WINE.

Let it stand ten days, then draw it off for use.

No. 41.—STRAWBERRY WINE.

To 20 gallons pure spirits add:—
  8 gallons water.
  20 quarts strawberries, (the juice.)
  10 pounds loaf sugar.
  2 gallons good Sherry wine.
  1 ounce tartaric acid.

Let it stand one week, and draw it off ready for use.

No. 42.—STRAWBERRY WINE.

To 10 gallons pure spirits add:—
  10 gallons water.
  20 quarts strawberries, (the juice.)
  15 pounds loaf sugar.
  2 gallons good brandy.
  2 ounces cream of tartar.

Let it stand one week, and draw it off.
No. 43.—ELDER WINE.

To 20 gallons pure spirits add:—
8 gallons water.
20 quarts elder-berries, (the juice.)
20 pounds loaf sugar.
2 gallons good brandy.
2 ounces tincture kino.

Let it stand one week, and draw it off ready for use.

No. 44.—ELDER WINE.

To 10 gallons pure spirits add:—
10 gallons water.
20 quarts elder-berries, (the juice.)
15 pounds loaf sugar.
2 gallons Port wine.
½ pint orange-flower water.

Let it stand one week, then draw off.

No. 45.—ELDER WINE.

To 40 pounds elder-berries add:—
12 gallons water.
WINE.

30 pounds loaf sugar.
½ pound cream of tartar.
3 gallons good brandy.
Let it stand one week, and draw off.

No. 46.—MORELLO-CHERRY WINE.

To 20 gallons pure proof-spirit add:—
  10 gallons water.
  30 pounds loaf sugar.
  20 quarts Morello cherries, (the juice.)
  2 gallons good Port wine.
Let it stand one week, and then draw off.

No. 47.—MORELLO-CHERRY WINE.

To 10 gallons pure spirits add:—
  10 gallons water.
  25 pounds loaf sugar.
  20 quarts Morello cherries, (the juice.)
  2 gallons good brandy.
  1 ounce tartaric acid.
  ½ pint orange-flower water.
Let it stand one week, and draw off.
No. 48.—MORELLO–CHERRY WINE.

To 40 pounds Morello cherries add:—

12 gallons water.
30 pounds loaf sugar.
¼ pound cream of tartar.
3 gallons brandy.

Let it stand one week, and draw off.

Gooseberry, Whortleberry, Apple, Mulberry, Apricot, Grape, and Damson wine may be made after the formulæ last given, by substituting any of the above fruits in place of those mentioned in the formulæ.

The advantage in making domestic wines after the manner recommended is having a wine ready for use in a week; whereas, according to the general formula next given, a long time is required before the wine is fit to use. The reader may make his own choice.
GENERAL FORMULA

for

Currant, Cherry, Elder, Strawberry, Raspberry, Mulberry,
Blackberry, Grape, Whortleberry,

or other fruit.

The berries must be ripe. Measure them, and to every quart of fruit allow a quart of clear soft water. Boil the water. Put the fruit into a clean tub, and mash it with a wooden masher. When the water has boiled, pour it on the fruit, and let it stand till next morning in a cool place, agitating the mass occasionally. Then press out all of the juice; measure it, and to every quart of liquid allow half a pound of sugar. Put the sugar into a cask, and strain the liquid upon it through a linen bag. Agitate the liquor until the sugar is dissolved. Let the cask remain open until the liquor has done working. Then add half
an ounce of isinglass, or an ounce of gum-arabic dissolved in a pint of hot water; or, instead, use the whites of four eggs. Keep open till the next day. Then bung it, and, in two or three months, bottle it, and follow the instructions under the head of wines.
with a ferment it undergoes the vinous fermentation, which has already been explained. Its addition to liquors renders them less fiery, softer and richer.

*Volatile oil* is an oil obtained from the distillation of brandy from wine. It is of such strength that a few drops will impart its odor to a pipe of pure spirits. It is known among dealers as "Oil of Cognac."

