognition as a common term by an English reading audience, or otherwise as a failing of the translator's knowledge of the science. In this context, the previous inclusion of the *anhanging* to describe the attached leads may not agree with the observations of language skills.



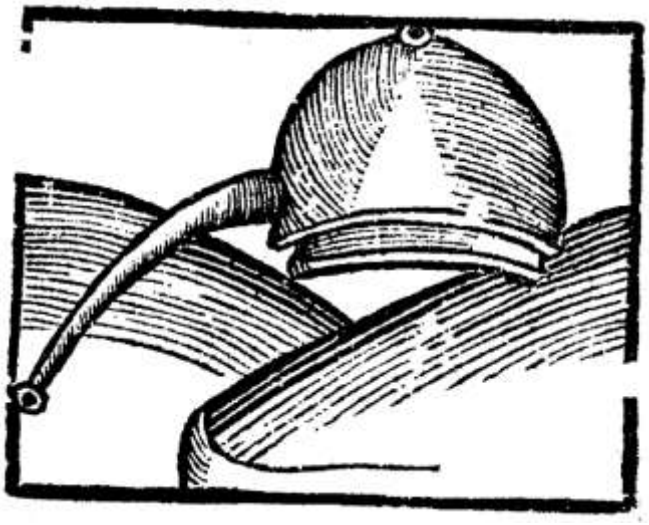
Also you must have glasses or phials that you must whelm each upon other / of such fashion as here is shown / for to distil there within the Sun as more expressly in the .ix. chapter shall appear.

You must have also crooked glasses named *retort* / and also glasses with two arms named *pelican* / fashioned as this figure shows.

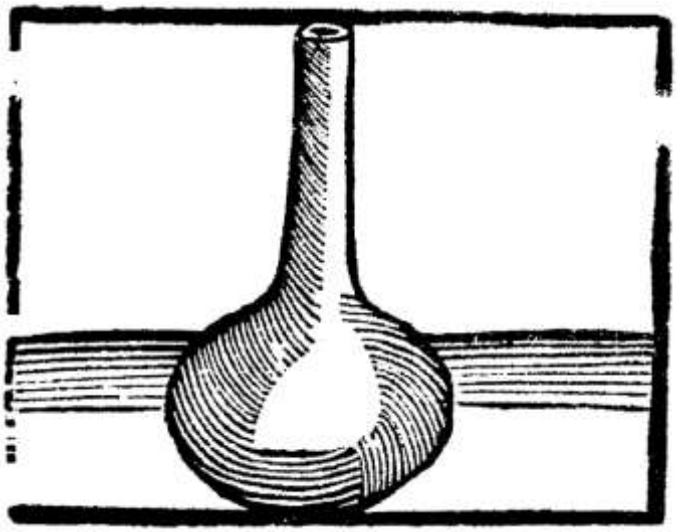




After that you must have blind helmets of glass like a gourd turned in to another glass without any pipe / named *alembicum recum*. And glasses that be wide above and beneath and narrow in the middle named *circulatorium* as here is figured / for to putrefy & digest therein as here after more plainly is expressed.



After that you must have helms of glass with long pipes / called *alembics* or *alembicum* as this picture shows.

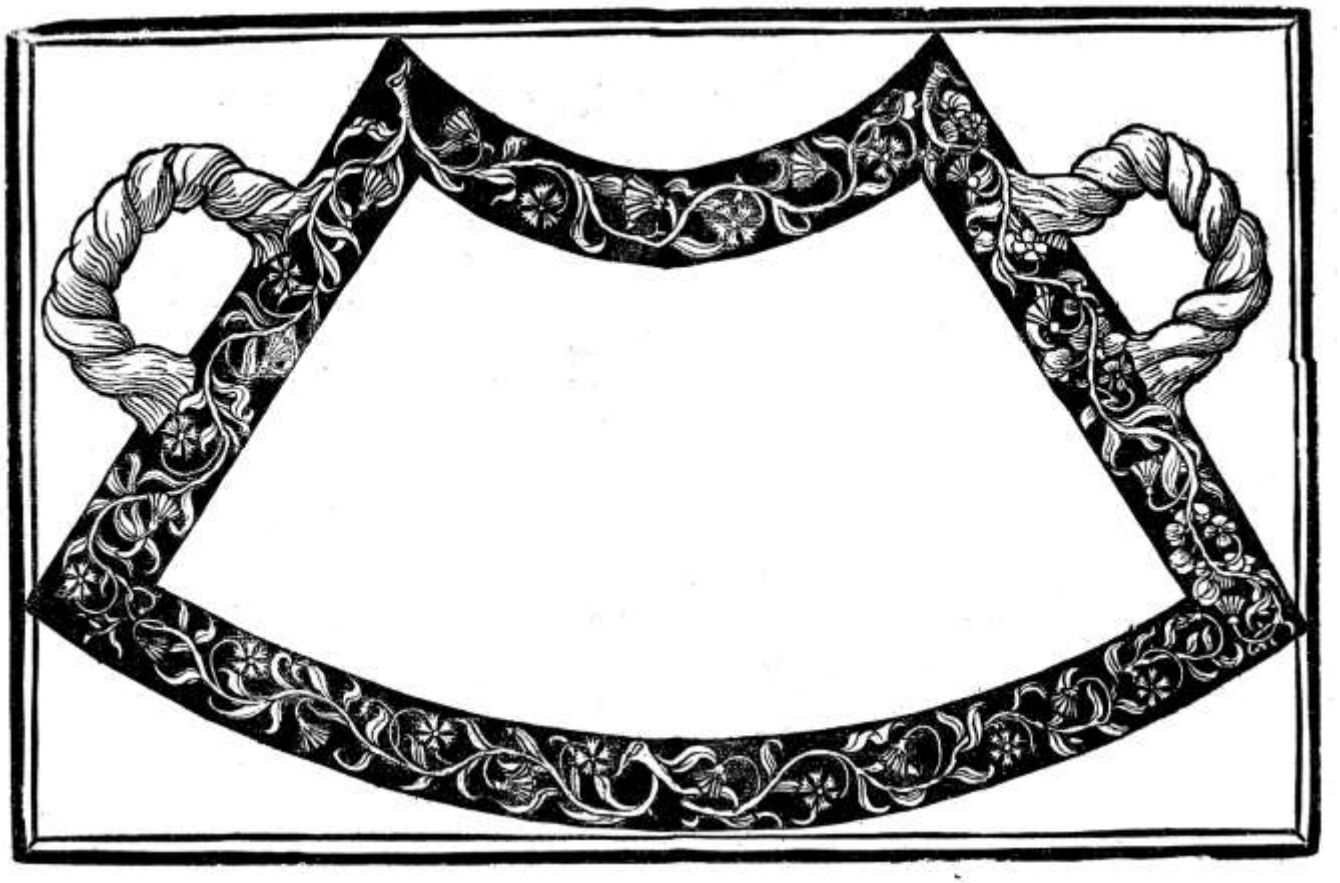


You must have glasses name *phials* with long necks and narrow mouths to receive the water that comes from the pipe of the alembic of the fashion of the same following. You must have also stone cans / or *cruets*[8] to keep the waters in after they be distilled.

How that you should make the stones[9] /clay/or lutum that belongs to these works.

Chapter .v.

The mould or form shall be as large and wide within as this picture[10] is in every conditions like great and small / within the black circle which is the instrument to fashion the stone in which stones must dry by their own accord / because the oven should not rive / nor cleave / with the heat of the fire / & when they be dry they shall finish the third part in length / breadth / & thickness. The six stones make a round lay to the oven. The five stones and a half makes a round lay to the wind hole of the furnace where as you draw out the ashes and other five stones and a half closes another round lay save the hole where you put the coals in / and thus make the furnace.



[8] *Cruet*, originally spelt *crukys*. Small flat bottomed bottle with long neck.
[9] Stones refers to bricks.
[10] Originally a two page spread woodcut image of excessive decoration. The handles are later referred to as *ears* in the text. The flowers are hand-painted red and white in the 1528 edition.

By the grace of almighty God onto you shall be declared the handy work of this here after following / to which you be desirous for to accomplish for to form or make your furnace of / it is of necessity that you should have an instrument of iron or nut tree / or pear tree made of seven inches thick. Also you must have good mean earth neither too fat nor too lean / well purified from all uncleanness / and tempered with water. Also it must be wetted and trodden together / till it be temperate and of manner like wax or dough. The form must be thrust in water or made wet & laid in sand upon a board / & therein you shall put of your foresaid clay. If there be too much / you shall strike it off with a wet hand / & then you shall lift up your instrument by the ears / & knock upon it on another board / then the stones shall fall out. And the instrument is as the precedent picture shows, And in this manner you may make as many & as few stones as you will / and set them in the air in a shadowy place / or lie in your house till they be dry. And you may take iron cinders small beaten to powder the eighth part thereof as much as clay / than the stones become as hard as iron in the fire. Or else bear your instrument to the tile maker and cause him to make as many as you need.

When you have your stones it is needful to you to temper your loam or clay for your furnace in such manner that he do not rive nor cleave / not only your furnace but also the instruments of copper / iron / glass or earthen / to be stricken or lute them therewith at all times required.

First you must have a tough purified clay at the potters well be known to where / flocks / or horse cords[11] / beaten with a little wand till every be loose from another / then shall they be chopped small / and tempered with the clay / so much that it be the third part of the clay / and it is best that you temper it with salt water / to the intent that the clay does not rive with the fire. Nor no manner *cupels* / pans / or glasses / that be luted therewith three or four times over / and so let it dry by himself.

