THE
DISTILLER'S GUIDE;
COMPREHENDING THE WHOLE
ART
OF
DISTILLATION AND RECTIFICATION,
IN ALL ITS VARIOUS BRANCHES;
ALSO,
Genuine Recipes
FOR MAKING
RUM, BRANDY, HOLLANDS GIN,
AND ALL SORTS OF
COMPOUNDS, CORDIALS, AND SPIRITUOUS WATERS,
BY DISTILLATION, AGITATION, INFUSION, AND DIGESTION:
LIKEWISE SHOWING THE BEST
Method of distilling Simple Waters,
FROM FLOWERS, FRUITS, SPICES, AND AROMATIC PLANTS;
WITH
THE ART OF MAKING BRITISH WINES,
FROM
FRUITS, FLOWERS, AND HERBS, ALL OF THE NATIVE GROWTH OF GREAT BRITAIN.

PARTICULARLY OF

| Grapes, | Dewberries, | Damsoms, | Orange, |
| Gooseberries, | Apples, | Figs, | Sage, |
| Carrants, | Pears, | Roses, | Turnip, |
| Raspberries, | Cherries, | Cowslips, | Cyprus Wine, |
| Mulberries, | Peaches, | Scoury-grass, | Ditto imitated, |
| Elderberries, | Apricots, | Mint, | Gilliflower, |
| Blackberries, | Quinces, | Balm, | Mead, |
| Strawberries, | Plums, | Birch, | &c. &c. &c.

BY PETER JONAS,
LATE SUPERVISOR OF EXCISE, AUTHOR OF THE NEW ABRIDGMENT OF
THE LAWS OF EXCISE, THE ART OF GAUGING, ETC. ETC.

Third Edition.

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1818.
A FEW years ago the Author wrote and published two valuable works; the first was, "An Abridgment of all the Laws of Excise," the second, "A Treatise on the Art of Gauging," which works were highly approved and powerfully patronised. As such, it was suggested to the Author, by his friends in the distillery and the spirit trade, that a Treatise on Distillation and Rectification would be very useful, particularly so to young beginners. Agreeable to that suggestion, and with a view of rendering every service in his power to those gentlemen, he has published this Work. He has also added a complete set of genuine Recipes for making up all sorts of Compounds and fine Cordials, of every description, both by distillation, agitation, infusion, and digestion. He has endeavoured to show the best method to make Simple and Compound Waters for gentlemen's own use. He has, likewise, given a copious account of the culture and preparation of Foreign Wines and Brandies, and the best method of managing them when imported into these kingdoms; and laid down the genuine method of making British
Wines, from fruits, flowers, and herbs, all the growth of Great Britain.

It may be asked, What pretensions has the Author to attempt a task of such magnitude, the difficulty of which must be felt by every one who is acquainted with the extent of all his works and their complex nature? Without arrogating to himself superior abilities, he may be permitted to observe, that he was initiated into the revenue of Excise at the age of twenty-one, and remained in it near thirty years, as officer and supervisor. During his long continuance in the revenue, he never incurred the Honourable Board's displeasure; he had the advantage of being employed in ports of great and extensive trade, as London, Liverpool, Bristol, and Hull, where he always had distillers, spirit merchants, and sweetmakers, under his survey. He is also much indebted for the information he received from three eminent houses, whom he had the honour of surveying; viz. Messrs. Hatch and Co., Messrs. Metcalf and Co., malt distillers, Bromley, near Bow, and Messrs. Lush and Co., rectifiers, London. The two former houses are famous for malt distillation, and the latter house highly respectable for distilling fine cordials, compounds, &c. He has, likewise, been favoured with all the manuscripts of a deceased friend, who was well versed in the distillery in all its various branches, and was much esteemed for his knowledge. In addition to this, he has neglected no means of information, and spared no pains to obtain it from the most authentic sources. Hence he is induced to submit the result of his labours with confi-
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dence to the patronage of a candid public, from whom he doubts not its meeting a reception as favourable as it shall be found to deserve.