*Acetic acid* is the acidifying principle of common vinegar. It is distinguished from all the other acids by its flavor, odor, and volatility. It is generated during the destructive distillation of vegetable matter, and is an abundant product of the acetous fermentation.

*Acetic ether* is a colorless liquid, of an agreeable but burning taste, and a very fragrant odor. It is soluble in seven or eight times its weight of water at 60°, and in all proportions in alcohol. It may be formed by distilling strong acetic acid with an equal weight of alcohol.
Aëranthie acid is an oily liquid, procured in the distillation of wine, as well as by submitting wine lees to distillation. The acid, as before remarked, is analogous to the fatty acids, is perfectly white when pure, and dissolves in alcohol and ether.

Aëranthie ether is colorless, has an extremely strong smell of wine, and a powerful, disagreeable taste.

Tannic acid, when pure, is colorless and odorous, and has a purely astringent taste without any bitterness. It is soluble in ether, alcohol, and water. It exists in a large number of vegetables, including the grape husks, and is thus obtained as one of the constituents of brandy, having become incorporated by fermentation with wines.

The reader will, by this time, perceive the necessity of being acquainted with the constituents of pure French brandy, and will readily understand that, as proof-spirit (which is composed, as before stated, of half water and
half absolute alcohol,) is of about the same strength as pure foreign brandy, and, if tasteless and inodorous, is precisely the same spirit as pure foreign brandy would be were it deprived of the oils, acids, and other constituents before mentioned, it plainly follows that, by taking a certain quantity of pure spirits—whether a few degrees above or below proof—and adding to that spirits the proper proportion of the volatile oil, acetic acid, acetic ether, oenanthic acid, and tannic acid, with the coloring matter found in every pure foreign brandy, you at once produce the article in all its purity, rendering it almost impossible for the most experienced dealer or the most skillful chemist to detect the imitation. The reason is, you have manufactured an article possessing all the constituents and properties, with the fragrance and aroma of the best French brandies, and far superior to the diluted and adulterated brandies now brought from European ports.

You have now been made acquainted with the basis for making pure French brandy,
which is any pure proof-spirit, whether distilled from corn or rye; as likewise with the constituents to be combined with the proof spirit for that purpose. All that remains is to acquaint you with the quantities or proportions of the different ingredients, so as to insure success; skill, care, and attention being all that is required, and a faithful observance of the rules and formulæ here given. Your own judgment must be your guide in regard to fragrance, flavor, color, etc. A specimen of the liquor to be imitated will always prove valuable in directing your judgment. The different proportions may be varied in some instances. Thus, if you wish a very high flavor, add more of the oil of Cognac; if more odor, use more oenanthic acid; if too fiery, add more sirup or sugar. But the reader will find that, as a general thing, the formulæ here given cannot be improved on, as experience has demonstrated their proportions to be the true ones for producing the best imitations of pure foreign brandies that have ever been made in this country.
No. 1.—COGNAC BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
5 gallons pure Cognac brandy.
1½ ounces oil of Cognac.
½ ounce oenanthic acid.
½ ounce acetic ether.
1½ ounce tincture kino.
1 pint simple sirup.

Color with caramel, or burnt sugar, to the desired tint or shade. It may be used immediately, although, after thoroughly agitating, it is better to let it stand a fortnight.

No. 2.—COGNAC BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
4 gallons pure Cognac brandy.
1 ounce oil of Cognac.
1 ounce oenanthic acid.
½ ounce acetic acid.
½ ounce acetic ether.
1 ounce tincture kino.
1 pint simple sirup.
BRANDY.

Mix thoroughly, color, and manage as in No. 1.

No. 3.—COGNAC BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
3 gallons pure Cognac brandy.
1½ ounces oil of Cognac.
1 ounce cænanthic acid.
½ ounce acetic ether.
½ ounce acetic acid.
2 ounces tincture kino.
1½ pounds loaf sugar.
Color, and manage as in No. 1.

