

THE HISTORY OF DISTILLATION

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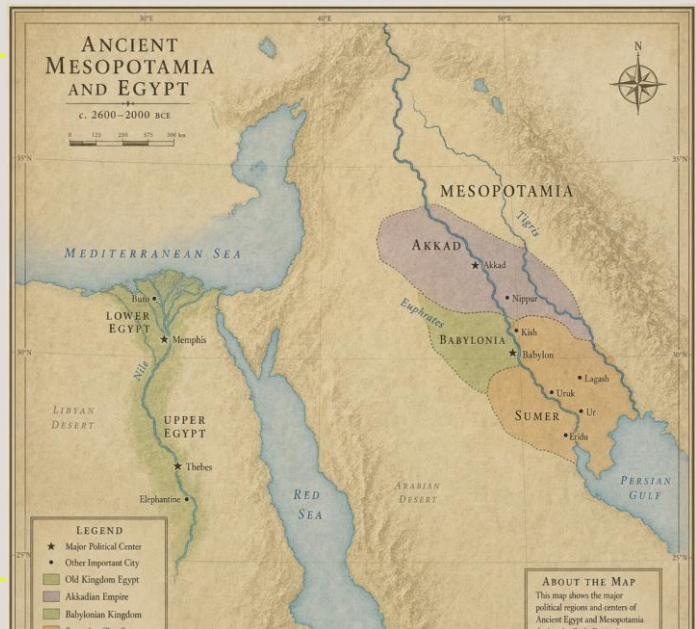
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ROAD MAP TO DISTILLATION

- ORIGINS
- REFINEMENT
- REVOLUTION
- CONTEMPORARY

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ANCIENT ORIGINS: 1200 BCE – 500 CE



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ANCIENT ORIGINS – 1200 BCE – 500 CE

- Both Babylonian and Egyptian societies used distillation, as far back as 1200 BCE
- Still and apparatuses made out of clay and other natural materials
- Used primarily to make perfumes and medicines and concentrate natural oils and aromatics
- Limited in size and volume by materials

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ANCIENT ORIGINS: 1200 BCE – 500 CE



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ANCIENT ORIGINS – 1200 BCE – 500 CE

- Greek alchemists pioneer the ambix (alembic) still around 200 CE
- Believed that various substances could be “transmuted” through science
- Began using metal (copper/bronze/gold) and glass in distillation
- Stills were very simple, comprised of only three components:
 - The cucurbit (pot)
 - The head or cap
 - The receiver/vessel
- Led to increase in production capabilities

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Medieval drawing of a still
Three components: cucurbit, cap, and vessel

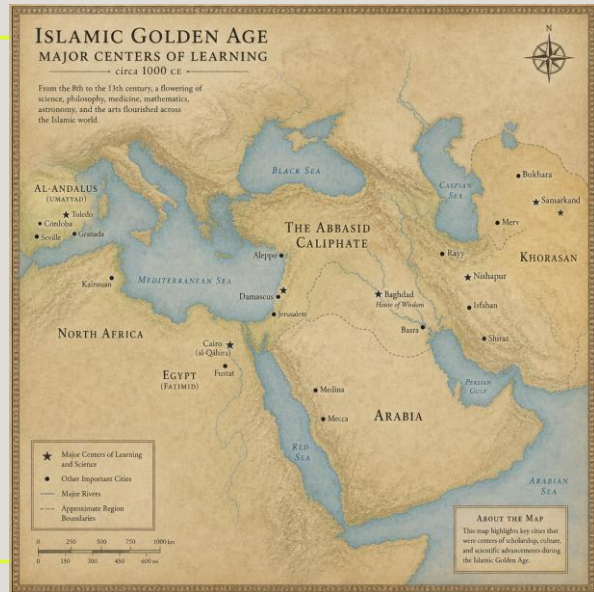
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Mary the Prophetess
1st – 3rd Century Alchemist in Greece

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ISLAMIC REFINEMENT: 700 CE – 1200 CE



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ISLAMIC REFINEMENT – 700 CE – 1200 CE