The following explanations may be of use to young gentlemen in the trade:

ALCOHOL properly signifies pure spirit, or spirit of wine rectified so highly as to be perfectly freed from any aqueous particles. As this, however, cannot be done in practice, it is commonly used for the most highly rectified spirit of wine.

SPIRIT OF WINE.—Any spirit, from the strength of 1 to 2, or 50 per cent. overproof, upward, is thus deemed by act of parliament.

BRITISH SPIRITS.—British Spirits of the third extraction, which have been twice distilled from low wines, and have had any flavour added, are deemed British brandy. And all British spirits twice distilled, that have had no flavour added, are deemed rectified British spirits. And all British spirits of the second extraction, are deemed raw British spirits. And all British spirits, which are distilled from juniper-berrys, caraway-seeds, aniseeds, &c. are deemed British compounds.

Note.—The various degrees of strength of spirit, either over or under proof, are expressed by numbers, with this distinction; namely, the former having the word to, and the latter that of in, inserted between the numbers expressing the quantity of liquor and that of spirit. Thus 1 to 2 over hydrometer proof implies, that one gallon of liquor with two gallons of spirit of that strength over proof, will make three gallons of proof spirit; and 1 to 3, that one gallon of
PREFACE.

liquor, being mixed with three gallons of that strength, will produce four gallons of proof spirit, &c. On the contrary, if a spirit be said to be of the strength of 1 in 2 under hydrometer proof, this signifies, that in every two gallons of such spirits there is one gallon of liquor, the other gallon being proof spirit; and when of the strength of 1 in 3, that in three gallons of the said spirit there is one gallon of liquor, the other two gallons being proof spirit; or ten gallons at 1 to 10 make eleven gallons when reduced to proof; but ten gallons at 1 in 10 contain only nine gallons of proof spirit; and so for every other strength.

All foreign spirits, found in the stocks of dealers or retailers, of a lower degree of strength than 1 in 6, are seizable; and all British spirits, found in such stocks, of a higher degree of strength than 1 in 5, are seizable also.
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A

KEY

to

THE DISTILLERY.

MALT DISTILLING.

THE PROCESS.

Take sixty quarters of barley grist, ground low, and thirty quarters of pale malt, grown rather coarse, make your lob with ten quarters of the malt ground into coarse flour, and thirty barrels of liquor, at the heat of 170 degrees; row or blend them into a uniform mass, and mix them thoroughly with the major part of the first wort, and pump them up together into the coolers; when cooled to
the temperature of 55 degrees, they are to be let down into the fermenting-back to the reserved part of the first worts, say, thirty barrels previously pitched at 60 degrees, with ten store of fresh porter yeast, which with the rest of the worts at 55 degrees, altogether compose a back of distillers' wash.

Take the specific gravity of the worts previous to their descent into the backs, and before any yeast is added, and note it down in a book or table prepared for that purpose; this do every twelve hours for three or four days, during which it may be found to increase in gravity and sweetness from the augmenting force of the fermentation; resolving the gluten, and extracting the saccharine matter. This is malting in the gyle-tun, or fermenting-back.

When the gravity seems to be stationary, or rather decreasing, a vinous tartness will begin to succeed the previous sweetness, the fermentation become
more vigorous, and the gravity more rapidly decrease; before it arrives at this period, a sensible decrease of gravity, and conspicuous change of flavour, from sweet to tart, usually takes place. Closely observe every change and appearance in the fermentation, and note it down in your book.

In the course of twelve or fourteen days the yeast head will fall quite flat, which denotes the fermentation being nearly over. If the heat appears by the thermometer to drop, and the fermentation has gone on well; or if the attenuation appears by the hydrometer, to have reduced the gravity of the wash from its original weight of twenty-eight, thirty, or greater number of pounds to two, three, or four pounds per barrel, and the wash should have a vinous odour and flavour, then all is right.

At this period some add twenty pounds of common salt, and thirty pounds of flour; rouse and keep the fermenting...
back close as it should have been during the whole process. In three or four days it will taste quite tart, and should be immediately distilled.

