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"A MOST NOBLE WATER OF VERTUES:" REVISITING ENGLISH GIN'S ORIGINS AND ITS RELATIONSHIP WITH BEER[1]

ANISTATIA R. MILLER

Abstract

While the Dutch origins of hopped beer, its importation, and eventual development into English beer are well-founded in the historiography, this article offers compelling evidence that the Dutch did not play an active role in the emergence and evolution of English spirits, especially gin. The connection between German and English distillation is much stronger in translated alchemical texts. Evidence points to the fact that both sixteenth- and seventeenth-century German and English women brewed beer and distilled spirits, as seen through domestic advice manuals and national legislation. The evolution of the distilling trade is traced alongside rising consumerism as is its professionalisation in London. While the excise scheme and the Gin Craze are frequently cited as the reasons for the decline in early modern beer production, excise reports suggest the balance between beer and spirit production shifted frequently because of social reasons rather than economic or political causes. Finally, the article agrees with Peter Clark's conclusion that the Gin Craze ended and beer consumption revived thanks to the invention of new styles such as porter and stout as well as technological advancements in malting, hopping, and brewing. But spirits consumption was also revived when an evolution in styles and in still design advancements stimulate the emergence of London dry gin and other modern-day gin styles.

Introduction

Early modern English beer and spirits are cousins barely once removed from their alleged Dutch origins. Historian Richard W. Unger noted that in '1574 more than half of London's beer breweries were owned and operated by aliens' — meaning the 'Dutch'.[2] The link between the Dutch origin of hopped beer and its fifteenth-century adoption in England is documented in the historiography by not only Unger but by historian Peter Fleming, who concluded that while the city of Bristol supported a large transient migration of foreign sailors and merchants, its 'permanent, or semi-permanent population of "aliens" … was tiny' but they contributed significantly to the establishment of commercial hopped beer breweries outside of London and Southampton.[3] Conversely, the Dutch connection between the importation of Dutch spirits such as genever to English soil and the creation of distillates such as the gin produced by English distillers allegedly inspired by Dutch spirits are not as clear cut as will be seen throughout this discussion.

This article delves into four aspects of the relationship between early modern English beer and spirits, ranging from the alleged Dutch link to gin's birth as opposed to the confirmed Dutch link to English beer; the evolution of English distillation and its links with beer as a base ferment; the effect of the excise scheme and national legislative efforts on London's seventeenth- and eighteenth-century brewing and distilling trades; and the technological advancements that progressed both trades into the mid-nineteenth century. First, the article argues that despite the current historiography's conclusions, distillation techniques and gin were not imported to England from the Low Countries. Second, it contends that there were two distinctly different English spirits called gin produced in the eighteenth century — one called Geneva and the other simply called gin (which was later produced in various styles and by various names including London dry gin). Third, the article asserts that despite the conclusions in the historiography, neither beer nor gin ever experienced a significant decline in production and sales throughout the seventeenth and eighteenth centuries. Finally, it concludes that it was the combination of technological and stylistic advancements in brewing and distilling that led to a revitalisation of English beer and spirits consumption during the nineteenth century.

The longstanding series of quandaries over gin's origins initially prompted my interest in seeking out modern-day English gin's origins in 2008, when I was commissioned to research and write a history of the spirit for a major London

distillery's visitor centre. This path of study was combined with the research I conducted over the past four years for my doctoral thesis on the development of early modern beer brewing in Bristol. Thus, to build this discussion, I explore fifteenth- and sixteenth-century distillation books authored by Michael Puff von Schrick and Hieronymous Brunschwig; sixteenth- and seventeenth-century domestic advice manuals by Conrad Gessner, Hugh Plat, Gervase Markham, and Walter Montagu; seventeenth-century guild manuals by Theodore Turquet de Mayerne and Thomas Cademan; a nineteenth-century publican's guide by Patrick Boyle; and a nineteenth-century chemistry book by James Sheridan Muspratt.[4] Providing historical context throughout, I direct attention to historians R.J. Forbes, C. Anne Wilson, B. Ann Tlusty, Jessica Warner, Jon Stobart; Roy Porter, John Chartres, and Peter Clark.[5] And finally I review statistical data about the quantities of beer and spirits produced during the seventeenth- through early-nineteenth-centuries sourced from excise reports housed in The National Archives.[6]

I begin by detailing the appearance of distillation in medieval England's monasteries and household kitchens. Then I follow the impact of the fifteenth-century printing revolution and the publication of distillation manuals which prompted the rise in Germany of domestic and commercial distillation. Next, I trace the significant influence of German distillation manuals translated into English on domestic spirits production, which affected early modern English drinking culture as well as the technological advancements made in distillation equipment design. Then, I survey gin production's early -seventeenth-century commercialisation and professionalisation through the founding of two City of London monopolies — the Worshipful Company of Apothecaries and the Worshipful Company of Distillers. I follow this with a presentation of the findings from an experiment I conducted to determine the similarities between one seventeenth-century rectified spirits formula and modern-day gin. Next, I review the impact of excise legislation on spirits production — or the lack thereof — in controlling unbridled spirits consumption in English drinking culture and compare that to the scheme's impact on beer production. Finally, I discuss the significant changes to gin distillation brought on by nineteenth-century legislation and technological breakthroughs that prompted the creation of modern-day gin and the impact—or lack thereof—on English beer production and consumption which also experienced a concurrent evolutionary phase. Besides demonstrating that there were two spirits categories produced and consumed in England were called gin, I also conclude that English beer and gin were indeed closely linked throughout the early modern era.

Returning to the Dutch link between the multi-grain distillate redistilled (rectified) with juniper berries known as genever and English spirits such as gin, the current historiography is not as clear on the facts and events surrounding the spirit's origins as they are about beer. In his introduction to the Gin and Vodka Association's fiftieth-anniversary book, author Stephen Bayley remarked: 'Gin is one of those subjects that attracts myth. And like myth, stories about gin are repetitive. When you read the literature, you find that the ideas go round and round'.[7] His comment introduces my first of two arguments to the current historiography, which echoes historian Jessica Warner's conclusion that 'in the mid-seventeenth century, the Dutch invented the beverage that is now known as gin'.[8] Three storylines about this so-called gin's origins repeat this Dutch connection.

The first scenario tells of gin's late sixteenth-century arrival on English shores, which, according to historian John Burnett, was introduced in the aftermath of the 'experience of English soldiers in the Netherlands after 1570'.[9] Warner points to English physician Thomas Trotter's 1804 prohibitionist treatise which notes that:

> This vile habit, it appears, was less known in Britain three hundred years ago than it is at this time. Mr. Cambden [sic], in his Annals, under the year 1581, has made this remarkable observation: — The English, who hitherto had, of all the northern nations, shewn themselves least addicted to immoderate drinking, and been commended for their sobriety, first learned, in the these wars in the Netherlands, to swallow large quantities of intoxicating liquors; and to destroy their own health by drinking that of others.[10]

However, neither Trotter nor seventeenth-century annalist William Camden directly referred to gin consumption as the target of their aspersions. And as Warner rightly notes it is 'unclear whether contemporaries yet associated Dutch drinking habits with distilled spirits *per se*' — let alone with gin specifically.[11]

The second scenario situates gin's birth in Leyden, Netherlands. Burnett says, 'This spirit, redistilled over juniper berries, is credited to Professor Sylvius of Leyden University in the mid-sixteenth century'.[12] But an entry appearing in the 1815 edition of an American domestic economy encyclopaedia suggests a seventeenth-century origin, noting that:

> Among other things, juniper berries were tried by Sylvius, a professor of Leyden, who lived in the seventeenth century; … This liquor was accordingly first sold as a diuretic in the apothecaries' shops; but as it was drunk with avidity, it soon became an article of trade ...[13]

American medical writer for the *New Yorker* magazine Berton Roueché was not as confident about the credibility of either claim when in 1960 he hinted that, 'Exactly who was

responsible for this procrastinated revelation is unclear, but the best evidence points to Franciscus Sylvius (or Franz de la Boë)'.[14] Is there any evidence? Early modern historian Joop W. Koopmans, Associate Professor of Health Sciences Barclay W. Bakkum, and Professor André Parent tell us that Franciscus Sylvius — the Latinised name for Franciscus dele Boë — was a professor of both medicine and chemistry at the University of Leyden from 1658 until he died in 1672.[15] While Sylvius's interests in iatrochemistry — a sixteenth- and seventeenth-century theory that studied medicine and physiology using chemistry principles — hints that he possibly experimented with distillation, no surviving documentation confirms that he distilled juniper berries with a grain spirit let alone that he originated the formula. Consequently, Roueche's alleged evidence does not appear to exist. Furthermore, Parent notes that Sylvius's 'scientific experiments but also his method of prescribing medication, which involved alkaloid- or acid-containing drugs' were harshly criticised by his contemporaries.[16] His comment suggests neither academic nor commercial interest in Sylvius's experiments were forthcoming in his lifetime.

The establishment of the Lucas Bols Distillery further confounds this scenario. Burnett notes genever 'began to be manufactured on a commercial scale by Lucas Bols at Schiedam in 1575, and small quantities exported to England'.[17] However, there are three problems with his conclusion. First, the Bols Distillery did not change its name to the Lucas Bols Distillery until 1652, when Lucas took over the family business.[18] Second, the only potential evidence that the company produced genever is a purchase receipt dated 1664 for juniper berries. And third, the knowledge of distilling spirits that included juniper berries had already reached English shores by 1527 — a point I extrapolate on later in this discussion.

To muddle matters even further, the third scenario positions the accession of dual monarchs William of Orange and his wife Mary of England in 1688 and their importation of genever as the launch point for the distillation and consumption of gin and other grain distillates in England.[19] This story is frequently supported in the historiography by eighteenth-century journalist Daniel Defoe's assertion that 'strong waters' gained popularity after the first Anglo-Dutch war (1652-1654).[20] However, he did not directly attribute the monarchs' role in the introduction of genever to the royal court as the reason spirits were popular in late seventeenth-century England. Instead, Defoe noted that 'In the Dutch War, … That the Captains of the Hollanders Men of War, when they were to engage with our Ships, usually set a Hogshead of Brandy abroach, afore the mast … .' By his account, Anglo-Dutch troops were exposed to brandy — not genever nor gin — before the monarchs' arrival. Yet the role their majesties played in shifting consumer preference takes an entirely different turn which I detail later in this discussion.

This Dutch-English link to gin even finds its way into the *Oxford English Dictionary*, which declares 'Gin was originally made by Dutch distillers in the late sixteenth cent[ury]'.[21] However, the definition adds an intriguing point that: 'In the mid 18th cent. a less coarse, more subtly flavoured gin began to be produced in London (hence known as London gin).' Despite these authoritative declarations, questions are raised: When and how did the English learn to distil spirits and especially gin?