- Islamic Golden Age was a multi-century increase in scientific knowledge under the Abbasid Caliphate (third Islamic Caliphate)
- Focus on education and research, started with the founding of the “House of Wisdom” in Baghdad
- Universities and major libraries established in Cairo and Morocco
- The abjad still becomes the *al-anbīq* still, translating the Greek to Arabic

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ISLAMIC REFINEMENT – 700 CE – 1200 CE

- Introduced key improvements – copper for cucurbit and cap, water cooling for condensation, coil condensation tubes
- First recorded instance of distilling wine into a spirit
 - The poet Abu Nuwas described it as “the color of rain-water and hot inside the ribs as a burning firebrand”
- Better heat control through refined double-baths
- Increased production and volume and quality

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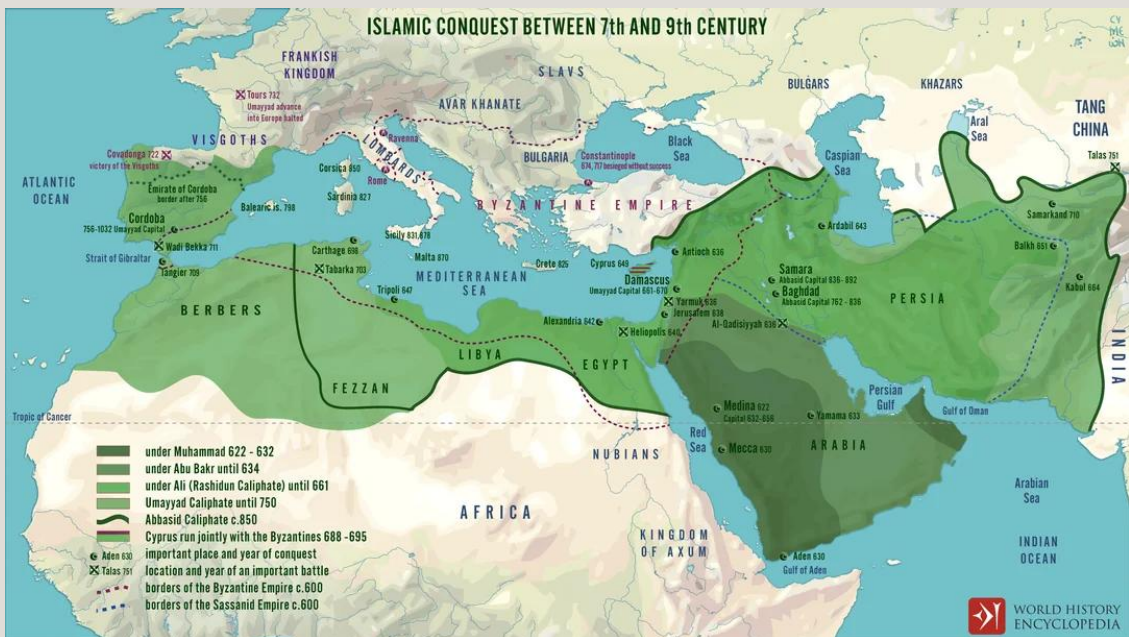
Jabir ibn Hayyan
Circa 800 CE

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Avicenna
Around 1000 CE

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EUROPEAN PRESERVATION: 1150– 1600 CE



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EUROPEAN PRESERVATION – 1150 CE – 1600 CE