If you will make a loam or clay to anoint your glasses or phials you must take pure clay or loam / and put it in a tube or pail or other close vessel / and cast wine upon it and mix it with horse turds / and with smack slivers or herbs of flax / like thick paper / and therewith anoint and over strike your glasses or phials / and let them so dry by themself in the shadow. If you will that no manner of stones shall rive / rent nor burst asunder through the heat of the fire / then temper your loam with stilled water of nettles and anoint or wash therewith your stones. Also that no manner of linen cloth burn with the fire / that your glasses shall be luted with / when the one is whelmed on the other / take your linen cloth and dip it well in salt water and then let it in the white of an egg well beaten / & let it dry again by himself.

When you will lute anything whatsoever it be / anoint it well with fine clay tempered as is before specified. Note a luting for a glass that rives upon the fire / take red lead

[11] It is presumed that Horse cords, chords, turds and dung are the same material.

and half as much unslaked lime[12] beaten to powder and a little dust meal of the mills / temper all this together with white of an egg / and make a linen cloth wet therein / and hold it a little by the fire till it be warm / and so ordered lay it to the rive of the glass standing upon the fire / you must beware that no manner of cold thing toward your glass the while that It is hot / for that will make it to rent and break asunder.
Thus shall you make *lutum sapsentie*: as *Arnoldus de Villa Nova*[13] says where with you shall lute all manner of glasses / to the intent that the fire shall not perish or hurt it. Take two parts of well purified loam or clay / and one part of horse turd / clean gathered as before is said. And to the intent that the clay shall be the stronger / and not rent nor rive. Then put thereto the powder of tile stones / or else powder of unslaked lime / all this same with salt water / well mixed together with your hands in a manner of thin dough / and so occupied.
Thus have I shown you diverse manner and ways of luting and how to be ordered. If you desire any more to know thereof / you may enquire that of the *alkemystes*[14].

How you shall make the common furnaces that belongs to this work.

Chapter .vi.

In diverse manners & forms the furnaces be made / therefor by the help of almighty God shall I show you the most common & ready ways he to needful & most necessary / & leave the other unrehearsed / because I will eschew the righteousness of the readers and the learners of the science / to the accomplishing of our forenamed works my purpose is to show you two manners of ways / and every way in diverse manner of forms / as hereafter plainly to you shall be expressed. The first way of these furnaces or distillatories that he commonly used / been named *rose garlands*[15] or *helmets*. Another manner there is to be made furnaces of fashions. The first is to be shown of the furnaces that been well be known among the potters made of earth leaded or glassed / of fashion like the figure here before / and it may be removed from one place to another.

[12] Calcium Oxide, or quicklime. It is produced from calcining Lime at approximately 900°C in a kiln. Lime or calcium carbonate can be easily produced by extraction from egg shells via evaporation of ice distilled vinegar extract if no chemical compounds are readily available.
[13] Possibly attributed to the title "*Liber de Vinis*", as the German title "*Von Bewahrung und Beritung der Wein*". The text was first printed in Strassburg in German in 1482 though was available in Esslingen in 1475. This text received countless reprinting between 1475 and 1530, six alone in Strassburg, in part displaying its popularity.
[14] The original spelling of *Alchemist* has been retained throughout the text as it is curious to note the different spelling which should be recognized for its identity.
[15] A curious use of naming that shows no obvious connection to other equipment naming, yet the use of *Rose garland* may simply refer to the top position of the helm in the distillatory construction. Equipment names in the original text are a mixture of German, French (such as the original spelling of phial is *Fioles* (French) which originated from *Fiola* (late Latin), and Latin.

How you shall distil in sand / named *distillatio per arenam*.

This chapter is ordered in every conditions like as the chapter speaking of the distilling in the ashes save only the glasses need to be better as Venice glass is there to best / and also the glasses must be strongly luted / and for the ashes / you must take pure sifted sand / and as you tell one two three be the clock[16] / so softly must your drops fall and thus you must order yourself if you will have the true way of distillation for it is the highest degree in heat of all distillations / wherefore take heed that you make not too sharp a fire / for if you do your waters will burn and stink and your glasses will burst. Also you shall never distil your herbs to dry out of all moisture in the ashes

[16] Clock-works are recorded as early as 13th Century.

or the sand as you may do in *balneo Marie* / or in *ventre equino*. For in *balneo Marie* or in *ventre equino* they can never be out stilled so dry that they can burn / stink[17] or take harm. But in ashes / and especially in sand / for therein at the end commonly they burn / therefor take heed to the intent that you may the better obtain your purpose.

Another furnace you may make after the fashion of the great figure with two three or four helms / that by all heat with one fire / and in every helm a sundry water distilling / but that furnace may not be removed / wherefore you must take heed in what place you set it in that there come no scathe thereof and that shall you make in this manner. First make the hearth as long & broad as you will which shall be the foot or fundament of the furnace whereas the ashes shall fall on / & then lay two layers of stone in height above it that it may be hollow in the middle. Above the hollow place you shall lay round or square iron bars every bar a great inch of thickness and they must be laid an inch from each other as before is figured / and above the grid iron or iron bars you shall make up your furnace always the longer the wider within of a foot high / and within it shall be anointed with the loam or clay tempered with salt water thereto prepared as is before said.

On the upper most part you shall lay two strong iron bars eight inches from each other well anointed. Upon the foresaid bars shall be laid a great iron plate meetly[18] thick with a hole in the middle / for to cast the coals through under the plate shall be made four wind holes / for to let the smoke out / then the plate shall be anointed as the bars be more specified well thick / and above the plate the furnace shall be rested all most half a stone thickness / and in the middle of the furnace an hole shall be left open just above the hole of the plate where the coals be cast through. Upon the said plate shall be left four broad pits according to the quantity of your helms. In which pits you shall put shall set your pans may not well abide by the fire without melting / except you make very small fire under it / upon such pans be set the stillatories named *helmets* / or *rose garlands* here before rehearsed and figured. And to every smoke hole you shall make a plug or tap to govern your fire with / great / or small as it is needful.

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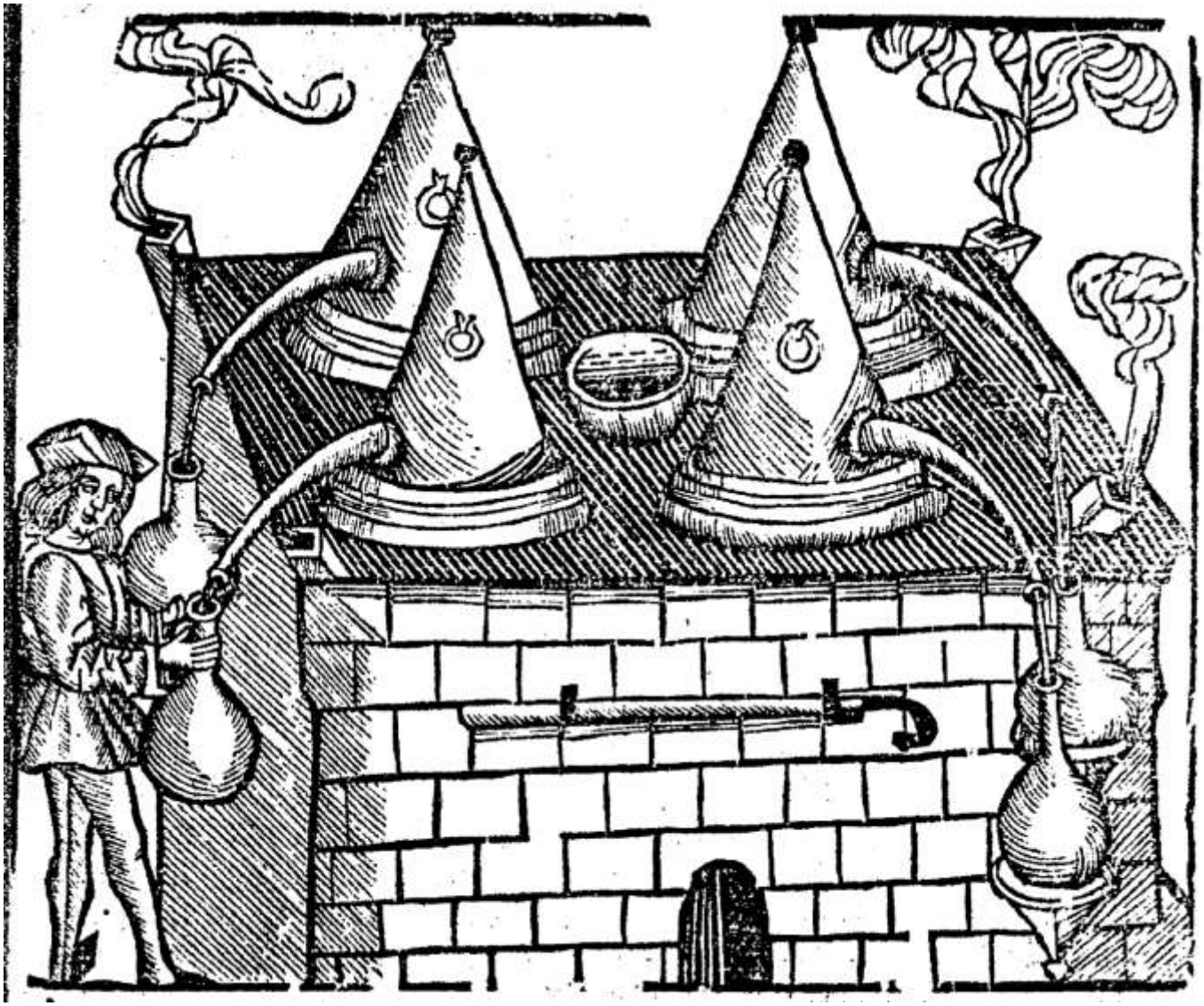
[17] This current transcription was made for *The Restorers of Alchemical Manuscripts Society (R.A.M.S.) digital*, 2013, by *Theophrastus von Oberstockstall,* author of *The Ripley Scroll Revealed*, 2012, who also added the footnotes. It is a modernisation of *Laurence Andrew's* first English translation, 1527, of the *The Virtuous Book of Distillation,* later reprinted in 1530. The text, first printed in 1500 in German, was reprinted in Strassburg in 1509, 1512, 1515, 1519, 1521, 1528, 1531, & 1532. Every effort has been made to improve the readability of this text without compromising the Middle English style of the original. Where readability is compromised a modern grammatical structure has been lightly applied. Most words have been transcribed to a direct modern spelling. The '&' and '/' symbols are maintained from the original. A few English words that have fallen from modern usage have remained with a definitive footnote. In the original print, the usage of a bar above a vowel denoted that an *n* follow; such as *instant* would appear as īstāt.