No. 4.—COGNAC BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
2 gallons pure Cognac brandy.
1½ ounces oil of Cognac.
1½ ounces cænanthic acid.
1½ ounces acetic ether.
2 ounces tincture kino.
1½ pints simple sirup.
Color, mix, and manage as in No. 1.
No. 5.—ROCHELLE BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
5 gallons pure Rochelle brandy.
1½ ounces oil of Cognac.
1½ ounces oenanthic acid.
1 ounce acetic ether.
½ ounce acetic acid.
4 ounces tincture kino.
1½ pints simple sirup.

Color, mix, and proceed as in No. 1.

No. 6.—ROCHELLE BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
4 gallons pure Rochelle brandy.
1½ ounces oil of Cognac.
2 ounces acetic ether.
1 pint simple sirup.
2½ ounces tincture kino.
1 ounce oenanthic acid.

Mix, color, and proceed as laid down in No. 1.
No. 7.—ROCHELLE BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
3 gallons pure Rochelle brandy.
1 ounce oil of Cognac.
2½ ounces acetic ether.
3 ounces tincture kino.
1½ pints simple sirup.
4 ounce oenanthic acid.

Mix, color, and proceed according to formula No. 1.

No. 8.—ROCHELLE BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
2 gallons pure Rochelle brandy.
1½ ounces oil of Cognac.
1½ ounces oenanthic acid.
3 ounces acetic ether.
3 ounces tincture kino.
4 pounds loaf sugar.

Mix, color, and proceed according to formula No. 1.
BRANDY.

No. 9.—BORDEAUX BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
5 gallons pure Bordeaux brandy.
1½ ounces oil of Cognac.
1½ ounces oenanthic acid.
3½ ounces acetic ether.
2 ounces tincture kino.
2 pints simple sirup.

Mix, color, and proceed according to formula No. 1.

No. 10.—BORDEAUX BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
4 gallons pure Bordeaux brandy.
1½ ounces oil of Cognac.
1 ounce oenanthic acid.
1 ounce acetic acid.
2 ounces acetic ether.
3 ounces tincture kino.
1½ pints simple sirup.

Mix, color, and proceed according to formula No. 1.

8*
BRANDY.

No. 11.—ARMAGNAC BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
5 gallons pure Armagnac brandy.
1 ounce oil of Cognac.
1 ounce oenanthic acid.
1 ounce acetic ether.
2 ounces tincture kino.
3 pounds loaf sugar.
Mix, color, and proceed as in No. 1.

No. 12.—ARMAGNAC BRANDY.

To 20 gallons pure spirits (10 o. p.) add:—
4 gallons Armagnac brandy.
4 ounce oil of Cognac.
1½ ounces oenanthic acid.
2 ounces acetic ether.
1 pint simple sirup.
1½ ounces tincture kino.
Color, mix, and proceed as in No. 1.
REDUCED BRANDIES.

No. 13.—COGNAC BRANDY.

To 20 gallons pure proof-spirits add:—
5 gallons pure Cognac brandy.
1 ounce tincture kino.
2 pints simple sirup.

Color with sugar coloring. It may be used immediately, but is better if allowed to stand ten days.

No. 14.—COGNAC BRANDY.

To 20 gallons pure proof-spirits add:—
3 gallons pure Cognac brandy.
1 ounce acetic ether.
2 pints simple sirup.
2 ounces tincture kino.

Color, and manage as No. 13.
BRANDY.

No. 15.—COGNAC BRANDY.

To 20 gallons pure proof-spirits add:—
2 gallons pure Cognac brandy.
2 ounces tartaric acid.
4 pounds bruised raisins.
1 ounce acetic ether.
2 ounces tincture kino.

Color as before. Let it stand ten days, and then draw off.

No. 16.—COGNAC BRANDY.