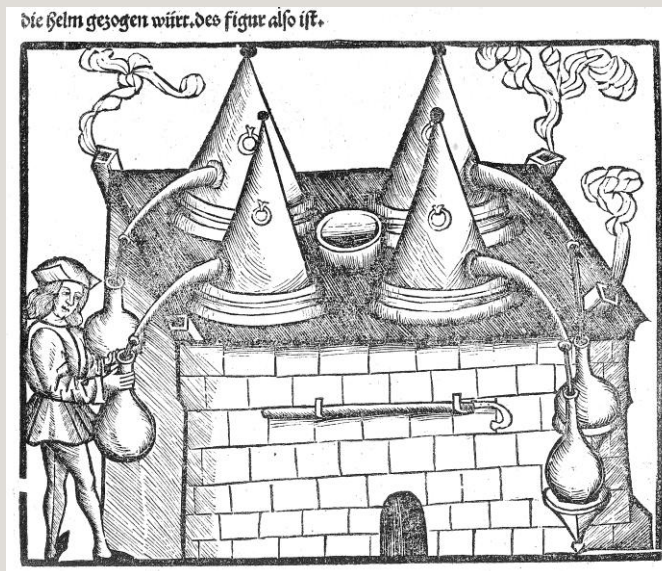
- Fermentation practices well established throughout Europe by way of Roman influence
- Distillation science and equipment introduced by the Islamic Golden Age in places like Spain, Portugal, and Italy
- Renewed interest in education and science fuels new developments and technologies
- Copper Pot Still becomes the key workhorse, as the metal is plentiful throughout Europe
- *al-anbīq* still becomes the alembic still when translated from Arabic to Latin
- Developed along guild lines, akin to brewing and other trades

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EUROPEAN PRESERVATION – 1150 CE – 1600 CE

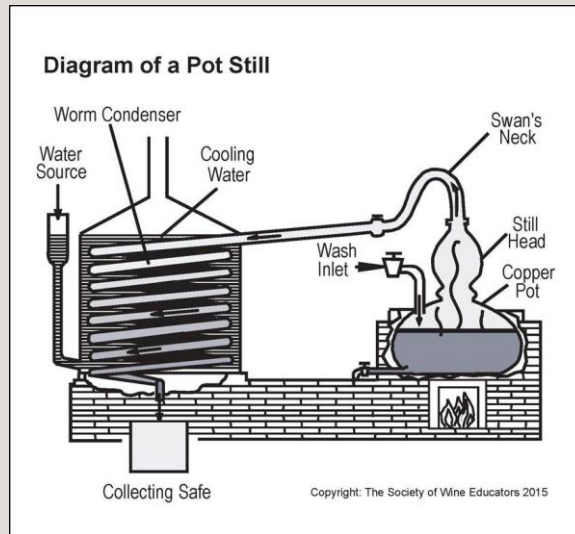
- By the time of the Renaissance key styles and spirits have been regionally developed
 - Whisky in Ireland and Scotland
 - Brandy in France
 - Grain Spirits and Fruit Brandies in Germany/Austria/Switzerland
 - Vodka in Eastern Europe
 - Grappa in Italy
- Just as the Islamic Empire spread distillation into Europe, European colonialism brings distillation to the Americas

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Commercial European Distilling
Circa 1400 CE

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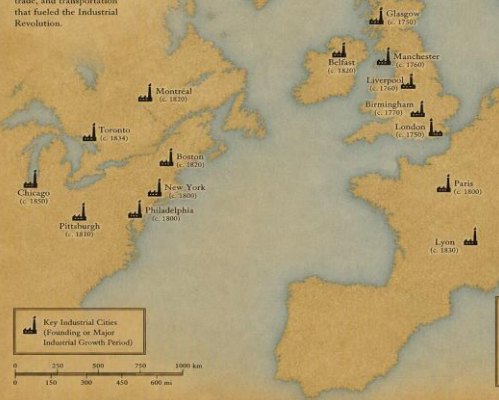
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INDUSTRIAL REVOLUTION: 1700– 1900 CE

INDUSTRIAL REVOLUTION KEY CITIES IN NORTH AMERICA & WESTERN EUROPE

c. 1750 to c. 1900

These cities were centers of industrial growth, innovation, trade, and transportation that fueled the Industrial Revolution.