[18] *Meetly*. Suitably; appropriately



Here after follows of another manner of furnace for distillations as here is figured.
When you will make a stillatory then lay upon the hearth five stones in manner of a ring / which fashion of stone stands figured in the .v. chapter the fixed stone[19] that be divided in twain then the mouth of the furnace abides open / then lay upon the next lay six stones / couched mason wise / then anoint it without and within with such clay as before is spoken of / then lay the grate or iron bars over it / and lay again six stones upon it / & upon that / lay again six stones / upon these lay six lay again five and a half / and then abides the hole open to put the coals in / and see that it be always well luted or anointed as is before said. Then lay again six stones to close the mouth above / then lay again six stones well luted always / then lay upon it a round ring like a trivet[20] / and that must be very well luted with the clay before said.

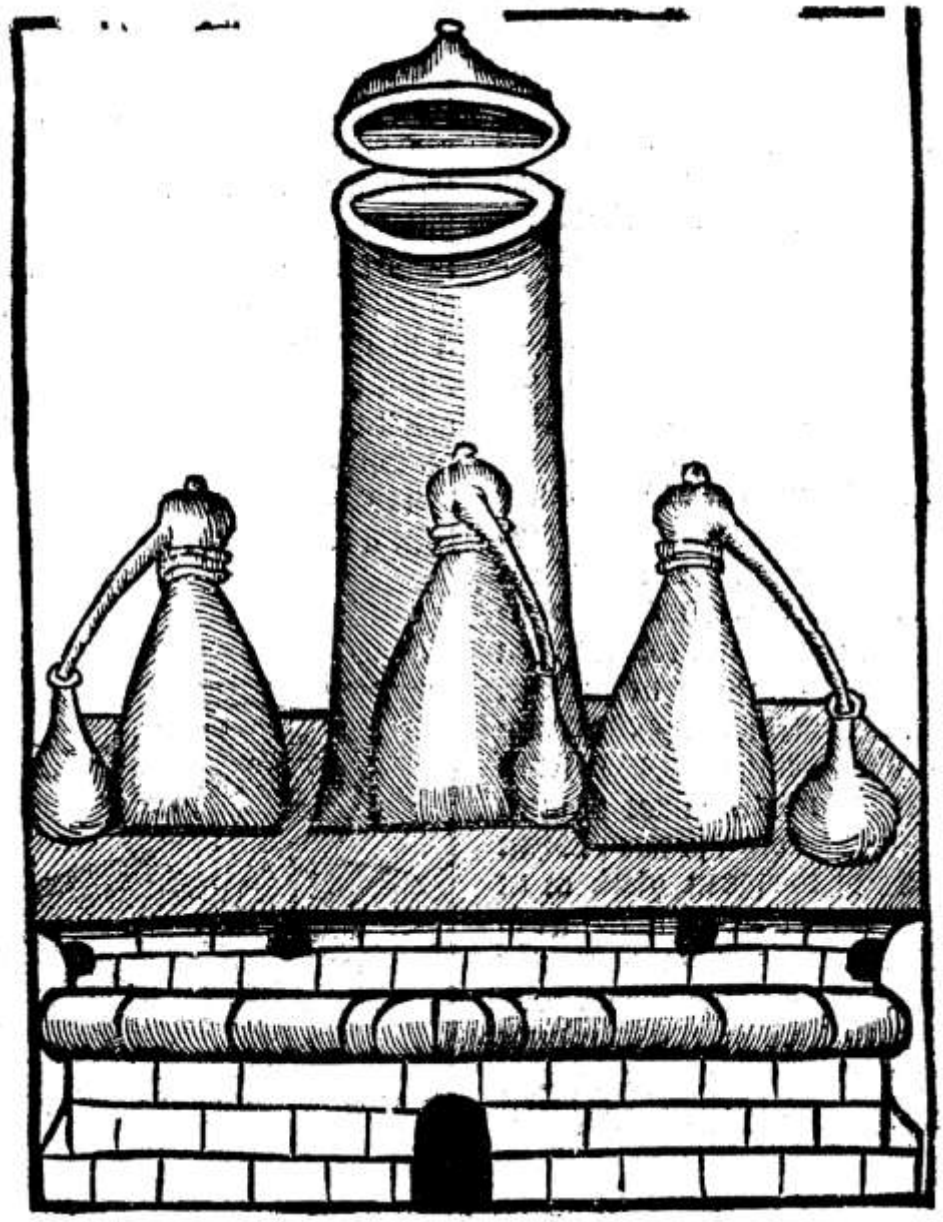
[19] Again it should be reminded that here a Stone is a Brick, produced in the shape of the mold that is depicted in the .v. chapter.
[20] *Trivet*. An iron tripod.

Upon the trivet or iron you shall set an earthen *cupel*[21] as before is said / and that well luted / then you shall heighten your furnace so long till he be as high as the *cupel* in such manner that you have four wind holes or smoke holes above / made just to the *cupel* with four earthen taps / to govern the fire / you shall strew sifted ashes / or sand in the *cupel* / & therein set your glasses / & the ashes or said shall be four inches thick strewed.

If you desire to make a furnace or stillatory named *balneo Marie* then take for the earthen *cupel* a copper *cupel* / or kettle with a copper pipe as before is figured / & that well luted and set the pipe before over the furnace lest the water fortune to set as if it should run over / then shall it run through the pipe without hurting the furnace.
In such copper kettle / or *cupel* shall be none ashes not sand for it burns lightly but you may put therein horse turds / for to be stilled in *ventre equino*.

[21] *Cupel* in the original print appears with numerous phonetic spelling, for consistency *Cupel* is adopted in this text.

Also there be other furnaces made with a long high pipe in the middle with three or four *cupels* about / and therein a grate of iron underneath the long pipe above the hole whereas the ashes be drawn / & have holes severally[22] under every *cupel* has a sundry furnace pending to the said long pipe. And every *cupel* has a smoke or wind hole / for to give through it a several heat to every *cupel* / and that to draw to his register. And thus you may heat your *cupels* / severally or all in general the long pipe standing in the middle shall be filled with coals / and it shall be well closed above / that none air come out / then the fire burns only upon the iron grate / you may make this pipe as high and as low as it shall please you / and keep the fire with stopping of the wind holes above and beneath as need requires with thirteen or fourteen taps / and this furnace is made as here is figured.



[22] *Severally*. Separately, singly.

How you shall order or prepare your instruments where as your waters shall be distilled & also kept.

Chapter .vii.

After the preparation of your furnaces / it is needful to you and expedient to make and prepare your instruments and your vessels to keep your water in after that they be distilled and so many you well accomplish this noble practise and former enterprise.

First when you well distil in glasses set in ashes or sand / it is necessary for you to overlute them more than half the part of the glass with the forenamed loam or clay / but they that be occupied in *balneo Marie* need not to be luted / and such glasses be named *cucurbit* & the best glass thereto belonging be made of Bohemia glass or of the great round shives[23] of Venice glass. And such *cucurbits* been not only made of glass but also of crucible earth well glazed within / some be made of copper / lead / or tin. The tin be occupied in *balneo Marie* /and copper been often times luted and so set in the fire. The copper be sometime occupied in *baleo Marie* also / sometime they be set in ashes or sand / and they must be luted more than the two other parts. When you will put anything in glass or in any other instruments of what nature so ever the substance be / wet your cloth in your *lutum* or clay / and wind your glasses therein twice or thrice round about. And when you will distil oil or any such like / then you must anoint it with your foresaid *lutum* two inches thick / yet it will scantly hold. For the oil will often times perse throughout / therefore you must take heed to your *lutum* or clay / if you will keep your waters well after the distillations you must take a stone crook / but if you cannot get such as you desire / then take an earthen can and set it in an oven when the bread is drawn / when it is through warm then put in it molten wax and stir that roundabout that the max may cleave to every place. Then turn it with the bottom upward and pour out of the wax / then anoint the can without with a woollen cloth full of molten tallow / then set it again little within the oven then the wax and the tallow soaks into the can. And when it is cold then put your water therein and stop the mouth thereof with a wooden tap and with wax / and hang on the crook in a small bill the name of your water / and what time it is distilled.