The officers of Excise estimate six gallons of the wash to produce one gallon of spirit, at one to ten over hydrometer proof, and compute that 90 quarters of grain, yielding about 279 barrels, or 9720 gallons of wash, produce 1623 gallons of spirit at one to ten over proof; that is, 18 gallons per quarter at that strength. This is estimating at 108 gallons, or three barrels of wash, to each quarter of grain, and taking the produce of spirit at 18 gallons per quarter, as before observed.

The wash, duly fermented, is committed to the still; all the time it is running in, it should be roused up, or agitated in the fermenting-back, by a stirring engine, to mix the thick and thin parts together into one mass, and enable it to be sufficiently fluid to flow into the still;
A KEY TO THE DISTILLERY. 5

where it is kept fluid by the stirring engine of the still, until it boils, when the agitation of the boiling usually keeps it from burning and emperumatic or burnt flavour to the low wines; which taint will inevitably rise from the low wines in the spirit still, during the doubling or distilling of the spirits of the second extraction.

This spirit is usually sold by weight, delivered to rectifying distillers at one to ten overproof, who rectifies or distils it over again, combining it with certain ingredients in order to clarify it from its gross oil and other impurities, with the view to render it fit for making into gin, brandy, rum, and fine cordial compound.

REPORT OF THE SUGAR COMMITTEE, 1808.

It appears from the evidence of Mr. Jackson, Commissioner of Excise, that the revenue received from the English Distillery amounts to upwards of £2,000,000 per annum, and is collected
A KEY TO THE DISTILLERY.

at a halfpenny in the pound; this revenue arises from a duty of 1s. 9d. per gallon on corn wash.

CORN WASH.

One quarter of malt will produce about 100 gallons of wash, and this 100 gallons of wash when distilled will produce about 19 gallons of spirits, at one to ten over hydrometer proof.

MOLASSES WASH.

One cwt. of sugar will produce 100 gallons of wash, and this 100 gallons of wash will produce from 21 to 22 gallons of spirit, at one to ten over hydrometer proof; the Excise Duty on this wash is 1s. 8d. per gallon.

METHOD OF FERMENTING AND DISTILLING MOLASSES IN GREAT BRITAIN AND IRELAND.

They set the backs in the former by adding two gallons of water and one of
molasses; in the latter they add three of water, to one gallon of molasses; to which (in both places) they add about one gallon of barm or yeast, to two hundred and sometimes to three hundred of molasses so mixed, these they blend with a large birch-broom uniformly together; this they call setting. This must be attended to once or twice a day, and the head stirred in or more barm added occasionally, or the air partially excluded to keep it warm if it works slow, and admitted fully if it works fast.

In three days, or four at most, the backs must be raised, by adding (in Great Britain) two gallons of water more to each gallon of molasses set; and (in Ireland) the same, consequently they work their wash one-fifth stronger in Great Britain than in Ireland; and when they wish to evade the duty of Excise, they work their wash still stronger; but this materially hurts the quality and quantity of the produce.

In the winter time the water added to
the backs should be heated to a degree below blood warm that the backs are raised with, which may be done by heating some water scalding hot, not boiling it, in one of the stills, and drawing as much in the filling-can as will heat the remainder of the cold water to the degree wanted. When the intended portion of water is added to each back, the same proportion of barm is to be added as at setting, and all well blended together with the broom, *this is termed raising*. The same, or rather more attention must be paid after setting, and barm added if necessary.