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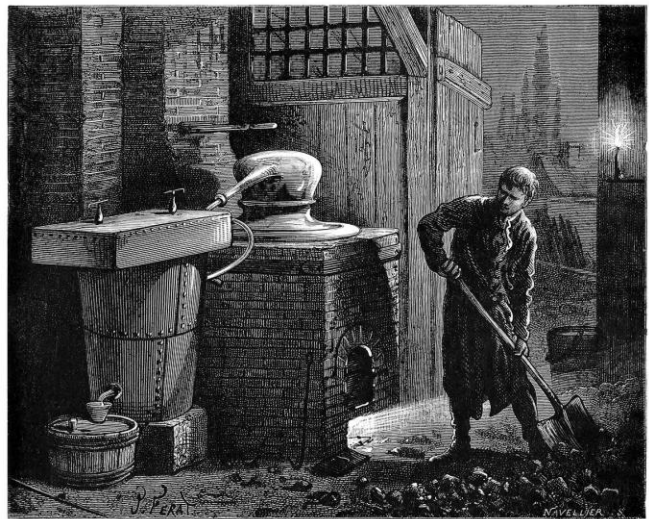
INDUSTRIAL REVOLUTION – 1700 CE – 1900 CE

- The increase in scientific knowledge and key inventions like interchangeable parts sowed the seeds for a revolution in distillation
- In France, several chemists created improvements on the alembic:
 - Adam Edward creates a still that improves rectification and alcohol yield
 - Isaac Berard creates a device to allow for partial condensation mid-distillation
 - Jean-Baptiste Cellier-Blumenthal combined those components into the first patented continuous column still in 1813

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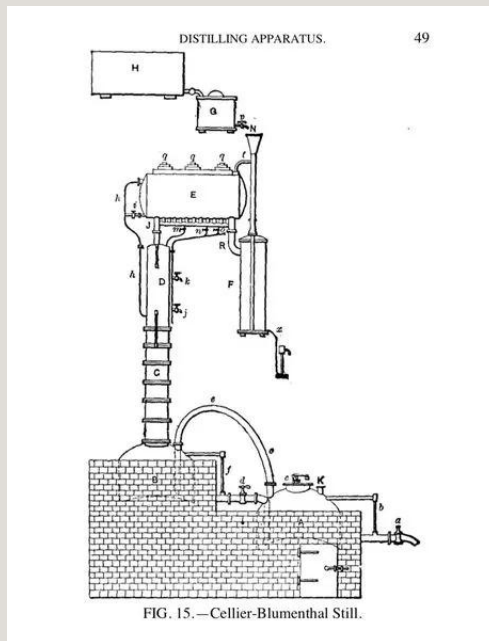


Edward Adam

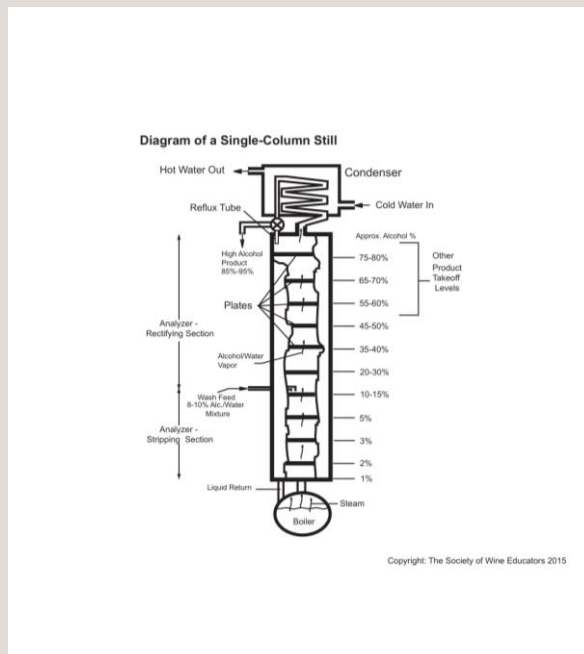


Isaac Berard

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INDUSTRIAL REVOLUTION – 1700 CE – 1900 CE