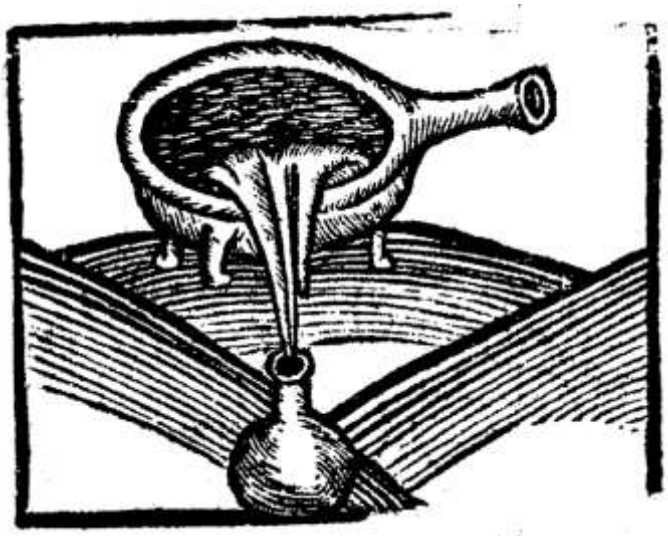
How you shall distil through a filter named *per filtrum distillatio*.

Chapter .viii.

For to distil all manner of vapour or other watery moistures through a filter / as water / wine / or other liquor or sap / which you will purify from all troublous[24] and unclear substances / for you can distil no manner of hard things through a filter / as herbs / roots / or fruits because of his hardness. Wherefore you must have ten or twelve filters pure and white / being three square / a foot of length & eight inches of breadth

[23] *Shive*. A plug for stopping a mouth of a bottle.
[24] *Troublous*. Turbid.

/ and the vapour or liquor shall be done in an earthen pan well leaded within and the pan shall be set up on a high stair or rises / which pan shall be somewhat leaning wherein shall lay the broadest end of the filter / & the smallest end shall hang in a glass / or in another pan that shall stand upon the next step of the stair downwards / & in the said under most pan shall be a filter laid as it was in the first always the pan leaning downwards and the filter with the smallest end hanging downwards in another pan / & so forth doing with as many filters and as often as you will.



When your filters be over laden & stopped with the uncleanness that therein is soaked by the distillation / you shall wash them in fair waters till they be purified of their uncleanness / then you shall dry them again / and lay them in the pan as they were before. In this manner you may distil ten or twelve times in a day with one labour / till the substance be purely clarified from all uncleanness / And this is principally good for the waters that be distilled with fire for to rectify them here with or in the Sun / and this is the first manner to distil without fire.

How you shall distil in the Sun named *per Solis distilationem*.

Chapter .ix.

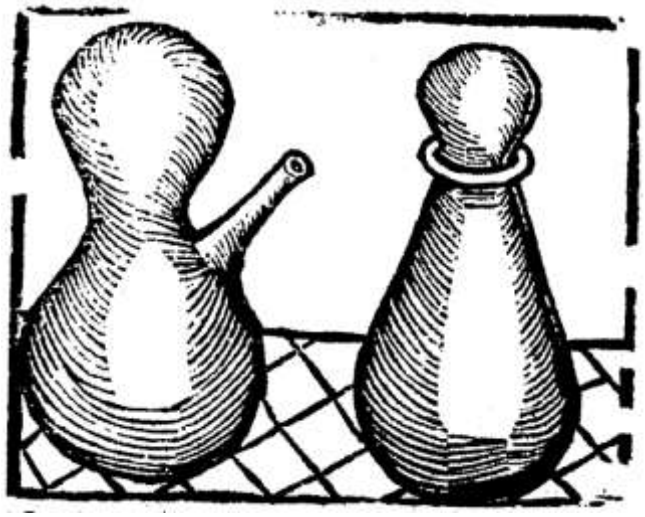
The second manner to distil without fire which may be done without cost is thus / you shall take a glass that shall be almost as wide above as beneath named an *urinal* / or like this figure above.

The two parts of this glass shall be filled with blossom of flowers / as Roses / Violets / or other blossoms / or such like / then shall you make a small cross of wooden sticks and lay that upon the mouth of the glass. Then make another cross of small sticks somewhat longer than the other that may be bent cross wise over the other straight within the glass to make them both sure. Then turn the mouth of the glass downwards upon the mouth of such another glass / that the mouth of it may be somewhat within the first glass. Then lute them well together that there come no air out / then land them in the hottest of the Sun / the glass with the flowers upward. Thus distil your substance through the heat of the Sun out of the upper most glass into the under most.

How you distil in hot bread within an oven, named *per panus distillationem*.

Chapter .x.

Thus shall you distil in an oven. Take a flat flagon or bottle of glass / & put it full of Roses or other flowers or Pismire eggs / or any other blossom / then stop the glass fast with a wooden stopple / and cover the glass overall / as if it were a loaf and put it in the oven / when you put other bread therein and draw it out again with that same bread when it is baken / and let it cool by himself / and when the bread is cold then break it softly off / saving the glass from breaking then pull out the stopple / and put it in another glass / and order it as the other glass was / so often till it be enough. If it be not pure then and clean enough you may distil it *per filtrum* if you will. And there two manners be very good to distil of flowers the waters see rising for the rain.

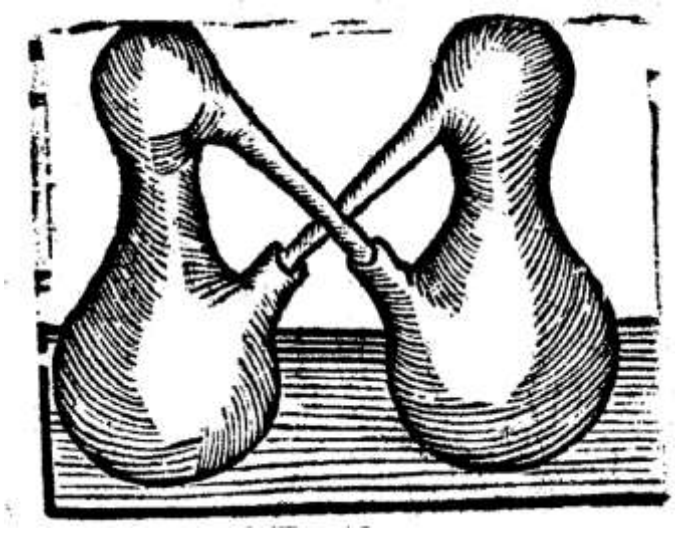


How you shall distil in horse dung named *per fimum equorum distillatio*.

Chapter .xi.

Take a glass like a gourd named in Latin *cucurbit* on it a blind helm. Or else take a glass that is small in the middle / and great beneath and also above / named in Latin *circulatorium* like as these glasses here be figured above.

Fill the third part of this glass with what manner of flowers that you will and stop that glass well with a wooden stopple and over lute it well / then put the glass in warm horse dung / which horse dung must lay in a wooden vessel thrice wise well stopped and covered / and therein it must lay a month or longer and also this horse dung must be renewed every fortnight / after that draw out the tap softly / then purify the clearest of in another glass named a *pelican* which before is figured or in another / whereof there be twain as here is figured the one in the other.



This glass or the *pelican* shall be well luted and also set in the horse dung as before is said / then this liquor or water will run up and down from the one glass in the other. Then becomes it fair / and of great operation. Thus been also other costly waters rectified / as *Aurum potabile* / *Aqua vite* / and other waters / for with the great running up and down in the *pelican* it is rectified and amended / thus you have the forth manner if distillation without fire.

How you shall distil in a pismire hill named *per formice distillationem*.

Chapter .xii.

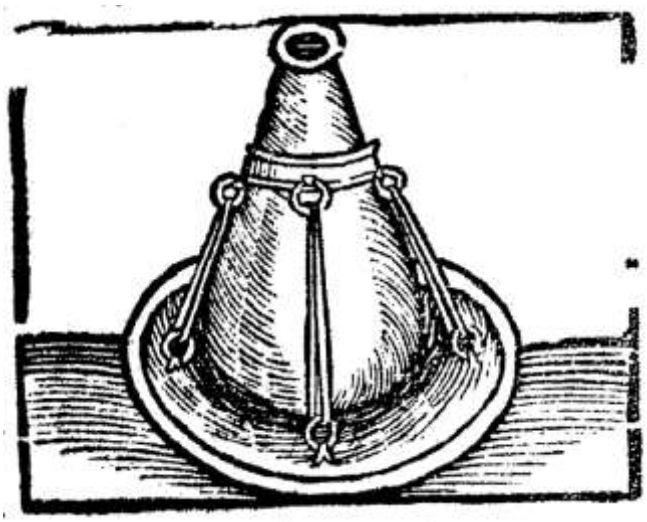
The fifth manner is thus. Fill a glass full of flowers / of what manner of flowers you will / and stopped in the manner aforesaid / then bury it in a pismire hill / that some call an ant hill whereas many of them be fourteen days and more as you think that need requires. Then take out the glass again and pour out the clearest above thereof into another glass and hang it in the Sun / or put it in a *pelican* in horse dung to rectified it as before is said / then it shall be pure and fair. In this manner is wine put into a glass / and set in a pismire hill as before is said a month continuing. Then it

shall be put and fair / as if it were distilled by *alembic* / and has a good taste and is well smelling. In this manner is distilled the dew of May. Thus have you the fifth manner of distillation without fire.