English alchemists and the seeds of distillation

The seeds of English distillation sprouted during the twelfth century from early Arabic works. That is when several English scholars journeyed to the Near East and Spain and returned with a wealth of scientific knowledge ripe for translation into Latin.[22] Quickly coming to mind are Adelard of Bath's translation of Arabic mathematical treatises into Latin; Robert of Ketton's translation of Arabic astrological tracts into Latin; and most notably Robert of Chester's translation into Latin and compilation of the works of the ninth-century Iraqi alchemist al-Kindi, Persian alchemist and physician al-Razi, and Irani alchemist Jabir ibn Hayyan or Geber. Published in 1144, Robert of Chester's *Liber de Compositione Alchimae* [Book on the Composition of Alchemy] was the first work to appear in England that included distillation theories and techniques.[23] With this translation, English scholars learned that al-Kindi searched for a digestible *al'iksir* [elixir] intended to promote overall well-being and to potentially prolong life, detailing how to extract wine's essence by employing an *al-anbîq* [alembic] — a basic distillation device — and concluded, 'so wine is distilled in wetness and it comes like rosewater in colour'.[24]

With the arrival of Franciscan friars on English shores in 1224, the foundation of monastic libraries in London, Oxford, Cambridge, York, Salisbury, Hereford, Worcester, and Newcastle is evidenced in a 'Union Catalogue' that systematically records this collection of works authored by over 80 ancient and medieval scholars.[25] The catalogue included tracts by the Uzbekistani alchemist Avicenna, who once remarked that 'the body acts as a distilling apparatus' in which the stomach serves as a cucurbit — or still pot — and the head collects the humours in the same manner as an *al-anbîq*'s conical head allows vapours to rise.[26] Access to this knowledge intensified the curiosity of the Somerset-born, Oxford-educated Franciscan friar Roger Bacon.[27] Lecturing at Oxford until 1237, Bacon took a post at the University of

Paris. There, his colleagues included the German Dominican friar Albertus Magnus, who also expressed an interest in distillation, noting that 'the alchemist requires two or three rooms exclusively devoted to sublimations, solutions and distillations'.[28] Bacon entered the Franciscan order in 1256 and continued his research in France while awaiting funding for his return home. After he re-established himself at Oxford, he published his *Opus Majus* [Major Work] in 1267, presenting his observations of mathematics, optics, astronomy, and alchemy.[29] He recounted in his notes that he purchased 'secret books' for about twenty years, possibly including 'compilations of recipes, formulas. and "experiments"'.[30] There are no surviving records to confirm the contents of Bacon's collection, but historian Bruce T. Moran surmised that through his research of these works, Bacon sought 'a super-medicine, an elixir or *aqua vitae* that could purify physical bodies of their impurities, rid the human body of disease, and prolong life'.[31] To achieve this aim, Bacon strove to 'reduce substances to their simple essence'.[32] While infusion was the most common extraction method at the time, it yielded a less potent, tea-like result. Bacon concurred with Avicenna's theory that fermenting medicines improved their potency: By distilling the ferments, he concluded that all 'healing oils [or essences] ought to be prepared by alchemical means through distillation'.[33]

Interest in distillation spread to Ireland by the fourteenth century. In *Liber Ruber* [Red Book] — a series of pre-1360s documents compiled by Bishop Richard Ledrede of Ossory, Ireland — Folio 64 is of interest, containing a 'Tract on different kinds of waters'.[34] Divided into twelve chapters, one recipe titled 'De aqua rubicunda' [Of the Red Water] for making a red wine distillate is ascribed to Roger Bacon's colleague at the University of Paris, Albertus Magnus.[35]

Evidence shows that by the late fifteenth century, Scottish Bénédictine monks also distilled spirits. An entry in the 1494 Scottish Exchequer Roll notes: 'The delivery was made by Brother John Cor, by order of accounts controller, he says, by order of the king to make aquavitæ within this account, 8 boles of malt'.[36] This document shows that James IV of Scotland requested Bénédictine monk John Corr — who was in the king's service — to produce a malted-barley spirit distilled called *aqua vitæ* for his majesty's consumption. (While current marketing materials distributed by the Lindores Abbey suggest Corr was a Bénédictine monk of the Order of Tiron, which relocated in 1190 from France to the Lindores Abbey in Scotland, there is no primary source that substantiates this claim.) Historian Constance Anne Wilson proffers a caveat that 'Scottish alcoholic spirits were always named as *aqua vitæ* in documents until the eighteenth century and beyond' and thus were not related to the *aqua vitæ* produced by the English and Irish which did include botanicals — a point I discuss later.[37]

The German roots of English distillation

While the most notable reports of medieval European distillation centre around works by twelfth-century Italian physicians Salernus and Barthelomaeus of Salerno, the links between early English and European distillation point to German origins.[38] As I mentioned earlier, Roger Bacon's and Albertus Magnus's shared interests spread, respectively, from England to the rest of the British Isles and from Germany to throughout northern Europe. Historians B. Anne Tlusty and R.J. Forbes tell us that in Germany spirits distillation 'began as a home industry, unlike in France and Italy, where it seems to have been practised primarily in monasteries.' Tlusty adds to this notion that distilling was 'originally associated with alchemists and then with the "old women" (*alte Weiber*) or "waterburners" (*Wasserbrennerinnen*)' who employed the technique as 'part of their herbal cures'.[40]

Johannes Gutenberg's invention of the printing press during the 1430s led to an information revolution which contributed to the wide dispersal of distillation knowledge.[41] Historian Elizabeth L. Eisenstein noted that 'practical guidebooks and manuals also became more abundant, making it easier to lay plans for getting ahead in the world ...'[42] And learning new techniques such as distillation offered practitioners fresh ways to preserve essential ingredients for future use. Viennese physician Michael Puff von Schrick's 1455 treatise *Von allen geprenten wassern* [From all waters printed] documented 82 herbal distillate recipes including a formula for *wachalter-peer wasser* or *wacholderbeerwasser* [juniper berry water] — a brandy distilled with juniper berries that was an early bestseller.[43] Printed in 1476, Puff von Schrick's book was the first mass-produced volume to contribute to spreading spirits consumption beyond their use as a 'panacea for a multitude of medical complaints'. By 1500, it was reprinted 38 times.[44] This best-selling work and the lucrative profits reaped by the growing number of German commercial brandy distillers triggered the manufacture of *cramatbeerwasser* — a cheaper spirit distilled from beer and juniper berries — by 'poor widows, economically disadvantaged craftsmen, and poorer craftsmen's wives, who could not afford to distil wine'.[45] This is one of the first documented associations of beer being used as a fermented grain base for the distillation of a spirit. From this launch point, the link between English and German distillation was solidified with the publication of the second German distillation book.

German surgeon and botanist Hieronymous Brunschwig's book *Libre de arte distillandi* [Learn about the art of distil-

ling] was more widely distributed outside of Germany after it was published in 1500 than von Schrick's more than three dozen editions. The volume was translated and published first in Brussels in 1517, then in London by Laurens Andrewe on 18 April 1527 under the title *The vertuose boke of distyollacyon of the waters*, and finally in Czechoslovakia in 1559.[46] The book features a recipe for a 'Water of Geniper berries', used for treating 'the gravell in the lymmes and in the bladder'.[47] Puff von Schrick's and Brunschwig's works predate the Low Countries treatise most frequently mentioned in English gin's historiography — *Een constelijck distileerboec* [A constellation distillery]. Written in 1552 by Belgian surgeon Philippis Hermanni, this book featured a *Geneverbessen* [Juniper berries] distillate.[48] However, Hermanni's work was not translated into English. Therefore, it would not have been as easily accessed or adopted by English domestic distillers.

As I mentioned in the introduction, the Dutch-English links to spirits distilled with juniper berries appear frequently in the current historiography. A claim made by Genever Museum Director Eric van Schoonenberghe in 1996 suggests that an unpublished formula written in Middle Dutch predates Hermanni's 1552 recipe.[49] The tract titled *Gebrande wyn te maken* [How to make brandy] is promoted by modern-day gin producer Maison Villevert as a missing link in the story, claiming it was written in 1495.[50] The recipe von Schoonenberghe identified was included in what he called a compilation of medical and scientific formulas acquired by Sir Hans Sloane, who bequeathed the manuscripts upon his death, in 1753, to the newly founded British Museum.[51] However, the British Library's online catalogue entry for the Sloane MS345 compendium initiates an immediate misinterpretation. The entry dates the compilation to circa 1500 and states the formula in question is part of a:

> Collection of culinary recipes in Middle Dutch with the Latin heading '*Incip[i]unt quedam dicta de diuersis confectis et sirupis et alijs materijs*' (639-668), including recipes for gin (or brandy) with the heading, 'Gebrande wyn te maken' the marginal rubric 'aqua vitae' (ff. 51r-v).[52]

Belgian historian Willy L. Braekman's translation of this 145-page volume reveals that recipe No. 666 describes the making of 'one pot of brandy' distilled from 13 quarts of a mixture of ten quarts wine diluted with three quarts of beer.[53] The instructions offer the option of adding a handful of either sage leaves or a curious ingredient called *gorsbeyn of dameren* wrapped in a cloth bag and redistilled with the brandy.[54] (Van Schooneneberghe notes that 'Gors is probably a corruption of the spelling of the words ghurst, gurst, or guist which in several Middle Dutch texts are synonymous with juniper and beyn can be read as beyen or berries'.[55] But, neither Braekman nor other linguistic scholars corroborate this claim. And there is another European evergreen shrub that bears a similar type of cone and needle-like leaves as juniper does called common gorse.) Similarly, recipe No. 667 makes *aqua vitæ* by distilling wine with nutmeg, ginger, galangal, grains of paradise, clove, cinnamon, and cardamom, then redistilling the spirit with crushed nutmeg, dried sage leaves, and cloves.[56] Neither formula is a method for making brandy nor gin as stated in the library's catalogue entry. Although these recipes could be loosely interpreted as early templates for spirits redistilled with botanicals, the library's dating of the compilation to circa 1500 raises a question about the alleged ages of these two recipes. This particular Sloane compendium contains tracts ranging in date from as early as a 1260 copy of Arnaud de Villeneuve's Tractatulus de vinis artificiatis [A Treatise on Manufactured Wines] (ff. 20r-21r) and as late as a 1506 treatise titled *De diversis coloribus, picturis et tincturis* [About Different Colours, Paints, and Dyes] (ff. 34v-115v).[57] This makes van Schoonenberghe's claim to a 1495 origin to these recipes questionable until the dates of the entire compendium's contents are verified forensically. Finally, its relevance to the gin family tree is also doubtful since the 1476 printed recipe for a spirituous juniper-berry water by Puff von Schrick predates this finding by about two decades.

It is important to reiterate here that my focus on alleged German or Dutch origins is not intended to marginalise the significance of the medieval juniper berry distillates developed and published by Italian alchemist Alexius Ruscello Pedemontanus in his 1555 book *De' secreti del reuerendo donno Alessio Piemontese* [Secrets of the Reverend Don Alessio Piedmonte] and Polish physician Stefan Falimirz's 1534 volume *O ziolach y o moczy gich* [About herbs and urine].[58] But there is no evidence of a direct connection between these alchemical works and English distillation. Use of juniper berries in a wide variety of medical applications is found throughout medieval and early modern England and Europe, such as:

> … resisting the Plague and venomous Beasts, opens the Urinary Passage and Stomach, curing shortness of Breath, Drops, Consumption, Convulsion, Pain in the Belly and Side, Rupture, gives speedy Delivery [to women in labour], strengthens the Memory, clears the Sight, comforts the Brain, cureth Gout, Scurvy, Leprosy, Scab, Itch, and Piles; all this, and more, it performs by taking the Berries powder'd in Wine.[59]

So, it stands to reason medicinal and culinary recipes containing juniper berries flourished wherever juniper trees grew, especially in an era punctuated by recurring pandemics of the plague. But this discussion focuses solely on the origin of an English juniper berry spirit and its relevance to

English gin's development. Thus, this early stepping stone from commercially printed German distillation books and their English translations allows us to now look at their importance to the emergence of distilling as it was practised in English homes.