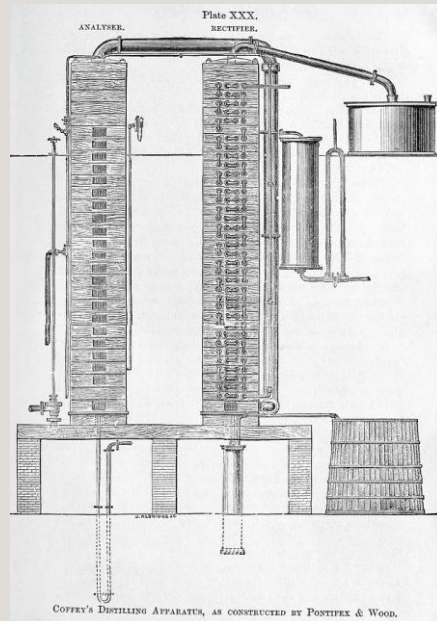
- Other developments included increased efficiency, higher production yields, higher alcohol content
- Aeneas Coffey patents the two-column continuous still, now known as the Coffey Still
- Further improvements upon stills would continue, with hundreds and hundreds of patents filed for apparatuses and devices from 1800 - 1900

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Aeneas Coffey
circa 1830s

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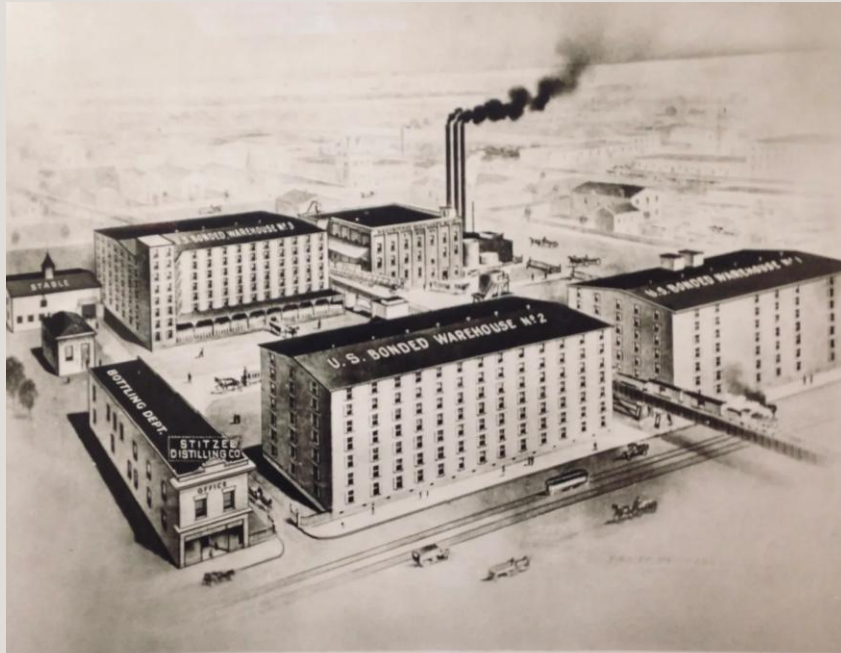


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INDUSTRIAL REVOLUTION – 1700 CE – 1900 CE

- The Coffey Still and other variants of the column still allow for a huge scaling of production
- Distilleries begin to take the shape of factories producing at an industrial capacity, compared to small distilleries built around a single copper pot still
- This led to production outputs increasing 20 to 50-fold within the span of a few generations

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Third Stitzel Distillery, Erected Louisville, Kentucky, 1902

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CONTEMPORARY
ERA:
1900 CE – TODAY



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CONTEMPORARY ERA – 1900 CE – TODAY

- Key 20th technological improvements in engineering and science found their ways into spirit production
- Advanced monitoring, computer processing provide distillers today more information about temperature, yields, efficiencies
- Increase in availability of vacuum distillation
- Availability of equipment also fueled the craft distillery era of the last 30 years

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Clonakilty Distillery Ireland

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High West Utah

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FINAL THOUGHTS

THE JOURNEY OF ALCOHOL DISTILLATION MIRRORS THE JOURNEY OF MOST WESTERN SCIENTIFIC TRADITIONS. ESTABLISHED IN THE ANCIENT WORLD, PRESERVED AND ENHANCED BY KEY CULTURES AND SCIENTISTS OVER CENTURIES, FURTHER INFLUENCED BY TECHNOLOGY OF OUR MODERN ERA

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