How you shall distil in balneo Marie named *per balneum Marie* / or *in duplo vase*.

Chapter .xiii.

The sixth manner of distillation is ordered in this manner. The glass shall be set in warm water which water shall be in a copper kettle or copper *cupel* with a pipe of copper / as I have shown you before that the furnace be not wet if it fortuned to seethe and run over. And the distillation is ordered thus. Take a glass named *cucurbit* / fill the two parts of the same glass with herbs / flowers / leaves / fruits or whatsoever it be chopped small / and set the glass upon a ring of lead like as before is figured in the .iv. chapter / made a band of cloth three fingers broad about the upper part of the glass / About the same band make four small rings of cloth having four bands coming down to the four rings that be fastened on the leaden ring and bind them fast each to the other as here is figured.



Then set the glass with the lead in the water and stand upright / and is sure from falling on the one side or the other through the weight of the lead / then set the *alembic* or glass and lute it well as before is specified in the .v. chapter / then make fire in your furnace to heat your water with / and let it be no hotter than you may suffer your finger in it / and have all time warm water to fill your kettle again / when the water by length of time is wasted through the heat of the fire / for if a drop of cold water touch the glass it will rive and break asunder. You shall understand that when it drops no more if is clean distilled / then you must let the glass stand still in it for to cool / for if you draw the glass hot out of it / it would break asunder. It is needful for you also to have around border with a round hole in the middle & cleft asunder for to lay always about the glass to the intent that it may be the longer warm. You shall also

understand that all manner of waters that be distilled in this manner keep the sovereign scent and odour of the herbs that those waters be distilled of wherefore they be greatly praised & that much better than the waters of the herbs & flowers that be put in a glass / as it is shown in the .xi. chapter of that / that is buried in horse dung five or six weeks to be putrefied / & then the one with the other distilled in *balneo Marie* as I showed you before.

How you shall distil in the horse belly named *distallio per ventre equino* in Latin.

Chapter .xiiii.

The seventh manner is thus to distil in the horse belly / you shall set the glass filled in the forenamed manner in *balneo Marie* / as before is said but in the water you shall put horse tordes / taking good heed that there be no straw no hay therein / and that the water be so thick if the horse turds as if it were mortis. You must also take heed that you put often times warm water in it / for it is soon consumed & wasted away / and this is half a degree hotter than in *balneo Marie* / therefore you may distil harder substances in it than in *balneo Marie*.

How you shall distil in ashes / named *distillatio per cineris*.

Chapter .xv.

The eighth manner is you shall strew fine sifted ashes in a *cupel* four inches of thickness / then fill a glass the third part full with such substance as you will / and set it in the ashes / then fill the *cupel* full of ashes till the third part of the glass be covered / and the *cupel* whereas the ashes be in shall be of earth for it were of copper / through the force and heat of the fire it would melt. After that set the *alembic* upon the glass and lute it well upon it with *lutum sapiency* as I have shown you before in the .v. chapter. Then make fire under it that it may drop treatably as if you would tell the clock 1, 2, that then there fall a drop / and so continue after the same soft manner / for if it fall faster or quicker the fire is too great therefore stop the wind holes above and beneath / then it shall fall the softer and burn the less / and so it shall smell the less of the fire / when it drops no more then let the glass stand a whole night a cooling or ever you move or stir it / or else it would break asunder. The glass be also luted to the third part / as it is shown to you before in the .v. chapter because they should break the less.

How you shall distil in the sand / named *distillatio per arenam*.

Chapter .xvi.

This part is ordered in every condition as the chapter is ordered of the ashes & as before is shown in the .xv. chapter, etc.

How you shall freely distil on the fire with a wind oven / named *distilatio per ignem*.

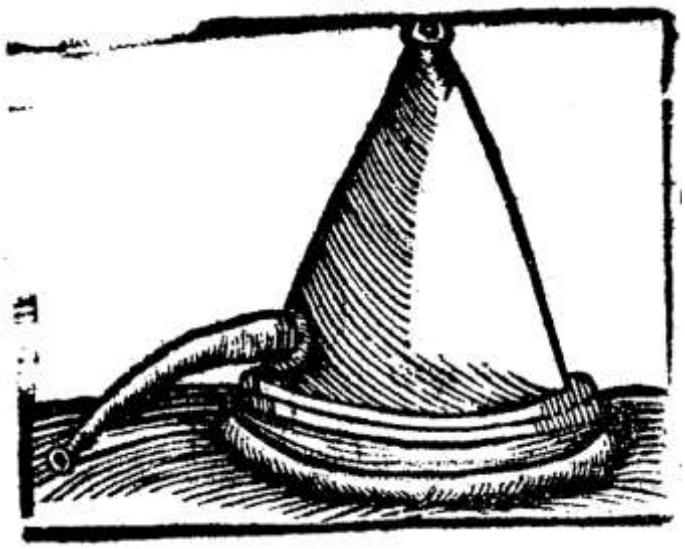
Chapter .xvii.

The tenth manner is this to distil so that there be nothing between the glass and the fire / like as *Aqua fortis* and other strong waters be distilled. To this distillation is necessary for you to have a trivet in the middle of the furnace with the three feet masoned in the wall of it / and the glass must be made of Venice shive glass. That glass shall be on the outside well luted a great inch of thickness and after that you shall fill the third part of your glass / which shall be also well anointed with such clay as before has been spoken of / then shall you anoint your furnace in the same manner / And after that you shall set the *alembic* on your glass and see that it be well luted / then you shall set a receptacle or phial so that the pipe of the *alembic* hang within it / and then it must be well luted therein.

After the first to begin with / the space of three hours you must make hot fire and after that the longer the greater / and at the beginning you shall stop your wind holes / which shall be four in number above the grate or trivet against the coals. Where with you may minister or increase your fire as you lift to give it air. For it is no child's play nor game to distil strong waters, or *Aqua fortis* / wherefore you ought the better to take heed / but the most part of all the glasses break asunder whereas *Aqua fortis* is distilled in / for in the end the helm becomes as red of the great heat as only ruby or ever the spirit from him departs. And let your glass stand cooling by himself or it be taken out.

How you shall distil in common stillatory / named *Rose garlandis* or *helmets* as here is figured.

Chapter .xviii.



When you will distil much waters in a common stillatory / you shall lay sand under the pan of it four inches of thickness. There upon you shall set your pan of earth over

leaded or glazed as the potter makes / or else of copper / round about the pan you shall lay sand & bestrike[25] that above with clay / to the intent that it be not lightly with hands removed or lifted up.
Then lay therein such things as you will distil / and set the helm upon it. Then make a long small linen cloth wet in thin clay tempered as before is said / with the same cloth you shall stop your stillatory between the helmet and the pan / then set a glass before it that the pipe thereof may hang in the glass / and lute it well that no air come out of the glass / thus distil and mark through the glass how the drops fall therein / according to the same temper your fire / great or small as it behoves & when you see that it dropped no more / then it is time to break it up again / and put other herbs therein.
When you will have much water out of little herbs. Then lay the herbs three inches thick upon each other in the pan / flowers shall be laid six inches thick / & fruits two inches thick / for if it lay thicker upon each other / then is the moisture of the under-most herbs dissolved or ever it can be sublimed through the uppermost / wherefore / when I will distil costly herbs which been not easy to get / as Marjoram /Rosemary flowers / or other such like then I think not my labour lost nor tedious to lay but a little in at once / for the labour and cost is double recompensed. You shall understand that all manner of waters which be distilled in glasses be the best next onto them those which be distilled in earthen vessels and be well leaded with earthen pans under & helmets above as the potters full well can make. After tin helmets above and leaden pans under / After that leaden helmets and pans / as I have seen occupy in houses of religion at Strassbourg[26] in high Almain / whereas they made their fire with wood / but it was very small for scare of melting of their leaden pan which stood upon sifted ashes an handful high and not in sand / After that copper helmets over tin within / After that brass helmets but always the copper helmets be to fear and specially the brass helmets / for two manner of causes /the first is the water that in them is distilled commonly burns and smells of the fire / and has a red colour like wine that is dead in himself. The second cause is for the copper and brass has always a manner of a gout & palsy pending onto him more than any other metal which gives occasion that everyone should thereof beware / as *Christophorus de Honestis* testified *super antidotario Mesue*[27].

[25] *Bestrike*: to describe, draw around, to wrap.
[26] Strassbourg, birth place of Hieronymus Brunschwig, circa 1450 and dying there circa 1512. He attended the universities of Bologna, Padua and Paris to study medicine and surgery. Whilst popularly known as the author of *Liber de arte distillandi* in German, he is also attributed as author of many texts on surgery and medicine, such as *Buch der Cirurgia, Hantwirckung der Wundartzny*, 1497.
[27] Christopherus Georgis de Honestis, "*Expositio super Antidotario Mesue. Tractatus de aqua ordei et de modo faciendi ptisanam*", *51 pages (Latin).* Bologna, Henricus de Harlem and Johannes Walbeck, 15 April 1488.

How you shall distil in general each according to his nature.

Chapter .xviiii.