To 20 gallons pure proof-spirits add:—
1 gallon pure Cognac brandy.
5 pounds bruised raisins.
1 ounce acetic acid.
4 pounds loaf sugar.
2 ounces tincture catechu.

Color and manage as in No. 15.

No. 17.—ROCHELLE BRANDY.

To 20 gallons pure proof-spirits add:—
BRANDY.

5 gallons Rochelle brandy.
3 pounds loaf sugar.
Color, and allow it to stand ten days, though it may be used sooner.

No. 18.—ROCHELLE BRANDY.

To 20 gallons pure proof-spirits add:—
3 gallons pure Rochelle brandy.
1 ounce acetic ether.
1 pint sirup.
3 ounces tincture kino.
Color as before, and proceed as in No. 17.

No. 19.—ROCHELLE BRANDY.

To 20 gallons pure proof-spirits add:—
2 gallons Rochelle brandy.
4 pounds raisins.
4 ounces tincture kino.
1 pint sirup.
1 ounce acetic ether.
Color, and manage as laid down in formula No. 17.
BRANDY.

No. 20.—ROCHELLE BRANDY.

To 20 gallons pure proof-spirits add:—
1 gallon pure Rochelle brandy.
1½ ounces acetic ether.
1 ounce acetic acid.
4 ounces tincture kino.
1½ pints simple sirup.

Color, and proceed as in No. 17.
CHEAPEST BRANDIES.

No. 21.—COGNAC BRANDY.

To 20 gallons pure proof-spirits add:—

2 ounces acetic ether.
2 ounces acetic acid.
2½ ounces tincture kino.
5 pounds bruised raisins.
2 pints simple sirup.

Color with sugar coloring; let it stand twelve days, and draw it off.

No. 22.—COGNAC BRANDY.

To 20 gallons pure proof-spirits add:—

2 ounces tartaric acid.
6 pounds bruised raisins.
3 ounces tincture kino.
1 ounce acetic ether.
1 ounce acetic acid.
5 pounds loaf sugar.
Color with burnt sugar as before; let it stand twelve days, and draw it off.

No. 23.—ROCHELLE BRANDY.

To 20 gallons pure proof-spirits add:—

3 ounces tincture catechu.
1 ounce tincture kino.
4 pounds loaf sugar.
2½ ounces powdered orris-root.
8 ounces crude tartar.
3 ounces acetic ether.

Color, and manage as No. 21.

No. 24.—ROCHELLE BRANDY.

To 20 gallons pure proof-spirits add:—

6 pounds bruised raisins.
2 ounces acetic ether.
1 ounce acetic acid.
2 ounces cassia-buds, ground.
2 pints simple sirup.
2 ounces tincture kino.
2 ounces tincture catechu.

Color, and manage as No. 21.
FANCY BRANDIES.

Fancy brandies are liquors made by uniting with pure spirits (which exist in all brandies) some aromatic, acidulous, or other ingredient, combined with a certain proportion of sugar or sirup, the peculiar taste or fragrance of which is imparted to the liquor; from which circumstance the different fancy brandies derive their names. Fancy brandies are much sought after, and the sales of some houses are very large.

The formule for the manufacture of these brandies are far superior to any that have ever before been published.

A large majority of retailers, and of those who use these brandies as a beverage, prefer them well sweetened. The maker can, at his own pleasure, add a large or small quantity of sugar or simple sirup. The other ingredients
should be added according to the directions hereafter given, and care taken that the whole be thoroughly incorporated, so as to insure a fine, clear, transparent brandy.

No. 25.—BLACKBERRY BRANDY.

To 20 gallons pure spirits add:—
24 quarts blackberries.
8 gallons water.
12 pounds loaf sugar.
½ ounce unground cloves.
1 ounce unground cinnamon.
Let it stand twenty days, draw off, strain and fine if necessary.

No. 26.—BLACKBERRY BRANDY.