The third stage of fermentation is cutting; which is performed four, five, or even six days after raising, but is seldom deferred so long; it is done by adding about one ounce of good jalap-root in fine powder, to every eight or ten hundred weight of molasses, in summer, and about half as much more to the same quantities in winter, with the same proportion of barm, as at setting and raising;
which must be all blended together with the barm. This is called cutting the backs; which, indeed, it very effectually does, cutting down the head or crust of flowers or barm, which the intestine motion of the fermentation threw up, and communicating a very effectual and quick fermentessence through the whole fluid mass, very distinguishable at the top of the fluid to the sight, and also to the ear, the hissing of which can now be distinctly heard. As this tumultuous motion and hissing noise lessens, the operation draws towards a conclusion; and when they can be no longer distinguished, which is generally in three or four days after cutting, the fermentation is over, and the fermented wash is to be emptied into the still, and the backs set anew, as before directed. This fermented wash, distilled as long as a glass of it, thrown upon the still-head, will burn or take fire from a lighted paper or candle, is called low wines, or spirits.
of the first extraction. These low wines are kept for three distillations, which quantity generally fills the still; which is called doubling, or second extraction, and are drawn off as before directed. This spirit, lowered with water to the hydrometer standard, is called proof spirit.

After the setting of the backs, if an addition of the barm does not bring on a sensible fermentation through the whole, a five gallon can of warm spent wash, added to every two hundred gallons of the fermenting wash, will in general bring on the desired degree of fermentation; if not about half the quantity of jalap usually used in cutting the backs must be added now, and the other half at cutting the backs.

In winter, particularly in frosty weather, the part of the still house, where the fermentation is going on, must be heated to the temperature of temperate on the thermometer, which will much
facilitate the process. This may be done by the heat of the stills at work, in winter; and the excess of heat from the stills in summer may be counterbalanced by windows contrived to draw a current of air across the still-house.

N. B. Dr. Franklin has observed, that the wash in a distiller's vat, when in the highest and most perfect degree of fermentation, is about the temperature of animal heat; that is, from 90 to 96 degrees of Farenheit's thermometer.

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The Genuine Process of preparing Hollands, agreeable to the Practice of the best Dutch Distillers.

BREWING FOR HOLLANDS GIN.

Their grist is composed of ten quarters of malt, ground considerably finer than our malt distillers' barley grist, and three quarters of rye meal; or, more frequently, of ten quarters of rye and three quarters of malt meal. The ten quarters are
first mashed with the least quantity of cold water it is possible to blend it up with; when uniformly incorporated, as much boiling water is added as forms it into a thin bitter; it is then put into one, two, or more casks, or gyle tuns, with a much less quantity of yeast than is usually employed by our own distillers. Generally on the third day they add the malt or rye meal, previously made into a kind of lob, prepared in similar manner, except in not being so dilute; but not before it comes to the temperature of the fermenting wash; at the same time adding full as much yeast as when at first setting the backs.

The principal secret in the management of the mashing part of the business is, in first thoroughly mixing the malt with the cold water, that it may still remain sufficiently dilute after the addition of the fine meal, under the form of lob, and in well rousing all together in the back, that the wash may be dilute
enough for distilling, without endangering its burning to the bottom of the still. Thus they commodiously reduce the business of brewing and fermenting to one operation. By using cold water to uniformly wet the malt, all danger of clogging the spending of the tap would be necessarily avoided; but here, there is no occasion to do any thing more, than sufficiently dilute the wash, consisting of the whole of the grain, thin enough to be fermented and distilled together, by which means the spirit of the bran and husky part, as well as of the flour of the grain, are completely extracted, yet their wash, compared to ours, is about three-eighths thinner.

For these reasons, they obtain more spirit from their grain than we do, and of a better quality, with not half the trouble taken by our distiller. Their backs usually contain as much wash as serves for one distillation. The gravity of the distillers' wash at Weesoppe, in
the neighbourhood of Amsterdam, in 1804, weighed but eighteen pounds per barrel, very little more than half the gravity of ours. Their stills usually are from three to five hundred gallons each; they constantly draw off three cans of phlegm, after the runnings cease to burn on the head of the still, when distilling wash; and five cans distilling low wines; a practice we are unacquainted with, we usually drawing our fire as soon as the runnings from the still burn languidly on the still-head.

This, and the great quantity of rye they use, causes their spirit to be so much more acid; and the diluteness of their wash is a very good reason for the greater purity of their spirit; though most writers mistakenly say, our spirit is much clearer.