Distillation in the English home and in the royal court

Limited resources hampered the treatment of medical problems in early modern England. Healers who were not licensed physicians were in demand largely because they charged little or nothing to minister treatment unlike their professional counterparts — physicians.[60] For example, apothecaries who prepared and sold medicinal compounds made from herbs and spices treated patients without any formal medical training or qualification. Their trade in London was monitored by the Worshipful Company of Grocers which was incorporated in 1428.[61] Many guild members had shops on Bucklesbury Street 'where they stored and sold spices, confectionery, perfumes, spiced wines, herbs and drugs which they compounded and dispensed to the public'.[62] Women also filled this healthcare gap, practising vernacular medicine — any healing process that employs herbal remedies — at home to treat their families, friends, and neighbours. Physician William L. Minkowski notes in addition that 'In England, before King Henry V's decree of 1421, ordering a ban on women practitioners of medicine and surgery, female doctors and surgeons were less threatened by their male colleagues'.[63] Medieval English literature professor Diane Watt points out that the late fifteenth-century letters of Margaret Paston and other female members of the Paston family offer evidence that 'women within the late medieval household continued to play important roles when it came to healing as well as caring for the sick', from 'nursing to treating ailments and to prescribing and dispensing medicines'.[64] Sixteenth-century cleric William Harrison alluded to the distilling skills of the ladies of the royal court, extolling that: 'How many of the eldest sort are also skilful in surgery and distillation of waters beside and other artificial practices'.[65] And Wilson added that ladies of the house practiced distilling but 'In larger aristocratic households, …distilling duties were assigned to one or two servants'.[66]

This raises the question: How did English women learn how to distil and what was their literacy level? Recent interest in historian David Cressy's 1977 study of the reading and writing ability of the period's female population has garnered intriguing new conclusions by historian Eleanor Hubbard.[67] Concentrating on the female population of sixteenth- and seventeenth-century London, in particular, Hubbard determined that social status greatly affected literacy. 73% of gentlemen's and esquires' wives were literate while 30% of the spouses of merchants and tradesmen could read. A slightly lower literacy rate of 23% was found amongst artisans' wives. This suggests that about three-quarters of London's aristocratic women and eventually less than a third of middling-sort English housewives could read the flood of printed advice manuals and thus learn how distil both alcohols and hydrosols — or non-alcoholic distilled waters. Future research could determine how many early-modern English women in rural areas and in all social strata also possessed basic reading skills Consequently, urban and rural women could probably read the new advice manuals thanks to the rise in female literacy. But what tools did they use?

The equipment both domestic distillers and apothecaries employed at this time was as rudimentary as the brewing tools used in many English homes. The simplest form of alembic used in household kitchens was the cold still.[68] Fashioned from clay, the still's cucurbit was secured with a conical head that allowed vapours to rise and circulate in a cloth-covered, air-cooled dome before streaming down the head's neck into a receiving vessel. The device was balanced above a dish of smouldering charcoal or set into a balneo — water bath — which generated steam from the fermented liquid. Besides essential medicines and floral waters, women also produced small quantities of *eau-de-vie*, a spirit extracted from cherries or mint or other fruits and botanicals.[69]

Domestic distillation's value for medicinal applications did not go unnoticed. Parliament legitimised the practice in 1543 with the passage of a bill that permitted anyone with a working knowledge of 'herbs, roots, and waters or the operation of same' to treat patients with 'any … herbs, ointments, baths, poultices and plasters, according to their cunning, experience, and knowledge'.[70] (Waters in this context implied they were either alcoholic or non-alcoholic distillates known as hydrosols.) With government benediction, apothecaries treated the afflicted with any remedy they deemed fit. By its wording, the bill inadvertently granted permission not only to apothecaries but to housewives and gentlewomen who as part of their domestic role were expected 'to keep herb gardens, compound remedies, and treat the illnesses and injuries of their families and neighbours' as well as to distil medicinal spirits.[71] Vernacular medicine's demand was not limited to the countryside. Historians Margaret Pelling and Charles Webster determined that by 1600, London's population of 200,000 had one medical professional to treat every 400 Londoners.[72] Apothecaries and housewives were as much a necessity as physicians. Historians Katherine A. Allen and Anne Stobart deduced distilled and compounded medicines formed a 'charitable provision for the poor [which] has been portrayed initially as a source of confirma-

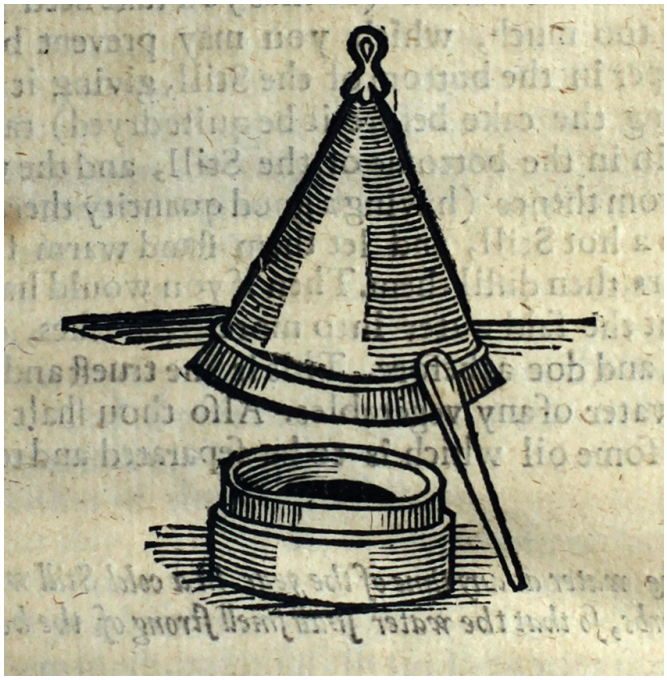


Figure 1. Cold still from Dr John French, *The Art of Distillation.*[73]

tion of piety for wealthy women'.[74] And home distillation offered middling-sort housewives an opportunity to emulate their aristocratic complements.

But it was the drinking culture of the English royal court that transformed distillates into pleasurable potables, not just medicines. Historian John Chartres notes the 'consumption of distilled liquors as beverages in England dates only from the later sixteenth century'.[75] Yet Wilson concludes that the social drinking of spirits was introduced into the English royal court's drinking culture by the mid-sixteenth century, noting that Henry VIII replaced hippocras — a wine infused with botanicals — with *aqua vitæ* in his royal court.[76] As mentioned earlier, in Scotland, *aqua vitæ* was the name attributed to all ardent spirits, but in England and Ireland a spirit by the same name was redistilled or rectified with botanicals.[77] During Elizabeth I's reign another spirit, *aqua rosa solis*, was popularly consumed as a digestif and as an aphrodisiac. The process involved steeping Sundew flowers (*Drosera rotundifolia L.*) and *aqua compositæ* — a rectified spirit similar to *aqua vitæ* — for 20 days with a blend of dates, cinnamon, ginger, cloves, grains of paradise, and red rose petals.[78] The mixture was then filtered, sweetened with sugar, and coloured with gum amber, pearl, and fine gold leaf.

Elizabeth I's own appreciation for social spirits consumption and for spirits' medicinal value is evidenced by the monopoly she granted in 1596 — a plague year — to courtier and Groom of the Privy Chamber Richard Drake to produce both *aqua compositæ* and *aqua vitæ*.[79] While the monopoly's stated purpose was to eliminate the production of 'unwholesome spirits' and the 'temptation to produce 'prophylactic "plague waters" from hogwash and dregs', it also facilitated spirits distillation for a growing audience of social drinkers.[80] Spirits consumption continued to weave into the fabric of the English royal court's drinking culture when James I ascended to the throne. His wife Anne of Denmark imported the Danish royal court's drinking culture that highlighted spirits consumption to her new British home.[81] From this royal launch point, the social pastime of spirits consumption trickled down and was assimilated into middling-sort English social drinking culture.[82]

Gin's early modern predecessors

England's printing revolution yielded 153 printed advice manuals filled with distillation recipes: Between 1527 and 1605, about 400,000 copies were printed and sold through the emerging printing and bookselling trades.[83] London's book trade was represented by about 24 printing houses mostly situated around the old St. Paul's churchyard, Holborn, and Aldersgate.[84] The trade was monitored by the Worshipful Company of Stationers which was organised in

1403 and was granted a monopoly in 1503, thus securing the printing revolution's hold in England. John Day was one of those London printers who in 1565 published another best-selling distillation book which was written by Swiss physician Conrad Gessner and translated into English by Oxford scholar Peter Morwen.[85] Titled *A new booke of destillatyon of waters, called the Treasure of Euonymus*, this compilation included distillation recipes attributed to Roger Bacon, Albertus Magnus, Geber, Avicenna, Hieronymous Brunschwig, and other, more diverse sources. For example, one chapter titled 'Aqua vitæ against pestilence approved and used with great and marvellous success by a certayn physician of our tyme Solodrun in Helutia the yere of our Lord 1547' contained a recipe for 'A most noble water of vertues' derived from a 'certayne written boke'.[86] Steeping galangal, grains of paradise, juniper berries, fennel seeds, cinnamon, and eleven other botanicals in wine for 14 days, the liquid was strained. The solid remains were then ground and returned to the liquid. The mixture was then steeped for eight days and then distilled.

Another chapter offered a formula for *aqua vitæ*, purporting it was produced at the Emperor's Court at Constantinople.[87] Infusing 23 botanicals, including cloves, nutmegs, ginger, coriander, juniper berries, and cardamom seeds in wine with crushed almonds, pomegranate seeds, and honey or sugar for five days, the mixture was then distilled and administered to 'confirmeth the stomack, cheareth the mind, and remedieth the disease called gutta, the drop, the agewe, the coughe, the wombe, and the wormes in the head.'

And in the chapter of 'divers kindes of Aqua vitæ composed' there was a remedy for the pestilence that macerated 50 botanicals including lavender flowers, wormwood, juniper berries, angelica, rhubarb, the bark of citron, saffron, and cinnamon into wine which was then distilled 'in a limbeck [alembic]'.[88] Complex in both composition and execution, these formulations suggest that distillers achieved a new level of sophistication that transcended the simple extraction of spirit from wine, fermented grains, or beer. Then, the seventeenth century saw English domestic distillation evolve rapidly thanks to these advice manuals plus technological advancements.