To all manner of people that will occupy and use the art or science of distillation it is right needful for them to know when they will distil ought what manner of way is most convenient therefore / to the intent that it loss not his strength & goodness of completion & property but that it be the better drawn & brought into the water / as far as it is possible & convenient. For it is not possible that anybody living should bring all things to purpose after his mind & will: but only God that has created Heaven & Earth / and all things that is therein. Therefore it is to be regarded that all manner of flowers and blossoms whereof is but little to get / and is very scarce / it most convenient to be distilled in *Alembic* or *Alembicum* of glass in *balneo Marie* / and in none other vessel.

Also your flowers or blossoms that you will distil / must be plucked when they be fully ripe / but yet or they fall / or fade her colour or then they marred and decreased / and shall be laid soft and light in the glass / as I rehearse to you before in the .xiii. chapter in *balneo Marie* / or in the .xiiii. chapter in *ventre equino* / And when that water is clean distilled / it is rectified afterward in the Sun / as to you more plainly shall be shown here after in the .xxi. chapter. But when you will have the water more stronger and better / then you must take the flowers that the water is distilled of / and put them in a glass named *circulatorium* as before is shown in the .xi. chapter. And cast upon them the same water distilled of the same and self flowers. Then stop the glass again surely and set it in pure horse dung a fourteen days & nights or more or in *balneo Marie* two or three days and nights and let it so digest in himself / then put it again in the first glass/ and distil it once again in *balneo Marie* / and the oftener that you so do the purer and more nobler and excellenter it will be in strength and virtue.

If you will distil herbs they shall be gathered in season convenient or the leaves fade or change their natural colour. Also they shall not be gathered when they be wet with rain / but when they be dry in fair weather and clear as *Hippocrates* and *Avicenna* testifies.

In the third part of this book[28] I will show to you the time and season when all the herbs shall be distilled that in this book shall be specified. You shall strip the herbs and leaves from their steles[29] and stalks / and chop them small / and then you shall chop the steles and stalks by themselves also / & then you shall put them again together with their herbs or leaves / and you shall put it then in a glass or helmet / and so distil it in *ventre equino* / or in *cineris* / when it is so distilled through helmet or glass / then it shall be rectified as I shall show you here after in the .xxi. chapter. You shall understand that to distil herbs or flowers willing thereof to have the scent and odour of the herbs or flowers that it is distilled of. The distillation thereof shall be ordered in

[28] Not included in this pamphlet.
[29] Central stem of the plant.

two or three manners of ways. The first ordered and distilled in *ventre equino* / or in *balneo Marie* / so that the water be no hotter but that you may suffer your finger therein. Another manner / pour the water already distilled upon the said herbs again / or else putrefy or it be distilled as before is shown you of the flowers in this present chapter / the herbs and the steles may commonly suffer stronger fire than the flowers wherefore they may be distilled in *ventre equino* / which is half a degree hotter than in *balneo Marie* / and ashes more hotter & the sand highest.

When you will distil any roots they must be gathered in the Houndes days / or in *diebus canicularibus* / that is in the Canicular[30] days when the leaves begin to fall the roots must be washed clean / and the water dried off again / and so chopped small and broken then put in a pan / or in a glass / and so distil it through an helm or glass / as before is rehearsed. The fourth manner when you will distil any superfluities of fowls or beasts / as eggs / blood / liver / lung / cow turd / or any such that is thick of substance / you shall chop them small and distil them in *ventre equino* and not well stopped for else the water becomes stinking / but if it do become stinking / you shall it distil again in *balneo Marie* / for cow turd water of the first distillation is seldom without stench / but milk or honey / may be stopped and at the first time well distilled. The fifth, who so desires to distil water of flesh / he shall kill it be it beast or fowl / or else worowe it that no blood pursue from him / after that and if it have any fat or grease take it away. Then take the flesh & chop it small & distil it in *ventre equino* with soft fire / to the intent that the water do not stink or smell of the fire / for suddenly thereof comes a great stench / wherefore all such waters may be twice distilled for therewith it is greatly amended.

Also when you will distil any fruits as plums / pears / apples / stone / medlers[31] / nuts and such like. They shall be gathered when they be fully ripe / or ever they fall & wax soft / and they shall be chopped small and stamped. Then shall it be stilled in an helmet in the sand with so soft fire that it do not burn / and then it shall be rectified as I shall show to you in the next chapter following. Item you shall understand that all manner of herbs / flowers / fruits / or roots / that you will distil most conveniently ought to be gathered in the cressing of the Moon / when it is fair weather / according as the time requires[32] / then they shall be fair washed and well picked from all uncleanness / and then shall they laid a drying a whole day / and then it shall be chopped and distilled as before is specified.

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[30] Hot period of summer. In the Northern Hemisphere are July to September. In a woodcut from the 1528 edition of *Liber de arte Distillandi*, a Ram is placed in the sky to represent the astrological period of Aries, 20 March to 19 April. This symbolism is commonly used, such as in *Mutus liber*, Altus, 1677. Images of Taurus, the Bull, referenced the time period of 20 April to 20 May, a time of important dew harvesting.

[31] Small apple relative to pear. See '*A proper new booke of cokery*', 1545.

[32] Either a reference to astrological timing which is popular in gathering plants according to the plants planetary rulers, or as a convenience of weather considerations.

How you shall distil & make waters of dry herbs / flowers / and roots / when the green cannot be gotten.

Chapter .xx.

It fortunes sometimes that you have no distilled water / nor none can get in no place when you behove it through forgetfulness of the time that is past when they should be distilled / or else through great heat and drought by which the herbs and flowers be bent and withered or through great rain or superfluity of wetness / through which the herbs and flowers be marred and rotten / and also the water thereof distilled shall have little strength or none.

Therefore it is necessary to you for to know how you shall distil waters of dry herbs / flowers / or roots / such as you shall behove / how be it / it were more profitable and better of the green herbs if it were possible to get them. But if it fortuned that you should distil the dry herbs &c. you shall every year in the month of May before the Sun rising when it is fair weather / and has not rained by night / you shall take a fair white linen cloth spread abroad / & trailed or drawn over the grass in a fair lease or garden whereas many fair herbs and flowers stand growing / the same lease or garden whereas you do this in / ought not to stand on a Moorish or watery ground / nor in deep valleys / but upon high grounds as high as it is possible / and then shall this cloth be wrung out in a glass / and then do so again as often till you have enough this dew must be thrice distilled in *balneo Marie* / and rectified as it here after shall be declared in the next chapter following and so keep that water from year to year / then if you lift to distil within the year any dry herbs / then take such herbs as is dried in the shadow as much as you will having his natural scent and odour / and cast upon it three times of the forenamed water of dew so much that at every time the herbs be covered then put it in a glass and stop it well / and so put it in a glass and stop it well / and so put it in horse dung two or three days and nights. After that distil it in *balneo Marie* three times stepped / and at every time again distilled / but *Albucasis* writes in *Liber Servitoris* that upon every pound of dry flowers or herbs shall be poured ten pound of common water and so distilled in an helmet / which is not so good as the water before said / For I have read of an old expert philosopher a doctor in medicine / that would that the May dew should be nine times distilled in *balneo Marie* & that the herbs be gathered in the summer in a dew season / & they shall be clean picked & the leaves stripped from the stalks or steles / & laid in a shadowy place on drying so that they may keep their flavour.

Take as much of these herbs as you will and cast therein three times as much as the forenamed May dew / four times distilled distil that three times over / as before is specified / and that water is better than the water distilled of green herbs / because that only the flegma of the green herbs is distilled. And said that the May dew that has been nine times distilled draws the might and strength towards him likewise as *Aqua*

vite / or other distilled wine does. Therefore it were good that every water should be cast upon his own faeces / that is upon his own herbs where as it had been stilled off / and is putrefied and again distilled / but yet it wax much better / that you shall pour that water off such like herbs before dried and that so distilled. And then as I have written before it to be putrefied in a *circulatorium* / or in a blind helmet / named in Latin *Alembicus cecus* / which is before figured in the .xi. chapter / and so distilled / it gets great goodness and strength.

How you shall rectify your waters after they have been distilled.

Chapter .xxi.

Now after the distilling of the waters it is needful that they be rectified / to the intent that the fire be drawn out of them / and the flegmatic nature and complexion be temperated / And also that they may the longer continue without marring / which is often done through the heat of the Sun / when the waters be put in a glass. Then two parts thereof filled and well stopped with lead and that well surely bound / the third part of the glass shall be set in fine sand and so in the Sun the space of six weeks in the Canicular days / or after as the weather is temperate / for the same becomes very hot for to rectify the waters from the superfluities of their moistures / likewise the waters of fiery water that be distilled of spices & first steeped in *Aqua vite* a certain while / their superfluities of cholera is needful to be tempered of the first complexion. For through the great heat and drought / the complexion of man is often marred and destroyed / be pending thereto of some manner of drops such like waters be rectified thus.

The glass shall be fast stopped as before is said and the two parts thereof shall be set in wet or moist sand in a cellar the space of a month or more / or less as the water requires. Or else dig a hole in the ground of a moist cellar / and set it more than the two parts therein / and so let it stand as before said / for there within the fiery complexion is expressly diminished. Also it fortunes often times when two manner of waters be mixed together / that they become troublous in continent and white like milk / as when you put old waters in to new / therefore you shall mix in two or three pound of waters six or eight drops of good white wine vinegar / then the troublesome of the waters draws to the bottom and becomes fair and clear.

How and where the distilled waters ought to be kept.

Chapter .xxii.