RECTIFICATION INTO HOLLANDS GIN.
To every twenty gallons of spirits of the second extraction, about the strength of
proof spirit, take three pounds of juniper-berries, and two ounces of oil juniper, and distil with a slow fire until the feints begin to rise, then change the receiving can; this produces the best Rotterdam gin. An inferior kind is made with a still less proportion of berries, sweet fennel seeds and Strasburgh turpentine, without a drop of juniper oil. It, and a better sort, but inferior to the Rotterdam gin, are made at Weesoppe.

The distillers' wash at Scheedam and Rotterdam are still lighter than at Weesoppe. Strasburgh turpentine is of a yellowish-brown colour, and very fragrant agreeable smell, its taste is the bitterest, yet the least acid of the turpentines. The juniper-berries are so very cheap in Holland, that they must have more reasons than mere cheapness for being so much more sparing of their consumption than our distillers. Indeed they are not in the habit of wasting any thing.
PREPARATION OF RUM IN THE WEST INDIES.

In the still-house, as well as the boiling-house, the greatest cleanliness is necessary; the vats, at the beginning of the crop, ought to be well washed out, both with warm and cold water, to divest them of any sour stuff which may have accumulated or adhered to their bottoms and sides since they were last in use; and if every vat, just before the first setting, or mixing the liquor in it, were to be rinsed with a little rum, I can venture to say, the distiller would be amply repaid for this trifling expense and trouble.

In setting the first round of liquor, a greater proportion of skimming from the sugar-pans must be used than will afterwards be necessary, as the distiller has no good *lees*, and very little *molasses* to add to the mass; and besides, the skimmings at this time are not so rich as they will be some time hence; that is, in March, April, and May, which are esteemed the
best yielding months. The following proportions will succeed well in the beginning: for every one hundred gallons your vat contains, put forty-five gallons of skimmings, and five gallons of molasses, to fifty gallons of water.

When you have got good lees, or returns as they are commonly called, mix equal quantities of skimmings, lees, and water, and for every one hundred gallons, add ten gallons of molasses.

When the mill is going, and therefore you have no skimmings, mix equal parts of lees and water, and for every hundred gallons, add twenty gallons of molasses.

From liquor set in these proportions, the distiller may expect to obtain from ten to fifteen per cent. of Leeward Islands proof rum, and twice as much low-wines. —But the quantity of spirit will depend greatly on the quality of the ingredients, and in some measure on the weather; therefore an intelligent distiller will vary his proportions accordingly.
THE DISTILLATION OF RUM IN THE WEST INDIES.

Rum differs from what we simply call sugar spirit, as it contains more of the natural flavour, or essential oil, of the sugar-cane; a great deal of raw juice, and even parts of the cane itself being often fermented in the liquor, or solution of which the rum is prepared.

From hence it is generally thought, that the rum derives its flavour from the cane itself.

Some, indeed, are of opinion, that the oily flavour of the rum proceeds from the large quantity of fat used in boiling the sugar.

This fat, indeed, if coarse, will give a rancid flavour to the spirit in our distillations of the sugar liquor, or wash, from our refining sugar-houses at home; but this is nothing like the flavour of rum.

Great quantities of rum are made at Jamaica, Barbadoes, Antigua, and other
sugar islands. The method of making it is this:

When a sufficient stock of materials is got together, they add water to them, and ferment them in the common method, though the fermentation is always carried on very slowly at first; because at the beginning of the season for making rum in the islands, they want yeast, to make it work; but after this, they, by degrees, procure a sufficient quantity of the ferment, which arises up as a head to the liquor in the operation; and thus they are able afterwards to ferment, and make their rum with a great deal of expedition, and in very large quantities.

When the wash is fully fermented, or to a due degree of acidity, the distillation is carried on in the common way, and the spirit is made up proof, though sometimes it is reduced to a much greater degree of strength, nearly approaching to that of alcohol or spirits of wine; and it is then called double distilled rum.
A KEY TO THE DISTILLERY.