First published in 1602 by printer Peter Short, Hugh Plat's *Delightes for Ladies* was a bestseller, produced in multiple editions.[89] The son of prominent London brewer Richard Plat who operated the Old Swan brewery on Jones Street, Hugh Plat introduced three recipes that are pertinent to this discussion. First, 'Dr Stevens' Aqua Composita' was the base spirit used to produce Elizabeth I's previously mentioned *aqua rosa solis* and one of the first spirits produced under a monopoly granted to Richard Drake.[90] 16 botanicals including ginger, cinnamon, nutmeg, grains of paradise, anise seeds, fennel seeds, caraway seeds, rosemary, camomile, and lavender were macerated in one gallon of Gascon wine for twelve hours. Distilled in a pewter alembic with instructions to keep 'the first cleare water that cometh by itself, & so likewise the second', concluding that the liquid produced a pint of 'the better sort' finished spirit.[91]

Plat's second spirit of interest was usquebaugh, which he alternately called Irish *aqua vitæ*. This formula macerated *aqua compositæ* like the one previously mentioned for five or six days with bruised and chopped liquorice root plus anise seeds. The spirit was then fined or allowed to become clear for another three or four days and sweetened with molasses. Finally, it was dulcified for a second time with dates and raisins. Author of a European travelogue Fynes Moryson recounted, in 1617, that: 'The Irish Aquavitæ, vulgarly called Vsqubaugh, is held the best in the World of that kind; which is also made ine *England*, but nothing so good as that which is brought out of Ireland'.[93] He justified his preference on the inclusion of raisins, fennel seeds, and 'other things' that reduced the alcoholic heat on the palate. This suggests English *aqua vitæ* was more herbal in nature and less sweet than usquebaugh. Moryson then added that this 'English-Irish' drink appealed to both sexes who 'vse excesse therein'. While Moryson lends only a singular perspective on the gender balance of seventeenth-century alcohol consumption, it invites further research into the level of spirits production and consumption by both sexes in early modern England and Ireland.

The third and final distillate, Spirit of Spices rectified a wine spirit or brandy with oils of cloves, mace, nutmeg, juniper, rosemary, and other botanicals through an alembic 'with a gentle heat either in balneo, or ashes' — meaning in a water bath or rested on hot ashes, not on a direct flame.[94] Aged in a closed container for one month, the liquid was 'a most delicate Spirite of each of the saide aromaticall bodies.'

These complex beverages could be accomplished in a cold still such as the one described earlier but the best quality and greater quantities were produced in a hot still — more familiarly called a pot still.[95] The still's pot was secured with a rounded still head that accommodated additional air circulation and vapour concentration. Filled with liquid, the hot still was set over a brick furnace fitted with an aperture that allowed the still to rest either over indirect heat or in a balneo. The still's head and the swan-like neck allowed the capture of the escaped steam, sending it down the length of the neck by natural gravity and air pressure to the worm — a serpentine tube — nestled into a cooling tub filled with cold water. Thus, the alcohol vapours condensed against the cold sides of the worm and flowed out the other end into a receiving vessel.

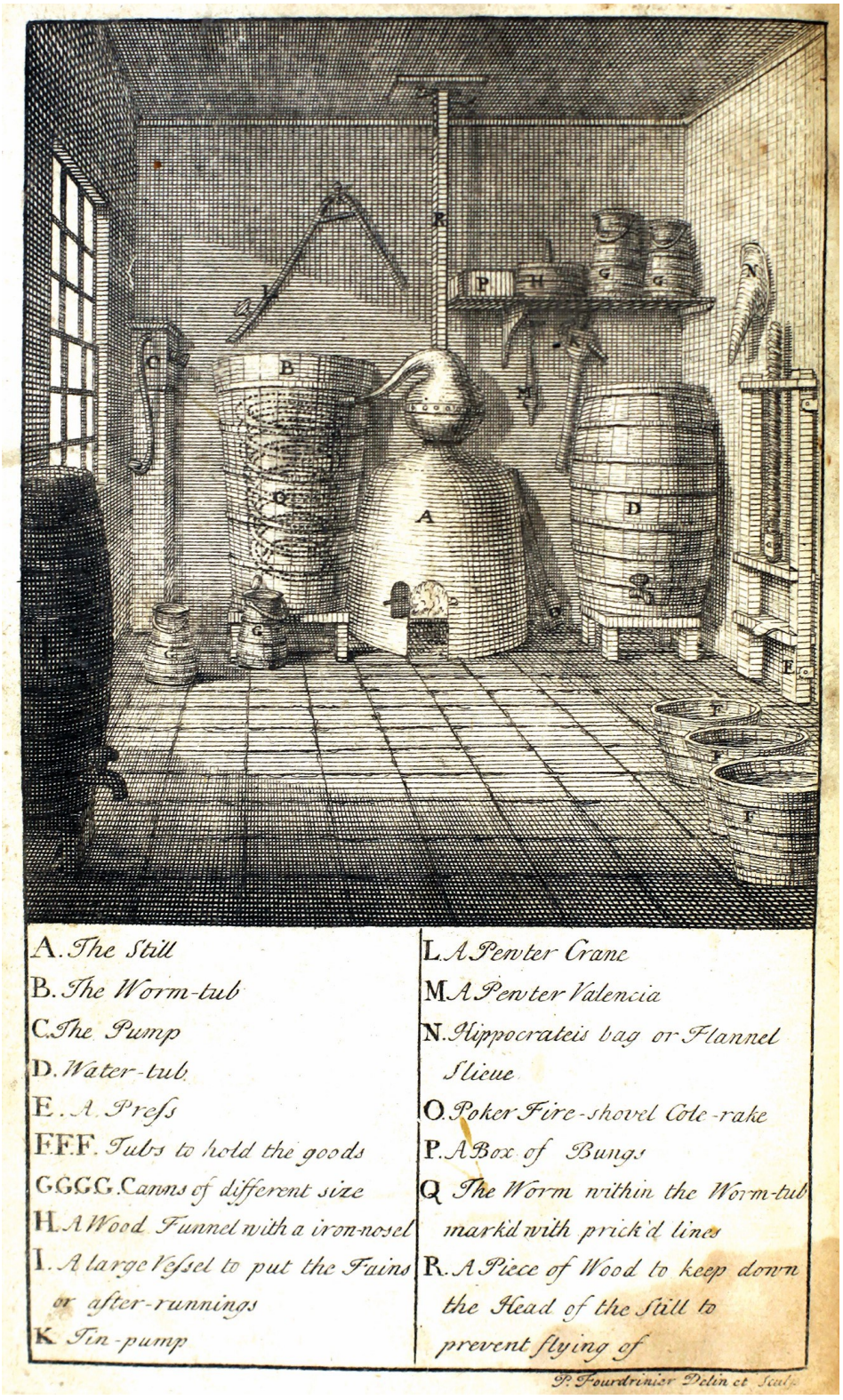


Figure 2. Pot still from George Smith's *The Compleat Distiller*.[96]

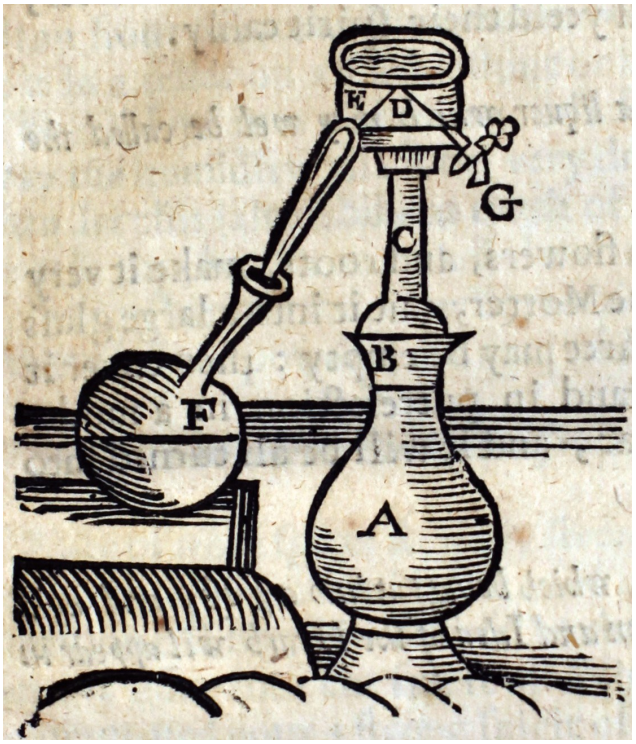


Figure 3. A bucket-head still from Dr John French, *The Art of Distillation*.[97]

Smaller quantities of spirits were also effectively distilled in an enhanced version of an earlier alembic called a Moorshead still.[98] Named the bucket-head still, its main components were fashioned out of copper. A highly reactive metal, copper binds with the sulphur compounds found in wine and beer, removing impurities plus offensive aromas and flavours from the resulting spirit. This still was also heat -resistant, withstanding the temperature of a naked fire. Thus, the liquid inside heated more rapidly, quickly concentrating vapours and producing a higher alcohol-by-volume (ABV) content. Ascending from the still's body up the neck, the vapours further cooled while passing the still's head which was continuously cooled with water before streaming down the swan's neck to the receiving vessel, allowing for purer extraction.

Economic changes triggered a major transition in production amongst many English distillers from wine spirits to grain spirits. Historian Tim Unwin suggests that differing taxation rates on wine imports changed consumption and production patterns, reflecting 'the various changing political alliances of the period'.[99] Consequently, wine consumption in England was affected. The distilling trade was also affected as English distillers resorted to producing spirits from local beer, ale, or directly from fermented malted grain. This transition is seen in the 1615 edition of Gervase Markham's *Countrey Contentments or The English Huswife*. His *aqua compositæ* recipe distils a dozen botanicals including rosemary, thyme, hyssop, sage, fennel, elecampane roots, pennyroyal, red mint, liquorice, and anise seeds with 'two gallons of the best Ale that can be brewed'.[100] Later, in the 1655 book *The Queen's Closet Opened* — reputedly authored by Walter Montagu and Charles I's Queen Henrietta Maria — the recipe for 'Clary water for the Back, Stomach, Etc.' macerated three gallons of 'middling Beere' or table-strength beer with clary, raisins, anise seeds, and liquorice which was distilled into a receiving vessel filled with powdered lump sugar.[101] Another formula titled 'A Plague water to be taken one spoonful every four hours with one hours Sweat every Time' called for distilling scabious, betony, pimpernel, and turmentine roots with strong beer.[102] This close association of beer or malted grain is also encountered amongst commercial distillers as will be discussed later.