It is necessary and profitable to know how and in what manner the waters shall be kept to the intent that they may the longer abide in their goodness / and be preserved from their hindrances. First when the distilled waters be better distilled as before is specified / then it is needful for you to have stone pots with small necks or pure phials

with small mouths well washed / specifically with the powder of the herb named *Parietaria*[33] well mixed with the wax of it or ashes of the herb & so cleansed as if they were new / those vessels always well stopped with a wooden *stoppel* or else *stoppels* made of the two parts of wax / one part of turpentine / and fine powder of tile stones of each one part and a half / all those mixed together and molten on the fire but they may not seethe / and when it is cold make thereof their *stoppels* / and above that you shall bind lead very soft and close / to the intent that the water keep his nature and strength / then you shall write about the vessel the name of your water / and the time of his distillation. Then shall your vessel be it pot or glass be set in a cellar / to the intent that it do not freeze / for when any distilled waters been frozen they lose their might / strength / and changes nature / so that you must pour them out or cast them away. Also when any water is set in a hot stew in the winter it becomes red / and his power and strength is diminished / thereof it shall be set in a convenient place that is neither too hot / too cold / nor too moist / to the intent that it abide the longer in virtue & strength without hindrance or perishing.

Here after follows how long you may keep your distilled waters and when they must be poured or cast away.

Chapter .xxiii.

When the waters be distilled / rectified / stopped and kept in a convenient to know and understand how long those waters may continue in goodness / and when you shall cast them away / how be it that the book of *Nicolao de Aromatibus* shows that commonly every water ought to be renewed once in a year wherewith he means that they can abide but one year in their goodness / which cannot be true / for it may not be nor is not of necessity for these causes following. **First** that the herbs / flowers / roots / or fruits been not yearly to be distilled / as I have shown to you in the .ix. chapter before / & in the beginning of the .xxi. chapter. The **second** when they be well rectified in the Sun. The **third** when they be well stopped and kept in a convenient place. The **fourth** when they be every year once set in the Sun the space of forty days or more. The **fifth** it need require every year once you shall strain your water through a woollen sack that so the faeces be divided from the pure water. The **sixth** that the water be renewed forward the end of the year / as I shall show you more expressly. The **seventh**, the waters that be distilled continue longer than the waters that be burned / for the clear and subtle parts be divided from the gross superfluities for the difference between distilled waters and burned waters is this / the one is ordered with fire / and the other in other manners. The **eighth**, all manner of waters that be distilled of dry and hot herbs continue longer than the waters that be distilled of cold / moist / or slimy herbs or roots. The **ninth**, some waters being a year

[33] *Parietaria officinalis*, Pellitory-of-the-wall, lichwort, member of nettle family.

old or above / do alter or change their complexion with diminishing of their venomous cold or heat.

Therefore in brief sentence I shall show to you how long the distilled waters may be kept as near as God thereto will give me grace / for it is right difficult for any Earthly creature to have thereof understanding / wherefore I call to God for help / for the perfect knowledge thereof is only in Him / and in none other without Him / wherefore it is very necessary to you for to write the time of their burnings or distillations.

How long the waters may be kept in substance.

Chapter .xxiiii.

First every manner of water is to be kept a year / when it is burned / distilled / and kept as before is shown. But when the waters been not close & truly stopped / then shall they be cast out before the year / likewise all manner of water distilled of beasts / of fowls or other worms that breath life may scantly continue a year. Secondarily all manner of water distilled of flowers / as Mallow flowers / Borage flowers or blue flowers deluce[34] as pictured above / Bean flowers / Blue Violets / May flowers named *Lilium convallium* in Latin / White Lily flowers water when they be diligently kept as before is specified they continue from the one year to the other / if that they in the second year be rectified in the Sun or distilled *per filtrum* or poured through the woollen sack as I have shown you before / they abode good until the end of the second year but then they shall be cast out.

Red Rose water endures until the end of the third year if it be well kept / and every year rectified / but in the third year it is more comfortative than cooling or styptic / White Rose water may endure two year if it be well kept and rectified / Wild Rose water endures two year in great operation and virtue for to cool if it be well kept but in

[34] Blue Iris or Lily.

the third year this cooling is far diminished / and is good for comfortatives. Wherefore it is not to be kept over the third year and it must be every year rectified as before is specified. Also the water of Nenufar[35] a flower which is growing in the rivers having a great round green leaf / which flowers be sometime yellow / sometime white / and when the flowers fall the seed of them is closed in a round bottom like a small gourd / or an urinal / may endure in his cold operation to the fourth year / the first year to be laid without upon the diseases / for it is half poison or venom through his great coldness or stupefactive / the second year it may be used within the body for to cool. In the third year his cooling is temperate / and in the end of the third year it shall be cast out / out it must be well kept and rectified as before is specified. Of the same nature be Red Roses growing in the Corn / & so is Poppy flower water.

Secondarily all flowers water of hot herbs / as Camomile flowers / Centaury flowers / Archangel flowers / Dill flowers / yellow Violets / wild Tansy flowers / Lavender flowers / Rosemary flowers / Marjoram flowers / Sage flowers / Saint John's Wort flowers / all these waters may be kept until the end of the third year / if they be duly tended & rectified as before is specified / but the waters that is not so hot in their operation / they may be kept until the end of the second year as wild Periwinkle flowers / Quince flowers / flowers Lime / Peach flowers / Slone flowers / white Lily flowers / all these waters shall be cast out in the end of the second year.

Of the water of leaves.

The third / all such waters that be distilled of leaves of trees / as of Birch leaves / wild Periwinkle leaves / Balm leaves / Oak leaves as picture above / Ivy leaves / Ash leaves / leaves of Alder / Vine leaves / leaves of Spindle tree / leaves of Tamarisk / Savine leaves / & every water of leaves may be kept until the beginning of the third year / if they be truly distilled rectified / and well stopped & set in a place convenient.

[35] *Nenufar*. Water Lily (Spanish)

Water of fruits or berries.

The fourth all manner of waters distilled / as of Holly berries in Latin *Viscus* / Wild Bramble berries / green beans / beans of Shale / Great Plantain seed / Strawberries / Plums or Damsons / Gourdes / Black and Red Cherries / Duck's meet named *Lenticular aque vel lentigo* in Latin / green Walnut shells / Chatterelles that some men call Toad Stools / Wild or Tame Apples / Wild Pears. And commonly all manner of waters distilled of fruits may be kept a year or more if they be well ordered as before is said.

Water of common heat.

The fifth of the herbs that be not too hot nor too moist / nor very hot nor very dry / as Sorrel water[36] / Endive water / Bean stele water / Borage water / Cress water / water of Prunella / water of *herba Hircina* / water of Arthemesia / water of Ruda or Rubea / water of *Centum morbia* / water of *Scatum celle* or Pennywort / water of Red Clover / water of Celery / water of Cuckoo-pint or Aaron / water of Heartsease or *herba Cavellata* / water of Our Lady Thistle / water of Five Leaf grass / Fennel water / water of herb Robert or *herba Roberti* in Latin / Yarrow water / water of Ground Ivy / water of Fumitory / water of May Weed / Liverwort water / Chervil / water of Chard / Lovage water or *Levisticum* in Latin / water of *Cauda equina* / water of Lettuce / Liverwort water / water of May Dew / Nightshade water / Parsley water / Parsnip water / water of Dandelion / Dandelion stalk water / Tansy water / water of *herba Paralisis* / water of Saxifrage / water of Scabious / Celandine water / water of *Centum nodia* / water of Marigolds. These waters endure in virtue and strength from the beginning of the first year to the end of the second year / when they be kept as before is specified.

Of cooling waters.

The sixth of waters of herbs / being very cold / as Mandrake as pictured below/ Henquale / Purslane / House Leek / Duck weed / Small Stonecrop / Hemlock or *Vellicuta* in Latin. These waters and such like may be kept from the first year to the end of the third year / if they be ordered in all things as before is specified but for the outward parts they been in their cold operation of great virtue and strength / for in the first year they be so cold & stupefied that they take away the feeling of man / in the second year they be merely temperate if their cooling therefore they shall not in the first and second year be used within the body alone / but only to be laid without.

[36] Spelling and naming of the herbs in this text has been employed to maintain a usefulness of the text. Some old common names and old Latin has been changed in the process reinforcing the great benefit that Linnaeus implemented in the classification and identification of plants. Every effort has been made to correctly recognize and modernize the plant lists.

 [37]

Of the hot and dry herbs of nature.

The seventh / the waters of herbs that be hot and dry of nature / as Horehound or *Marrubium* in Latin / Scabwort or *Elecampane* in Latin / Horsemint or *Mentha sylvatris* in Latin / Common Agrimony / Basil / *Cardo benedicta* / Centory / Camomile / Archangel / Dill / burning Nettles / *herba Veronica* / Germander / *Tanacetum vulgare* or Tansy / hops / Hart's tongue / Myrrh / Verbena / Hyssop / Lavender / Marjoram / Mentha / Opium / Melissa / Salvia or Sage / *Aristolochia longa* or Birthwort / Wild Thyme or Our Lady Bedstraw / Wild Truffle / Ruta or Rue / Saint John's Wort / Rosemary / Sapenaria Daisy or Comfrey as pictured above / Pyrolas / water of those herbs and such like may be kept to the end of the third year. When they be ordered and kept as before plainly is shown.

Of water of moist nature.