It would be easy to rectify the spirit, and bring it to a much greater degree of purity than we usually find it to be of, if it did not bring over in the distillation so large a quantity of the gross oil, which is often so disagreeable, that the rum must be suffered to lie by a long time to mellow before it can be used; whereas, if well rectified, its flavour would be much less, and consequently much more agreeable to the palate.

The best state to keep rum, both for exportation and other uses, is doubtless in that of alkohol, or rectified spirits. In this manner, it would be contained in half the bulk it usually is, and might be let down to the common proof strength with water when necessary.

SUGAR SPIRIT.

We mean by a Sugar Spirit, that extracted from the washings, skimmings, dross, and waste of the boiling-house.
A KEY TO THE DISTILLERY. 21

These drossy parts of the sugar are to be diluted with water, fermented in the same manner as molasses or wash, and then distilled in the common method. And if the operation be carefully performed, and the spirit well rectified, it may be mixed with foreign brandies, and even coniac in a large proportion, to great advantage; for this spirit will be found superior to that extracted from treacle, and consequently more proper for these uses. In Barbadoes a very good spirit of this kind is prepared from the cane juice, called cane spirit, resembling very pure rum.

RAISIN SPIRITS.

By Raisin Spirit, we understand that extracted from raisins, after a proper fermentation.

In order to extract this spirit, the raisins must be infused in a proper quantity of water, and fermented.

When the fermentation is completed,
the whole is to be thrown into the still, and spirits extracted by a strong fire.

The reason why we here direct a strong fire, is, because by that means a greater quantity of the essential oil will come over the helm with the spirit, which will render it much fitter for the distiller’s purpose; for this spirit is generally used to mix with common malt goods: and it is surprising how far it will go in this respect, ten gallons of it being often sufficient to give a determining flavour, and agreeable vinosity, to a whole piece of malt spirit.

N. B. In the same manner a spirit may be obtained from cider. But its particular flavour is not so desirable as that obtained from raisins.

DISTILLERS FOR HOME CONSUMPTION.

All persons who shall sell liquors chargeable with duty, and distil spirits, are deemed common distillers. 2 Geo. III. c. 5.
Distillers having made entry, are to cause to be painted over the outer door of every still-house, &c. the word "Distiller," on penalty of 100l.; but if not having made entry, they cause the word "Distiller," to be painted over their doors, the penalty is 200l. 19 Geo. III. c. 50.

Are not to buy or receive any British spirituous liquors (except at Excise sales) or any persons other than distillers, rectifiers, compounders, having the word "Distiller, Rectifier, or Compounder," painted over their doors, on penalty of 500l. 21 Geo. III. c. 55.

A distiller selling British spirits, and having the word "Distiller" painted over his door, or buying of a person not having it so painted, either may inform against the other, and in that case discharges himself of the penalties. "Ibid. 39.

May extract spirits from any sort of grain, meal, or flour, unless it is prohibited by the King's proclamation during the recess of Parliament. 33 Geo. II. c. 9.
24 A KEY TO THE DISTILLERY.

Corn distillers, using molasses, coarse sugar, honey, or composition, or extract of sugar, in preparing wash for distillation, or in making low wines or spirits, or having above 10 lbs. thereof in their custody, incur a penalty of 100L. Servants assisting to use or bring in the same, incur the penalty of 20L. or for non-payment are to suffer three months imprisonment. 2 Geo. III. c. 70.

Are not to have any still or stills in their custody, unless the whole, being taken together, contain 100 gallons, on penalty of 100L. 2 Geo. III. c. 5.

Are not to have in their custody any wash-stills, containing less than 400 gallons, exclusive of the heads, nor any low wine stills containing less than 100 gallons, exclusive of the heads, on penalty of 100L. 14 Geo. III. c. 75.

Distillers from corn, during the time they shall work between the 15th day of November and the fifteenth day of May, are supposed to have charged their wash stills, in the proportion of three-fourths
A KEY TO THE DISTILLERY.

of their contents, including the heads, at the average of five times each week; and for the other part of the year in the same proportion, at the average of four times each week. 26 Geo. III. c. 63.