Although England's consumer revolution is generally associated with the eighteenth century, historian Jon Stobart notes that there are examples of 'a close relationship between the advent of new goods and new modes of selling in the previous century'.[103] Retailing was a novel approach to selling goods as consumerism shifted attention away from

domestically produced items. Stobart comments that 'The so-called "shopping galleries"' found in seventeenth-century London's commercial exchanges were each associated with specific goods, sales techniques, and audiences.[104] The Royal Exchange built in 1567 was London's first commercial and financial exchange, offering retailers rented stalls to ply their wares in a business and social atmosphere.[105] Heading westward, in 1609, Westminster Hall had outlets that appealed to male shoppers and the New Exchange offered aristocratic women a place to shop and socialise as consumerism took a firm grasp on the English psyche. Returning to Plat's 1602 book *Delightes for Ladies*, one chapter was titled 'How to make the ordinarie Spirit of wine, that is solde for five shillings, & a noble [about £126 today], a pinte' suggests spirits were a new and potentially profitable commodity.[106] Distillers' shops and 'hot water houses' — the cousin of the ale house — popped up to service the city's thirsty drinking culture amid these new environs.[107] At this point, anyone in England who could afford to purchase a still of any design, measuring tools, storage equipment, a printed advice manual, and rent space in a commercial district could set up a distiller's shop. And indeed, many did. R.J. Forbes noted that in early modern London 'it took £2000 to £10,000 [about £275,750 and £1,378,770 today] to build a brewery whilst a distillery required only £500 to £5000 [about £68,938 and £689,384 today]' in capital investment.[108] Unlike the physical plant and space needs for commercial brewing that included at least a few mash vats, brewing kettles, guile vats, coolers, and storage barrels, distilleries needed only a modicum of equipment and space: Fitted with a single pot still or several pot stills plus a few containers for storage. The need to regulate English housewives, apothecary shops, and distiller's shops who comprised the new trade became obvious as consumer habits ramped up in favour of spirits consumption.

The professionalisation of English distillation

The catalyst in English distillation's professionalisation was Théodore Turquet de Mayerne. The Swiss-born son of French historian Louis Turquet de Mayerne, Théodore studied at the Montpellier School of Medicine in France whose faculty included the twelfth-century Catalan alchemist Arnaud de Villeneuve, who was the first European to distil alcohol from wine and the thirteenth-century Catalan mystic Ramon Llull, who first scientifically analysed the effect of multiple distillations on a single spirits batch.[109] De Mayerne served as physician-in-ordinary to King Henri IV of France until the monarch was assassinated in 1610. The next year de Mayerne was appointed the primary physician to King James I of England and his queen, Anne of Denmark. Elected in 1616 as a Fellow of the Royal College of Physicians, de Mayerne's interest in iatrochemistry and the Crown's appreciation for social spirits, which I mentioned earlier, played significant roles in professionalising seventeenth-century English distillation.

James I granted Gideon de Laune a monopoly in 1617 — assisted by de Mayerne's political influence and aid — to establish the Worshipful Society of Apothecaries, which managed apothecaries as the sole providers of medicines — distilling, compounding, and dispensing preparations the College's physicians prescribed. De Mayerne next worked with the College to publish *Pharmacopoeia Londinensis*, in 1618, standardising the recipes for both distillates and compounded medicines.[110] While this new monopoly oversaw medicinal distillates throughout London, a growing demand for spirits in popular drinking culture created a new revenue stream for the rising number of commercial distillers and a surging demand for regulation.

Before distiller's shops produced *aqua vitæ* and *aqua compositæ* as social spirits, London's distilleries made a good profit from distilling vinegar from surplus ale and beer purchased from brewers or by fermenting malt and hops themselves.[111] Sixteenth-century chronicler and antiquarian John Strype noted: 'That in the beginning of the Wars in the Low Countries [the Eighty Years' War (1566-1648)], the Flemings bought great Quantities of this kind of Beeregre [a vinegar formed from beer] for the cooling of their Ordinance, and was sold at good Prices to the Spaniards ....'[112] But popular drinking culture shifted this business model, making rectified spirits such as Geneva a best-selling commodity. As eighteenth-century distiller Ambrose Cooper recounted: 'There was formerly kept in the Apothecaries Shops a stilled spirituous Water of Juniper, but the Vulgar being fond of it as a Dram, the Distillers supplanted the Apothecaries, and sold it under the Name of Geneva'.[113] His statement suggests that there was a difference between the apothecary's Water of Juniper or *aqua juniperi* and the commercial distillers' Geneva.

So, what was Geneva? The answer depends greatly on whether the discussion relates to the making of Dutch Geneva or English Geneva. Eighteenth-century physician Peter Shaw later described the production methods employed in both countries, observing that in Holland:

> …the *Malt-Stiller* gives his Spirit a single Rectification per se, in order to purify it a little, and make it up *proof*; … or to be disill'd with *Juniper Berries* or other Ingredients, into Geneva, or other Compound Waters for the vulgar. And this is all the Rectification the *Malt-Spirit* made in *Holland* usually undergoes: the Method there, being able to distil their Low-Wines to full *Proof-Spirit*; and then directly make it into *Geneva* ...[114]

In other words, Shaw's major point of difference between Dutch and English Geneva was that Dutch distillers 'have little notion' of 'Rectification; and [the] making of double Spirit'.[115] (Rectification is the term used to describe the process of purifying and intensifying a spirit through repeated distillations, producing a purer essence and increasing the spirits' ABV content.) Consequently, Shaw concluded Dutch distillers 'leave their common Spirit so foul, and coarse as renders even the Geneva made with it very disagreeable,' adding that the offensive flavour is heightened substantially by 'their immoderate use of *Rye Meal*, in the production of their Spirit'.[116] Shaw points out two crucial differences. First, the Dutch distilled their low-wines — or the initial low-alcohol distillations — from a ferment made almost exclusively of rye meal and water. Second, the English distilled their low-wines with beer or fermented malted barley — free from rye meal—using repeated rectifications until the desired purity and higher ABV content were achieved. This made Dutch Geneva and English Geneva as different in composition and manufacture as the dissimilarities between today's bourbon whiskey and scotch whisky.

The trend toward the social consumption of spirits grew. Historian Joan Thirsk determined that by 1621 residents of London and Westminster were serviced by no less than 200 distiller's shops.[117] But there were also rogue distillers selling 'British brandy' that was reportedly manufactured from beer dregs, wine lees, and rotten fruit, and other undesirable fermentable material, according to Burnett.[118] In this context, Drummond and Wilbreham defined 'British brandy' as spirits distilled from 'raw materials other than wine'.[119] However, since many distillers — both domestic and commercial — found beer and ale more suitable ferments for distillation and rectification as evidenced in the advice manuals of the day, this 'British brandy' was more than likely distilled from the items mentioned by Burnett. A group of outraged commercial distillers presented a petition to outlaw rogue distillers, on 27 February 1621, to the House of Commons titled *An Act for Relieving of the Distillers and Sellers of Aqua Vita, Aqua Compostia, and other strong and hot waters, in London and Westmynstere, and the Liberties and Suburbs thereof, and within seven miles compass of the same*.[120] It was to no avail. Parliament accomplished little that year to stem the tide of bad liquor production.

Then, *An Act concerning Monopolies and Dispensations with penall laws and the Forfeyture thereof* was passed on 12 February 1624.[121] The statute opened the doors to de Mayerne and physician Thomas Cademan to receive Patent #81 on 25 March 1635 to distil spirits and make vinegars from 'cider, perry, and buck or French wheate, where of they have byn the inventors' for a yearly rent of £10 (about £1,200 today) payable to King Charles I for a period of 14 years.[122] The next year, Cademan and another of his associates Sir William Brouncker, who was a gentleman of the Privy Chamber, received Patent #90 on 26 March 1636 for 'Drawing double the quantity of *aqua-vitæ* from a given quantity of liquor; also extracting a larger quantity of strong water from malt than has hitherto been usual'.[123] This patent suggests that Cademan and Brouncker were manufacturing large quantities of neutral grain spirit from fermented malt — basically distilling spirit from unhopped beer or ale .The men set up production from 'a house described as on the backside of St. James' Park', which by some accounts was situated across the road from St James's Palace on Cleveland Road near Brouncker's home on St. James's Street.[124] (Their enterprise was such a success that in 1633, Brouncker and Cademan petitioned to move their operations 'being doubtful it might offend his Majesty's house if it were enlarged, which they have the necessity to do' and wished for the king to inspect their new distillery.)[125]

Concerned for the reputations of both London's apothecaries and distillers — as well as his own and his colleagues' respective business interests — de Mayerne publicly condemned the distilling trade's rising denigration by this:

> … current of the disorderly and inordinate intrusion of Interlopers into the practice of this Art: who by their preposterous wayes of working, and frequent use of base and unsound materials, have brought scandall, not onely upon the works of this Art, (the wares) but also on the Art, and Artists themselves.[126]

To preserve the credibility of the city's commercial distilling trade, De Mayerne, Brouncker, and Cademan (who by 1626 was appointed physician-in-ordinary to Queen Henrietta Maria) along with 99 producers of 'spirits, *aqua vitæ*, strong waters, vinegars, and beeragers' obtained a monopoly, on 9 August 1638, establishing the Worshipful Company of Distillers.[127] This 'body politic' was mandated to monitor and regulate commercial distilleries in London, Westminster, and the surrounding 21-mile radius.[128] Just as he had done to support London's apothecaries, de Mayerne edited and published a standards manual for the new guild in collaboration with Cademan. The 1639 *The Distiller of London* contained the guild's rules of conduct plus recipes for 34 approved 'strong waters' and 16 variations written in code to protect their 'mysteries' in large and small quantities.[129] (The book helped the guild to publicly lay claim to control of distilling trade by reprinting it in 1669, 1698, and 1726.)[130]

The Distiller of London provides insights into three significant changes in early modern English distillation. First, the early modern English had developed a sweet tooth, not just in food but in beverages. The manual's recipes — called 'rules' — are rectifications that are dulcified or sweetened

with sugar or honey after redistillation. These formulations not only demonstrate sugar's growing popularity in early modern England, they also suggest the reason why these spirits were later popularly called 'sweets' in both the 1737 Sweets Act and an 1817 statute that ordered distillers to obtain separate licensing to 'brew or make for Sale any Liquor called Sweets or Made Wines'.[131]

Second, the manual's regulations demonstrate how rogue distillers produced spirits of a lesser quality. One directive banned guild members from distilling spirit from stale beer, stale ale, or brewers' afterwort 'Blew-John' — a partially fermented remnant wash from the brewing process.[132] It also prohibited distilling lees of wine, 'unwholesome Sugarwaters', or rotten fruit and provided two standardised recipes for making vinegar.[133] However, no instructions are given in the manual for distilling the strong-proofe grain spirits employed in the rules. It is unknown if this was an intentional omission because the company's founders had monopolies in London on producing neutral grain spirits from malted grain or it was the authors' oversight. A point for future research could determine if the strong proofe spirits mentioned in the manual's recipes were in fact produced in quantity by Cademan, and Brouncker who held the monopolies on these goods and sold them to members.