The eighth waters of roots which be gross / moist and slimy of nature / as Borage roots / Parsnips roots / roots of *Cardo benedictas* / Fennel roots / Parsley roots / roots of Hermodactylus / Radish / Rapes / Walwort roots / roots of White Lilies / roots of *Sigillum solomonis* / the waters these roots & such like may be kept from the one year until the other / when it is ordered as before is specified.

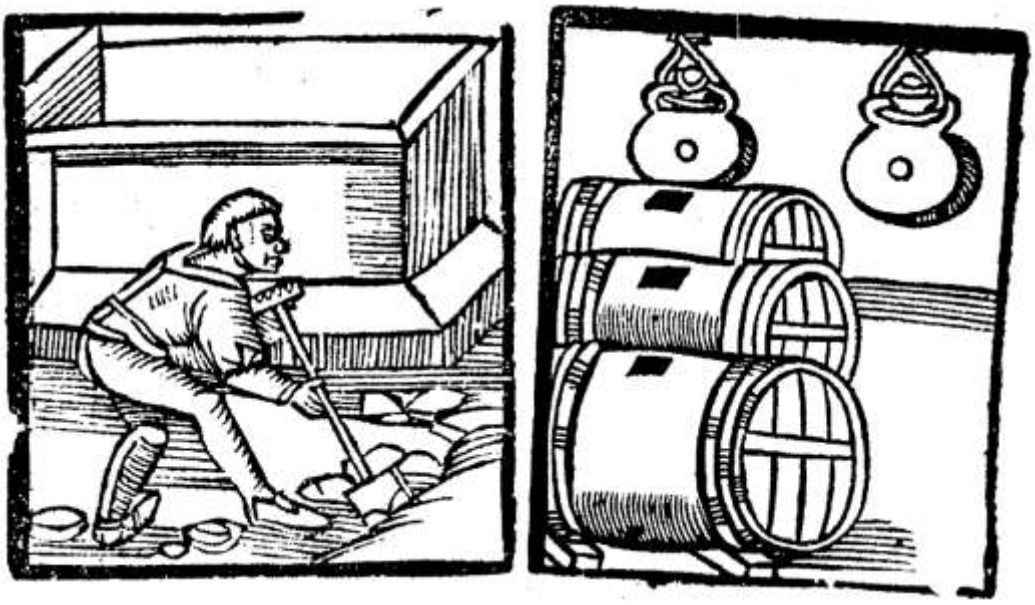
Of roots waters that be hot of nature.

The waters distilled of roots of hot and dry nature be as roots of Elecapane / roots of Angelica / roots of Pimpinello / roots of Blue flowering Iris / roots of Valerian / roots of Nettles / roots of yellow Lilies / roots of Asparagus / roots of *Asara alba* / or *Assa dulcis* / or such like / they may be kept from the beginning of the first year until the end of the second year / if they be duly rendered as before is rehearsed.

[37] Additional woodcuts have been added to this text. They have been obtained from the 'Large Book' of *Liber de arte distillandi* which included a considerable volume of herbal information. It is the first English printed herbal text.

Of all such waters that be distilled / of beasts / fowls / vermin or worms.

The ten such waters as water of Pied Ducks / Geese blood / Billy Goat blood / blood of an Ass / Yolk of Eggs / White of Eggs / Ants or Pismire Eggs / Frogs / Hens / Hen's crops / Capon[38] / Cow Cream / Cow dung as pictured below/ Calves blood / Flies / Mantis dung /Ox blood / Swine's blood / Storks / Snails. These waters & such like may be kept / from the one year to the other year / if it be ordered and kept as before is said / but that may not be failed. Honey water may be kept five or six years if it be every year once rectified in the Sun.



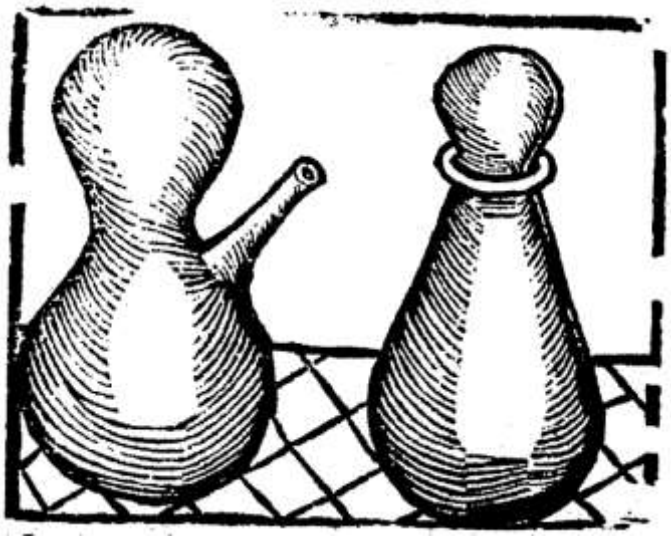
Now will I write to you with brief sentence of all manner of waters in general / as of herbs / roots / flowers / fruits / & leaves / & other things before rehearsed. Therefore you shall understand that all manner of herbs that be cold or moist / or slimy / or fat thick substance may endure from the one year to the other / except these that be cold in the fourth degree they may be kept longer as I shall show more plainly to you in the end of this chapter / likewise all flowers that be fat / moist / and thick of substances be kept in the same manner.

Also all blossoms that be thin / subtle / dry / or hot of substance may be kept from the beginning of the one year to the end of the other year. But all waters of herbs that be hot of complexion then inclining to bitterness with dry thin subtle steles leaves & dry flowers / these may be kept from the first year / into a part of the third year.

All fat / slimy / moist roots that be of a gross cold substance may be kept from the beginning of the year almost to the end of that same year. All manner of waters of

[38] A Castrated rooster. Of interest to note was the strong influence of the translator's accent in the original printed phonetic English, such as *hete* = heat, *eche* = each, *fassion* = fashion, *seke* = sick, *weke* = weak, *helthe* = health, *bycawse* = because, *Downge* = dung, *brede* = bread, and *ege* = edge. &c.

roots that be hot / & dry / subtle / & thin of substance / may be kept from the first year in to the beginning of the third year.
All waters of beasts and such like / as before is spoken of cold and moist of nature / or gross & fat of substance / may be kept well enough from the beginning of the year until the end / but waters of blood may continue for a year full.
All waters of fruits cold / moist / and slimy of substance mixed with sourness or sweetness / may be kept from the one year into the other. But all water of hot fruits of small thin substance / inclining then onto a dry and bitter complexion / may be kept from the beginning of the one year until the end of the other.
But all manner of herbs / flowers / roots / seeds / or fruits that be dried or wet in wine and therewith distilled / rectified / close stopped / and kept in a convenient place may continue two or three times as long or longer.
When you kept year waters so long that you think that their strength will perish then you may renew them in this manner. In the next year or they perish take of every water of what nature so ever it be / the third part of as much herbs / roots / flowers or fruits / that be fresh & green / stamped steeped & worked in *balneo Marie* three or four times well stoped in a blind helmet that has no pipe or else in a glass named *circulatorum* as here is figured / or in horse dung three or four days.



After that distilled & well rectified in the Sun as I have shown to you before then may it continue his whole time as it might do at his first distillation / and this may be twice done and no more. In which I have found great virtue / But evil it is to know the fading of the waters and to know the due time when it shall be poured out & cast away / except you know the time when it was distilled.
Nevertheless I shall show you a part thereof how it may be done in five diverse manners. **First** by the smell as these waters following / Rose water / water of Mints / Melissa water / May flower / water named Lily of the Valley or *Lilium convalium* in Latin / Camomile flower water / Isope water / Lavender water / Rosemary water /

Marjoram water / Fennel water / & such like waters. If they be distilled in *balneo Marie* or with a soft coal fire & then well stopped / so they keep their scent / & when you mark expressly diminished fades or is wholly gone / then you ought to cast them out. **Secondarily** / if the herbs have not scent nor flavour that the water is distilled off / then you shall take the water and hold your phial or glass off a great height & pour out a part of that water / if it spin then like a thread / it ought not to be occupied / but cast away / for then it has no virtue. The **third** manner / you shall let a drop of your distilled water upon the nails of your thumb / if it runs not quickly off then cast it away. The **fourth** manner / when there dry faeces in the bottom of your glass like clouds & divided like flocks of snow cast it out for it is nought. The **fifth** manner is when the water is of a red colour & smells ill / then cast it out in continent / or it were able to do more harm than good.

Thus ends[39] the first book of the distillation.

Here after follows the register of the table of the second book of the herbs / & to find the waters against all manner of sickness and infirmities.
[Not included in this pamphlet]

[39] **Acknowledgements for this pamphlet**: The Restorers of Alchemical Manuscripts (RAMS) digital, The Society of Creative Anachronisms (SCA), The Order of Artisans and Kindred Spirits (OAKS), and Salamander and Sons.

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The Virtuous Book of Distillation

of the waters of all manner of herbs / with the figures of the distillatories /
first made and compiled by the three years study and labour
of the most cunning and famous master of physic / Master Hieronymus Brunschwig.
And now newly translated out of Dutch into English not only to the singular help and profit of the Surgeons / Physicians/ and Apothecaries / But also of all manner of people / Particularly and in due time and order to learn to distil all manner of Herbs / To the profit / cure / and remedy of all manner diseases and infirmities apparent and not apparent. And ye shall understand that the waters be better than the herbs / as Avicenna testifies in his fourth canon saying that all manner medicines used with their substance / feebles and makes aged / and weak.

Cum gratia et privilegio regali.