Are to be allowed a credit of twenty gallons of spirits for every hundred gallons of malt or corn wash, fifteen gallons for every hundred of cider wash, twenty-two gallons for every hundred gallons of molasses wash, and twenty gallons for every hundred gallons of wash from foreign wines or foreign cider, all at the strength of 1 to 10 over hydrometer proof.

For extracting more than nineteen gallons of spirits, at the strength of 1 to 10 over hydrometer proof, from one hundred gallons of wash, penalty 5s. per gallon above that proportion. 28 Geo. III. c. 46.

Are to paint or cut on some conspicuous part of every moveable cask, used for British brandy, compounds, or other spirits, the full measure in gallons, on penalty of 50l. 26 Geo. III. c. 38.
The Distiller's and Spirit Merchant's Directory.

In rectifying and distilling compound goods, a small still is known to make a cleaner and better commodity than one that is larger: and one that is half a hogshead gauge, is accounted the fittest size for a moderate trade; both as it may be managed without fatigue, and produces a good profit. But you must have regard to the laws of Excise, which says, No distiller or rectifier for sale, or dealer in spirits, shall have any still or stills, which separately or together shall contain less than 100 gallons, on pain of forfeiting 100%.; and such stills, containing separately less than 100 gallons, shall be placed in one room, under the like penalty. 2 Geo. III. c. 5.

All your spirits to be distilled should be proof goods, which you try by having a small quantity put into a glass phial, and shaking it with your hand; if the blebs, or proof of it, continues a pretty
A KEY TO THE DISTILLERY.

while upon the top or surface of the goods, it is then what is called proof goods (or you may try the strength by the hydrometer, which is the best way), and when it is distilled, it will yield about two-third parts of every thirty gallons, and sometimes full twenty gallons, according as the spirits are higher or lower proof; which you may make proof, or to what strength and weakness you please, by adding that proportion or quantity either of spring or river water, as is necessary thereto; as, for example, all double goods coming from the still, clear proof and without feints, must be made up with liquor to that quantity you charged your still with at first; as if with thirty gallons of proof spirits, it will yield (as above noted) about twenty gallons of high proof goods, the deficiency of ten gallons must be made up with liquor, till the whole amount to thirty gallons, your first charge; and in single goods you add one and an half part.
more of liquor (viz. fifteen gallons) to what is ordered in double goods, whereby you will have in all forty-five gallons of single goods: but if your spirits are below proof, upon your shaking the phial, or glass, the goods will fall flat, or the blebs or proof thereof will not continue on the surface of it; and according to the degree of its being reduced more or less below proof, the goods will flatten accordingly; and when such goods are distilled, they will fall short in quantity; and upon making them proof, and no otherwise, will you know what body they were of, and how far they were reduced, except by the hydrometer.

When your still is charged with goods for distilling, and luted, then make your fire under the still; which if possible must be of coals, because their heat is most durable, and wood fires are very subject to both extremes, of too much or too little heat, which are prejudicial and hazardous.

Let your fire be first pretty moderate,
and then by degrees increased, and now and then stirred up with your poker, and by laying your hand upon the body of your still, as the fire gains strength, in the stove or furnace under the still, you will by moderate degrees ascend up your still-head, occasioned by the goods in the still boiling higher and higher. When your still-head becomes warm or hot, then prepare a damp (which is to check or lessen the violence of the fire).

Take special care that no manner of grease, tallow, soap, or any other such-like unctuous matter, get or fall into your pieces, tubs, rundlets, or cans, because they quite take off all manner of proof of the goods, and although the strength be very high, yet they will apparently fall as flat as water, and then their strength can only be ascertained by the hydrometer.

Above all things beware of lighted candles, torches, papers, or other combustible matter, being brought too near your still, or any vessel where your goods
are contained, which are subject to take fire upon very slight occasions; as it is in itself most dreadful, being compared to fire and gunpowder. But should an accident take place, get immediately a woollen blanket or rug, drenched in water, and cast upon the flame, which extinguishes it by excluding the air.