Third and most important to this discussion are three rules that include juniper berries. The first, Rule XXVI for making of *aqua ad crapulum* or Surfeit Water called for the rectification of 80 pounds of strong proofe or multi-distilled spirit with 16 botanicals including juniper berries, calamus roots, galangal, angelica seeds, white cinnamon, and anise seeds.[134] The final distillate was then dulcified with sugar. The second, Rule XXXI, for *aqua rosa solis* or Rosa Solis proper, rectified 'strong proofe' spirit with juniper berries, marigold flowers, anise seeds, sassafras, and caraway seeds.[135] The redistilled spirit was then aromatised with musk and ambergris before being coloured with a tincture of clove gilliflowers or red roses and finally dulcified.[136] Finally, the third recipe, Rule XXXIII, for *aqua fructum* or Water of Fruits redistilled 'strong proofe' spirit with juniper berries, quince parings, apple parings, lemon and orange peels, nutmeg, anise seeds, and cloves. After rectification, the spirit was infused with strawberries and raspberries for ten days before being filtered and dulcified.[137]

These three recipes inspired intense personal curiosity on my part about seventeenth-century distillates that included juniper berries. Taking a page from experimental archaeology, I managed with very limited time and access to essential distillation equipment to recreate Rule XXIII after I decoded all 'rules' in the 1638 edition of *The Distiller of London* which I published on behalf of the Worshipful Company of Distillers of London in 2020.[138] (It is important to note that these deciphered recipes deviate from those found in the 1667 supplement to Dr John French's *Art of Distillation*.)[139] I wish to note a caveat here taken from the recent medieval brewing experiments conducted by Susan Flavin and a team of researchers.[140] The early modern English distillation equipment, techniques, and most importantly the grain and botanicals themselves differed markedly in the sixteenth and seventeenth centuries from what is available today. There is no way to accurately replicate an organic liquid such as a seventeenth-century rectified spirit which was produced on many different still types by the guild's members, using a grain spirit made from undefined malted grain species and botanicals with indeterminate provenance. (For example, the organoleptic differences amongst Mediterranean, northern European, and British Isles juniper berries are quite extreme.) But I came as close as possible to rectifying the materials indicated in the recipe in a copper pot still of similar design to the large-scale, early modern pot still designs. An unmalted barley grain spirit and a neutral grain spirit were combined to make the strong proofe spirit that was macerated with Mediterranean juniper berries, quince peel, pippin apple peel, lemon peel, orange peel, nutmeg, anise seeds, and cloves for 24 hours before it was rectified in the 300-litre copper pot still known as 'Prudence' at the Sipsmith Distillery in London. The redistilled spirit was placed in used oak barrels for 10 days to infuse with dried strawberries and raspberries before being filtered and bottled.

Samples of this test liquid were tasted against three modern-day London dry gins — Beefeater, Tanqueray, and Sipsmith — by the master distillers of Beefeater, Sipsmith, Plymouth, and Thames Distilleries on 21 February 2021.[141] The consensus reached by this panel was that Rule XXXIII for *aqua fructum* is a very close ancestor to modern day gins and is the earliest recipe to follow this structure, exhibiting a similar balance of juniper berries to both citrus and spice. (For reference, the botanical mixture rectified with spirit in Beefeater London Dry Gin contains juniper berries, angelica root, angelica seeds, coriander seeds, liquorice root, almonds, orris root, Seville orange peel, and lemon peel. Sipsmith London Dry Gin rectifies juniper berries, orange peel, lemon peel, coriander seeds, orris root, liquorice root, angelica root, cinnamon bark, cassia bark, and almonds. And Tanqueray London Dry Gin redistills juniper berries, coriander seeds, angelica root, and liquorice.) The nineteenth-century birth of what are now considered modern-day gins aside from Tanqueray — first produced in 1830 — and Beefeater — first rectified in 1862 — are discussed later.

Although the Worshipful Company of Distillers was granted a monopoly, it met with intense opposition from London's apothecary guild who felt these commercial distillers en-

croached on their monopoly. Yet Charles I sided with the distillers, threatening to use 'some coercive way for despatch of the business, and by that means vindicate his honour'.[142] However, the start of the Civil War in 1642 and the king's execution in 1649 meant the issuance of the guild's charter was delayed and its fate was uncertain until March 1658 when the City of London finally enrolled the document.[143] The restoration of the monarchy and the accession of Charles II during the 1660s also saw the distillers' guild's revival. Women were inducted as guild members such as Judith Robins, who in 1666 became a member after having 'used the art for 24 years and 3 years as a widow'.[144] Other female inductees were the widows of guild distillers who continued to ply their husband's trade. The guild continued to increase in membership; to heighten its authority as a political body when it was granted livery status in November 1671; and to elevate its prominence when James II granted it a new charter in 1687. At this point the guild's most notable duty was to defend its members against abuses by farmers of the excise—agents charged with the duty of accounting for and collecting excise on commodities, including spirits which was instigated four decades earlier.

The excise and the gin craze

When Charles I ascended the throne in 1625, he inherited his father James I's debt load which placed the entire country 'in such straits for money as not to be spoken of'.[145] The most effective mechanism devised by Parliament to remedy the financial crisis was the nationalisation of taxation on England's most profitable commodities, including beer, ale, and spirits. Passed on 22 July 1643, *An Ordinance for the speedy Rising and Leavying of Moneys, set by way of Charge or new Impost, on the severall Commodities mentioned in the Schedule hereunto annexed* was intended to be a temporary measure — renewable on a month-to-month basis.[146] Spirits were not included in the first excise schedule. But a few months later, on 8 September 1643, the scheme was amended in *An Ordinance for the speedy Raising and Leavying of Moneys by way of Charge and New-Impost, upon the severall Commodities, in a Schedule hereunto annexed contained, as well for the better securing of Trade, as for the maintenance of the Forces raised for the defence of the King, Parliament, and Kingdom, both by Sea and Land, as for and towards the payment of the Debts of the Commonwealth, for which the Publike Faith is, or shall be ingaged*, adding a 2s 4d (about £14 today) per 36-gallon barrel excise on 'strong water and *aqua vitæ* made or distilled within the realm' which the guild dutifully collected from its members.[147] Spirits were by now a valuable commodity on par with beer and ale, yet the burden of payment for the spirits excise rested on distillers until 17 March 1654 when *An Ordinance for Continuing the Excise* was passed which saddled sellers with this obligation.[148] Historian John Chartres determined from the excise reports for that year, 80,000 gallons of taxed spirits were produced and consumed, while treasury reports show that roughly 41,000,000 gallons of excised beer were produced.[149] Responsibility switched again to the distillers on 25 December 1660 when *A Grant of certain Impositions upon Beer, Ale, and other Liquors, for the Increase of his Majesty's Revenue during his Life* raised the rate to 5s 8d (about £30 today) per 36-gallon barrel on spirits 'distilled within the realm from foreign or domestic materials'.[150] It is important to note that the production figures used here do not reflect the quantities of unexcised beer and spirits produced during this period by rogue brewers and distillers. And since there are no accurate accountings for this sector of both trades, these statistics only present a limited portrait of what was produced during the period.

When William and Mary ascended the English throne in 1688, three major changes shifted consumer preference from beer to spirits based simply on affordability. First, an amended statute titled *An act for an additional duty of excise upon beer, ale, and other liquors* not only raised the excise to 7s 8d (about £44 today) per 36-gallon barrel but shifted the burden once again to spirits sellers.[151] According to excise returns for 1684 through 1688 from England and Wales, the average quantity of spirits excised was over 533,000 gallons — a roughly 660% leap in output when compared to thirty years earlier.[152] (During the same period, an average of 27,900,000 gallons of beer was excised, representing about a 30% decline.)[153] Although taxation cost spirits sellers as well as beer retailers — and consequently the consumers — a hike in end-consumer pricing, social drinking culture embraced spirits consumption so fully, only beer suffered in the face of additional taxation.

Since the excise scheme's inception, beer was more significantly affected than spirits when the additional cost was amortised across the number of servings per 36-gallon barrel. For example, with a new tax increase set on 20 March 1690, brewers were charged 7s 18d (about £51 today) per 288 pints of strong beer or 0.35d per pint.[154] Distillers, on the other hand, were charged 15s 4d (about £92 today) per 36,864 drams — the measure at which spirits were sold, especially in dram shops and hot water houses — or 0.0049d (about 0.25p today) per dram. This intentional change in the excise rates geared to favour spirits over beer was conveniently coupled with the passage on 25 December 1695 of a statute titled *An Act for the Encouraging the Distilling of Brandy and Spirits from Corne and for laying several Dutyes on Low Wines of Spirits of the First Extraction* that triggered two major changes.[155] First, all charters and letters patent granted for the distillation of spirits were declared void. The

distillers' guild no longer managed the city's distilling trade and all monopolies including those owned by de Mayerne, Cademan, and Brouncker were invalidated. Second, it discouraged the importation of French wheat and wine while encouraging distillers and brewers to exploit the surplus grain from the series of abundant harvests. But with the excise's heavy hit on pricing, spirits producers gained economically the upper hand.

An excise return report titled 'The Number of Common Brewers & Victuallers in the whole Kingdom with the Amount in Barrels of strong and small charg'd in the several years below', show that from a total of 181,595,196 gallons of excisable beer produced in 1687 the total dropped to 119,861,928 gallons by 1693 and dropped again to 107,044,668 gallons in 1699, representing a 60% decline over the course of 13 years.[156] But from a total of 516,402 gallons of spirits in 1687 the quantity almost doubled to 948,376 gallons in 1693 but decreased to 877,085 gallons by 1699, representing an over 60% increase during the same 13-year period.[157] But what really precipitated this change in consumer habits?

As historian Roy Porter pointed out, 'for a while at least — the early Georgian "pudding time" — saw agricultural improvements make produce abundant and gin dead cheap'.[158] This is the moment Tlusty noted that historians 'of both Germany and England have described a process … in which gin began as the drink of choice for the upper circles of society, then declined in status over time, until both the drinkers and distributors belonged to the lowest socioeconomic levels'.[159] Porter continued by agreeing with historian Hand Mendick who argued that with the rise of conspicuous consumption in eighteenth-century London, gin drinking 'functioned as a vehicle of plebeian self-consciousness' which he believed should be interpreted as 'a claim on the part of plebeians to be as good as their so-called betters'.[160] These conclusions are corroborated by historian John Styles who adds that with increased wages, the labouring poor's capacity to respond to 'accessible innovations' also grew commensurately as 'the penetration of this market by gin … demonstrated the willingness of poor consumers to substitute new commodities for old' including gin for beer.[161] Thus, the shift from beer to spirits consumption was more a social transition than one based in economics and politics.

Until the eighteenth century, 'gin' was not the commonplace term for juniper-berry dominant spirits. So, who coined the word 'gin'? Bernard de Mandeville, in 1714, first used the term in his book *The Fable of Bees: Or, Private Vices, Publick Benefits*, in which he lamented that:

> … the infamous liquor, the name of which, derived from Juniper in Dutch, is now, by frequent use, and the laconic spirit of the nation, from a word of middling length, shrunk into a monosyllable, intoxicating gin, that charms the unactive, the desperate and crazy of either sex, and makes the starving sot behold his rags and nakedness with stupid indolence, or banter both in senseless laughter, and more insipid jests![162]

But it was the journalist and pamphleteer Daniel Defoe who on behalf of the distillers' guild, identified in a pamphlet printed in 1725 that the cheap gin producer was:

> a sort of petty distiller who made up those compound waters from such mixt and confus'd Trash, as they could get to work from … The spirits they drew were foul and gross; but they mixed them up with such additions as they could get, to make them palatable.[163]

He concluded this assault by adding that rogue distillers 'had found out a way to hit the palate of the poor by their new-fashioned compound water called Geneva.' Thus, while the aristocracy and middling sorts enjoyed the offerings of the guild's distillers, a proliferation of dram shops and hot water houses offered consumers rogue distillers' cheaper alternatives.[164] The 1752 volume of *Medical Essays and Observations* notes that in 1735 'the Gin commonly sold in *London*, is made by distilling 30 Gallons of Water, 10 Gallons of Lamp -spirits, and a Quart of Oil of Turpentine'.[165] This gin was compounded rather than rectified, combining a spirit of indeterminate provenance (possibly molasses or fermented fruit) with essential oils or infused with dried botanicals without redistillation. Nineteenth-century author Patrick Boyle also contributed a compounded method that used 17 gallons of undefined spirit mixed with oils of vitriol, almonds, and turpentine with lump sugar, spirits of wine, lime water, rose water, and boiled water. He suggested steeping a 'handful of burrage [borage]' into the spirit mixture to give it a 'fine flavour'.[166]

The events surrounding the era known as the Gin Craze (1720-1751) have been thoroughly discussed by historians Jessica Warner, John Chartres, and Constance Anne Wilson. For example, Warner deduced that the consumption frenzy was not affected by economic shifts, noting that the 'calamitous drop in real wages that occurred in the second half of the [eighteenth] century had no more effect on consumption than did the gains that occurred in the first half ...'[167] She further added that the 'gin craze followed the trajectory of other and more recent drug epidemics: that is, it lasted for the span of one generation'.[168] In other words, she felt it was just a trend that came and went out of fashion. Chartres suggested that politics more than economics played a role in the craze's inception, noting that 'there is even evidence to suggest that in the absence of war and protection, there may have been no "age of gin".'[169] So in his opinion, the craze was instigated by hostile times. But considering

England's involvement in foreign wars throughout the eighteenth century, it does not explain how the 'age of gin' ended amid the continued turmoil. Wilson concludes that because 'distilling was forbidden totally during certain periods in the 1750s, due to bad harvests and the need to convert grain into foodstuffs' the distilling trade was interrupted, thus ending the craze.[170] Wilson's deduction is debatable — a point I detail later in this section. But what really precipitated the Gin Craze's emergence and decline plus did it really have a significant impact on beer consumption?

Here, I concentrate only on the eight so-called 'gin acts' passed by Parliament and the impact — or lack thereof — that contributed to changing eighteenth-century English spirits consumption to arrive at an understanding of how the Gin Craze ended. It is important to note that these statutes were not specifically directed to managing gin or Geneva production and sales but were aimed at control of the overall category of so-called British spirits.

When the first act was passed in 1729, the law raised the excise on spirits to £9 (about £516 today) per 36-gallon barrel and compelled retailers to pay an annual licence of £20 (about £2,355 today).[171] Excise reports show that about 4,708,774 gallons of excised spirits were produced that year compared to 126,233,028 gallons of beer.[172] When the 1733 act was passed, it repealed the excise charges from the first act and it encouraged the exportation of 'spirits drawn from British Corn, without Mixture of other Materials' as a means of reducing local consumption.[173] Excise reports showed that spirits sales rose only marginally to 4,821,434 gallons while beer production increased to 138,687,516 gallons.[174] Then, the 1736 act mandated that retailers and distillers selling directly to consumers acquire an annual license of £50 (about £5,890 today) to sell 'any Quantity less than a gallon', placing the burden of responsibility on sellers.[175] Spirits production shot up to 6,116,314 gallons while beer declined slightly to 134,020,960 gallons.[176] The next year, the so-called Sweets Act of 1737 mentioned earlier repealed the 36s (about £212 today) per barrel excise charge on the dulcified liquors produced by guild members and imposed a new charge of 12s (about £70 today) per barrel — or 4d (about £2 today) per gallon — on 'sweets' — a 66% discount from the previous rate.[177] However, there are no excise reports that show the quantities of sweets produced during this period as opposed to spirits in England. The statute also authorised excise commissioners to reward informers going after unlicensed street sellers who were mostly women. This led to informers being attacked on London streets by mobs who disagreed with the law, as noted in the preamble of the next statute. The 1738 act thus reinforced the previous year's law, making it a felony to attack any informer and allowed the citizen's arrest of unlicensed gin-sellers, acknowledging that many members of the constabulary refused to apprehend friends and neighbours who sold spirits.[178] Excised spirits sales slumped to 5,439,377 gallons while beer sales marginally declined slightly to 132,709,788 gallons.[179] Instead of imposing further restrictions on production and despite the need to raise funds for the War of Succession (1740-1748) prompted the passage of a 1743 act which reduced the annual retail license to 9s (about £54 today) and reduced the excise on spirits to 2s (about £54 today) per 36-gallon barrel.[180] This measure only drove excised spirits production higher to 8,203,243 gallons while excised beer remained relatively stable at 131,287,896 gallons.[181] The 1747 act allowed distillers who sold goods from an on-premise shop to purchase an annual retail license for £5 (about £583 today), but limited the number of licenses issued to just one per business.[182] This reduced excised spirits production to 7,310,081 gallons and saw excised beer increase to 135,878,652 gallons.[183] Although the final gin act of the eighteenth century was intended to reduce gin production and sales when it was issued in 1751, spirits production had already marginally declined to 7,049,821 gallons while excised beer increased to 142,803,072 gallons.[184] The statute increased excise to 13.5s (about £90 today) per 36-gallon barrel for spirits and prohibited street sellers from plying their trade and distillers from selling their own wares altogether. Annual retail licences costing £2 (about £233 today) were granted only to taverns, inns, victualling houses, coffee houses, and ale houses. Thus, during the period of the eight gin acts from 1729 to 1751, spirits production only reached a high point amid the War of Sucession which coincided with the government's timely need for war funding. Beer on the other hand benefitted the most from the gin acts when the exportation of spirits was encouraged in 1733 and when retailer licenses were limited to conventional drinking outlets in 1751. So, did these so-called gin acts really lead to the Gin Craze's demise?

As previously mentioned, Wilson concluded that because of the bad harvests of the 1750s, the government was forced to periodically ban distillation in England altogether.[185] However, her deduction is invalidated by the excise reports, which show that spirits production fell from 3,714,810 gallons in 1757 to 1,850,271 gallons in 1758 and 1,829,134 gallons in 1759 before rising again to 3,115,138 gallons in 1760.[186] There was not a complete ban on distillation. More than likely severe restrictions were imposed on grain purchases made by distillers. But because beer was treated as a vital foodstuff, it did not experience any declines in production during the same period despite the bad harvests. From the 133,347,708 gallons of beer produced in 1757, the quantity rose to 141,642,072 gallons in 1758, increasing again to 150,590,016 gallons in 1759 and again to 158,020,776 gallons by 1760.[187] And while Chartres made in interesting

point about war and protection stimulating the Gin Craze, the point made about England's continued involvement in foreign wars does not explain the end of the craze. Clark comes closer to developing a plausible cause for change, deducing that advancements in brewing ended the Gin Craze and contributed to a revival in beer consumption due in part from the invention of porter and other stout beers to the establishment of tied house networks by large-scale brewers to technological innovations in malting, hops drying, and brewing.[188]

Limitations and technological advancements

In the same way brewing experienced a revival thanks to the invention of new styles and technological advancements in malting, hopping, and yeast cultivation, so did the distillation of English gin. Four stages ushered in the next phase of gin's evolution. First, Parliament took another approach to tempering English drinking habits when it passed *An Act to Encourage the Consumption of Beere* on 8 July 1823 which was intended to lower consumer pricing by reducing the excise on beer to 5s (about £14.36 today) per 36-gallon barrel and on porter and other strong beers to 10s (about £28.72 today) per 36-gallon barrel.[189] Second, a statute passed on 27 June 1825 prohibited any English distiller from owning a still with a capacity of less than 400 gallons (18 hectoliters). From that day onward, only large-scale, commercial distilleries operated by licensed distillers could produce spirits, eliminating small distiller's shops altogether.[190] (In practice, this statute remains unchanged. As of September 2020, the HMRC retains the power to refuse a distiller's license to any operation in which the largest still is 18 hectoliters or less, granting only provisional licenses to craft distillers.) The same statute set excise rates on spirits to about £13 (about £689 today) per 36-gallon barrel — or 0.084p (about £1.91 today) per dram to be included in the consumer price: more than it had been in 1690 when the excise was 0.0049d (about 0.25p today) per dram mentioned earlier. While it was intended to thwart smuggling of foreign spirits, it did nothing to discourage spirits consumption.[191]

The third stage saw two acts put into law within a month of each other that tipped the scales in favour of beer. First, *An Act to repeal certain of the Duties on Cyder in the United Kingdom, and on Beer and Ale in Great Britain* was passed on 16 July 1830, which ended the excise charged on beer, ale, and cider.[192] Next, *An Act to permit the general Sale of Beer and Cyder by Retail in England* — commonly known as the Beerhouse Act of 1830 — was passed a week later on 23 July 1830. The law was intended to encourage consumers to drink beer instead of spirits by enabling anyone who was willing to pay the excise on beer and to purchase an annual seller's license for £2 2s (about £142 today).[193] The brewing trade was finally relieved of the excise burden and restrictions on the venues that could retail beer, ale, and cider were lifted in favour of encouraging the opening of more beer houses. As Dr James Nicholls noted, 'within one year 24,000 beer shops had opened, rising to 40,000 within three years' but 'annual per capita consumption of beer, however, fell over the next three years before rising from 1834' until the act was amended that year and eventually repealed in 1869.[194]

The fourth and final stage transformed the aristocracy's gin into the modern-day gin we know today: the invention and adoption of the continuous column still. Able to sustain a constant process of distillation, this type of still behaves like a series of pot stills. Shaped in a vertical column fitted with plates that allow the vapors to be progressively purified as they rise through the various stages, the column still significantly increases the ABV content achieved in a pot still. Many continuous-column still designs appeared in early nineteenth-century Europe, most notably the 1818 column still designed by French engineer J.B. Cellier-Blumenthal.[195]

But with the invention of the Coffey still and the establishment of still makers Aeneas Coffey and Son in London, in 1835, a cleaner, purer grain spirit radically changed the character and quantity of distillates produced in the capital such as *aqua fructum* which contributed to its evolution into London dry gin.