When you are to distil, you are to make ready, against your still is charged, a paste made half of Spanish whiting, and the other half of rye-meal, bean-meal, or wheat-flour, well mixed together, and made into a paste with water, of the consistence of an ordinary paste for baking; and having put on your still-head, then take your paste, working and making it pliable with the heat of your hands, and spread it upon the junctures of the body and head of your still, to keep in the goods from boiling over; reserve a piece of paste, lest the using should crack or break out, which is very dangerous.
HIPPOCRATES'S BAG, OR FLANNEL-SLEEVE,

Is very necessary for a distiller or brandy merchant, whereby all bottoms of casks, though ever so thick and feculent, by putting into this bag to filter, become presently clear, the porous parts of the said bag being soon filled with grosser matter; and the thin or liquid element runs clear from the bag, and is as good as any of the rest: also any foul goods or liquor may presently be made clear and fine, by putting some powdered alabaster into the goods or liquor, or sprinkling the same on the bag to stop up its pores, by which they presently become, or run clear, leaving nothing but the sediment or gross matter in the bag; nor do the goods or liquor contract the least ill-flavour from the said alabaster-powder.

The said bag is made of a yard or ell of flannel, not over fine or close-wrought,
laid sloping, so as to have the bottom of it very narrow, and the top as broad as the cloth will allow, well sewed up the side, and the upper part of the bag folded about a broad wood hoop, and well fastened to it; then boring the hoop in three or four places, it may be suspended by a cord.

But the bottoms of fine goods, which are much more valuable, must be filtered or put through blotting-paper, folded in four parts, one part or leaf to be opened funnel-wise, and made capable to receive what it will hold of the bottoms, being put into the upper part of a large tin funnel; which will filter off all the goods from the sediment.

All brandies, whether French, Spanish, or English, being proof goods, will admit of one pint of liquor to each gallon, to be made up and incorporated therewith in your cask, for retail, or selling smaller quantities; and all persons that insist upon having proof goods,
which not one in twenty understand, you must supply out of what goods are not so reduced, though at a higher price.

For all goods which are high proof are cleaner, and have a better flavour, than the same goods will have when they are reduced.

It is a custom among some gentlemen of the trade to put one-third or one-fourth part of proof molasses brandy, proportionably to what rum they dispose of; which cannot be distinguished but by an extraordinary palate, and does not at all lessen the body, or proof of the goods, but makes them about two shillings a gallon cheaper, and must be well mixed together in your retailing cask; but you should keep some of the best rum, not adulterated, in order to please your customers, whose judgments and palates must be humoured.

When you have a mind to recover any goods to a better body or strength, which are too low or weak, if they be
brandies, rums, or fine cordial waters, you must put a proper quantity, by little and little at a time, of spirit of wine to the goods, mixing or stirring them very well together, and often trying them, until you have perfectly restored them to the proof you desire; which may be done with little or no loss; because the spirit of wine stands you in but about the same price with the cordials, and cost less than some of your brandies.

If you want to recover or amend any of your common waters, or genevas, you must put such a quantity of proof or double goods of the same kind or denomination to the other, as the price will bear, or will answer your intentions, by such composition or mixture. If by putting proof and weak goods together, the colour or face of the goods be spoiled, which before their being mixed together were both fine, as it frequently happens, you must clear and fine them, as you do when they are
newly distilled; or if you cannot stay their settling, then cast about a pound of alabaster-powder into your mixed goods, to stop up the porous parts of the flannel sleeve, which fines them immediately.

If by chance or accident any goods happen to be spoiled in their complexion, so as to become not saleable, as sometimes, especially in genevra, comes to pass; or were they by some ingredients to be turned black as ink; (an iron nail will also turn them black should it happen to drop into the cask) you must then distil them over again, only putting half the quantity of the ingredients as usual; and they will come perfectly fine as rock-water from the still, and must be dulcified according to their quantity, just as they were at their first being made. But the goods, notwithstanding the misfortune they met with, will be much better than they were at their being first made, as you receive so