While spirits consumption declined after 1751, Clark noted that 'demand revived from the 1780s and unofficial retailing spread like wildfire'.[196] Excise reports indicate that in 1803 excised spirits rose to 23,952,971 gallons over five times the 4,868,996 gallons produced in 1753.[197] Besides authorised retailers such as public houses, there were 'small shopkeepers involved in retailing liquor, often without permits' which were joined in London by coffee-houses and oyster rooms. Beginning in the 1820s, Clark notes 'the orthodox drink trade was also challenged by a new type of establishment, the larger, often quite elaborate or showy gin palace'.[198] Novelist Charles Dickens described, in 1836, the gin palaces situated in London's west end around St. Giles, Holburn, Covent Garden, Clare Market, and Drury Lane, most eloquently when he wrote:

> The hum of many voices issues from that splendid gin-shop which forms the commencement of the two streets opposite; and the gay building with the fantastically ornamented parapet, the illuminated clock, the plate-glass windows surrounded by stucco rosettes, and its profusion of gas-lights in richly-gilt burners, is perfectly dazzling when contrasted with the darkness and dirt we have just left.[199]

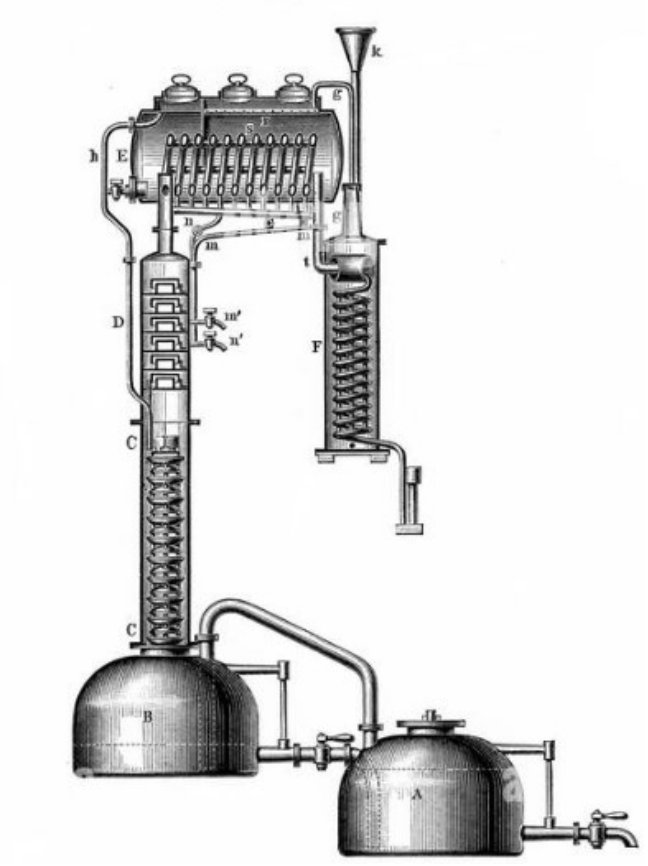


Figure 4. Cellier-Blumenthal's continuous column still (Source: Alamy stock images).

The resurgence of spirits consumption by the public married well with the progress made in the distilling trades' industrialisation as the association of the word 'gin' with several spirits styles that featured juniper berries hallmarked the nineteenth-century British distilling trade.

Research chemist James Sheridan Muspratt, in the first of his two-volume book titled *Chemistry* surveyed the types of distillates produced with this clean, higher-proof spirit in England's large-scale, nineteenth-century commercial distilleries.[200] He prefaced his presentation by hinting at gin's unique role as an ethnic beverage, remarking that: 'British spirit is but little known in the form in which it leaves the distillery because it receives from the rectifier the exclusive property by which it is rendered a household word'.[201] He elaborated on this position by adding British gin was 'for the most part, manufactured by the rectifiers of the low-wines of the Scotch and English spirit or whisky fabricators'.[202] In other words, Muspratt defined British spirit — or gin — as the rectification of a first-distillation, unaged whisky — or new make whisky distilled from malted grain — with botanicals produced by two types of distillers — one who distilled the base spirit and one who rectified the spirit into gin. Again, the connection between beer made from malted barley and high-proof spirit made from malted barley make them very close cousins indeed.

In his chapter on alcohol, Muspratt included six recipes for gin, compiled from the notebook of 'one of the most extensive and respectable distillery rectifiers in the kingdom ...'[203] A notable difference between these recipes and their guild recipe predecessors is that none of these contain sugar. Muspratt's recipe for British Gin rectified high-proof spirit with German juniper berries, coriander seeds, crushed almond cake, angelica root, and liquorice powder.[204] His Cordial Gin formula redistilled high-proof spirit with German juniper berries, coriander seeds, almond cake, orris root, and angelica root in different proportions. The option of adding cardamom or liquorice powder meant the rectifier could make a gin with a pungent, aromatic character or with a sweetened profile without the use of sugar.[205] A variation on this Cordial Gin method rectified high-proof spirit with juniper ber-

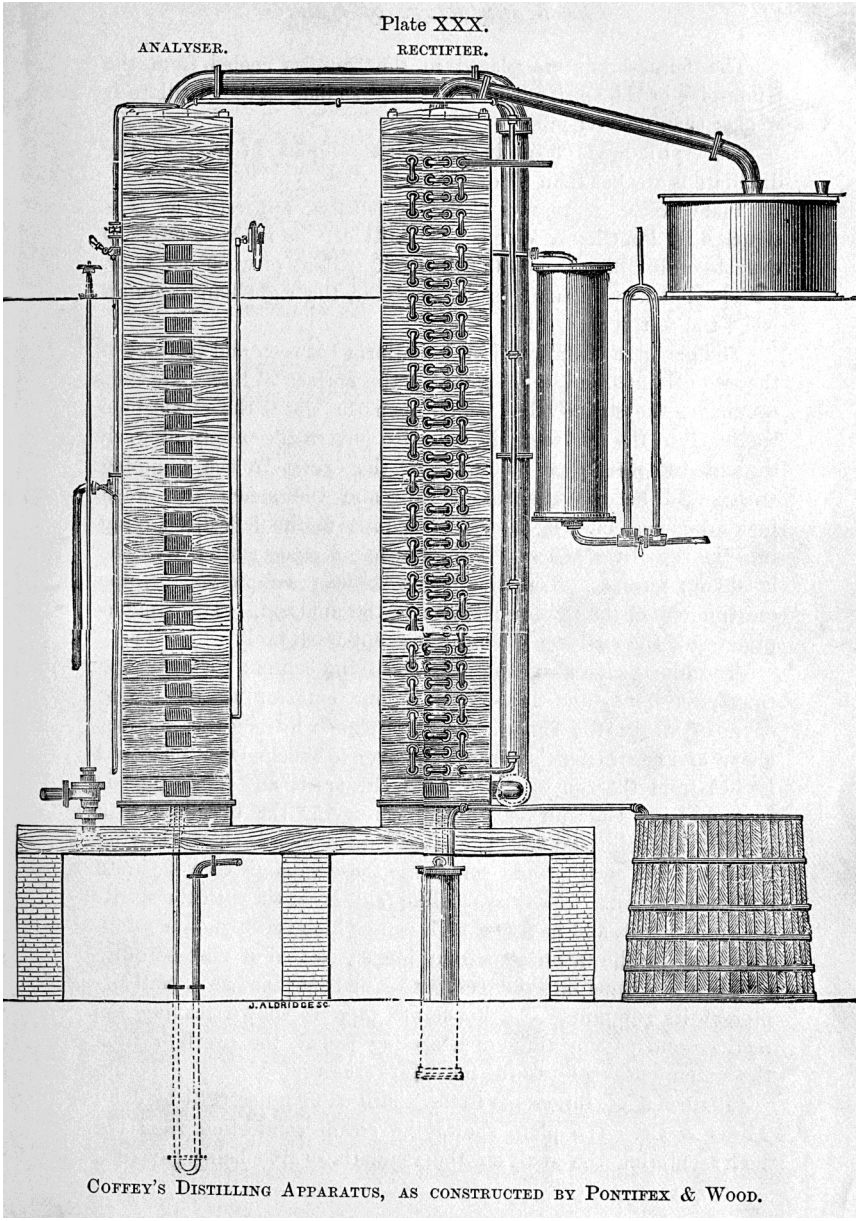


Figure 5. The Coffey still (Source: Science Photo Library).

ries, coriander seeds, orris root, and angelica root but enhanced the pungency of cardamom seeds with the inclusion of gingery calamus root.[206]

Muspratt's next two recipes are more familiar to today's palate. The Plain or London Gin formula follows the same pattern as the British Gin recipe but reduces the amount of almond cake.[207] Thus, the recipe rectified high-proof spirit with equal amount of German juniper berries and coriander seeds with almond cake, angelica root, and liquorice powder, the botanicals in Tanqueray gin. However, it does not bear as close a resemblance to the now-common formulation for London dry gin as Muspratt's Fine Gin recipe.[208] This rectification called for the redistillation of high-proof spirit with German juniper berries, a smaller portion of coriander seeds, grains of paradise, angelica root, orris root, calamus root, and orange peel. Optionally, liquorice was added 'to impart color and sweetness.' This recipe also harkens back to the recipe for *aqua fructum* mentioned earlier from the 1639 edition of *The Distiller of London*.

The sixth and final gin recipe in Muspratt's chapter — West Country Gin — was mentioned as being used to make "British hollands", rectifying high-proof spirit with juniper berries, calamus root, and sulphuric acid or oil of vitriol.[209] His recipe suggests that adulterated, cheaper versions of Geneva — spirits made with toxic elements used to replicate the spirituous heat found in all alcohols and to impart the pine aroma familiarly associated with juniper berries — were still manufactured long after the Gin Craze ended in western England. By contrast, Muspratt's making of Dutch hollands harkens back to the discussion of Dutch Geneva, involving distilling barley malt with ryemeal in water and yeast to which 'a few juniper berries and sometimes hops are added in the rectification to impart to the spirit a peculiar terebinthine [turpentine] flavor'. Again, this recipe when compared with Muspratt's other gin recipes is like juxtaposing bourbon whiskey and scotch whisky. In the end, Muspratt's six recipes demonstrate that any juniper berry predominant British spirit was called 'gin' by the mid-nineteenth century, regardless of other production factors. But his Fine Gin recipe and the Worshipful Company of Distillers of London's *aqua fructum* recipe provide compelling evidence that there was a distinct stylistic difference between Geneva and the complex spirit that evolved into London dry gin by the mid-nineteenth century.

Conclusion

While the Dutch origins of hopped beer, its importation, and eventual development into English beer are well founded in the historiography, this article offers compelling evidence that the Dutch did not play an active role in the emergence and evolution of English spirits during the late-medieval and early modern periods. In fact, the connection between German and English distillation is found to be much stronger, connected via a key alchemical book published by German botanist Hieronymous Brunschwig and translated into English by Laurens Andrewe. In the same manner that women brewed beer in both Germany and England, sixteenth- and seventeenth-century women also distilled spirits in both countries. In England, this is seen in domestic advice manuals and national legislation. As the distilling trade moved from the kitchen to distiller's shops and hot water houses as rising consumerism shifted public interest to new commercial commodities sold at retail, it also professionalised under the management of the Worshipful Company of Distillers of London. It is in the guild's manual of standardised recipes that the first glimpse of what became known as London dry gin — amongst other names — is found in the recipe for *aqua fructum*, which veers far from the English Geneva and genever recipes mentioned frequently in the historiography as modern-day gin's ancestors.

This guild also secured the connection between beer and spirits produced in England as both were made with malted grain and subjected to the national excise scheme from the mid-seventeenth century through the first quarter of the nineteenth century. While the excise scheme and the Gin Craze are frequently cited as the reasons for the decline in early modern beer production, excise reports suggest the balance between beer and spirit production shifted for more social reasons than economic or political. Even more, Peter Clark's conclusion that the Gin Craze ended and beer consumption revived thanks to the invention of new styles such as porter and stout as well as technological advancements in malting, hopping, and brewing.

The distilling trade again followed a similar pattern to brewing production when it also experienced an evolution in styles — as evidenced by James Sheridan Muspratt — and in still design advancements that led to a purer, higher-proof spirit that marked the rise of London dry and other modern-day gins. With this body of material, research into the rise of English craft beers and craft gins as well as their connections to these ancestral origins is highly encouraged to demonstrate a growing trend in returning to the roots of both trades.

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