To 20 gallons pure spirits add:—
16 quarts blackberries.
5 gallons water.
16 pounds sugar.
6 drops oil of cloves, cut in 1 pint
6 drops oil of cinnamon, alcohol.
BRANDY.

Let it stand sixteen days, draw off, strain and fine if necessary.

No. 27.—BLACKBERRY BRANDY.

To 20 gallons pure proof-spirits add:—

5 gallons raspberry brandy.
4 gallons water.
10 pounds sugar.
1 ounce tincture cassia.
1 ounce tincture cardamom-seed.

Color, and let it stand ten days; draw off, and it is ready for use.

No. 28.—RASPBERRY BRANDY.

To 20 gallons pure proof-spirits add:—

25 quarts raspberries.
4 gallons water.
12 pounds loaf sugar.
1 ounce unground cloves.
1 ounce unground cinnamon.

Proceed according to the directions laid down in No. 25.
No. 29.—RASPBERRY BRANDY.

To 20 gallons pure proof-spirits add:—
5 gallons water.
16 quarts raspberries.
1 ounce tartaric acid.
6 drops oil of cloves,
6 drops oil of cinnamon, \{ cut in alcohol.
16 pounds loaf sugar.

Let it stand twenty days, and manage as in No. 25.

No. 30.—RASPBERRY BRANDY.

To 20 gallons pure proof-spirits add:—
5 gallons blackberry brandy.
4 gallons water.
6 pints simple sirup.
1 ounce tartaric acid.
1 ounce tincture cardamom-seed.
1 ounce tincture cinnamon.

Color if necessary; let it stand ten days, and draw off. It is then ready for immediate use.
No. 31.—CHERRY BRANDY.

To 20 gallons pure proof-spirits add:—
25 quarts wild cherries, bruised. Let it stand six days, strain it, and add:—
12 pounds loaf sugar.
4 gallons water.

Let it stand eight days, draw off, and fine if necessary.

No. 32.—CHERRY BRANDY.

To 20 gallons pure proof-spirits add:—
3 drachms essential oil of bitter almonds, cut in 1 quart alcohol.
15 pounds sugar.
1 ounce tartaric acid.
5 gallons water.

Color very dark with sugar coloring. Let it stand five days, and it will then be ready for use.
No. 33.—CHERRY BRANDY.

To 20 gallons pure proof-spirits add:—
10 gallons water.
2 drachms oil of bitter almonds, cut in
1 pint alcohol.
30 pounds loaf sugar.
1 ounce tincture cardamom-seed.
1 ounce tincture cinnamon.

Mix well, and color dark with sugar coloring.
Let it stand twelve days, and draw off.

No. 34.—CHERRY BRANDY.

To 20 gallons pure proof-spirits add:—
4 gallons water.
18 pounds sugar.
1 pound bruised bitter almonds.
1 ounce tincture cardamom-seed.
1 ounce tartaric acid.
½ pint orange-flower water.

Color dark with sugar coloring. Let it stand
twenty-five days, and draw off.
BRANDY.

No. 35.—PEACH BRANDY.

To 20 gallons pure proof-spirits add:—
6 gallons good peach brandy.
4 pounds loaf sugar.
½ drachm essential oil of bitter almonds, cut in alcohol.
½ pint orange-flower water.
Color; let it stand six days, and it is ready for use.

No. 36.—PEACH BRANDY.

To 20 gallons pure spirits add:—
2 gallons peach brandy.
1 drachm essential oil of bitter almonds, cut in alcohol.
3 pounds loaf sugar.
Let it stand three days, and it is ready for use.

No. 37.—ROSE BRANDY.

To 20 gallons pure proof-spirits add:—
5 gallons water.
20 pounds sugar.
30 drops oil of roses, cut in 1 pint alcohol.
½ ounce tartaric acid.

Color with red sanders or tincture of rhatany.
Let it stand five days, and it is ready for use.

No. 38.—ROSE BRANDY.

To 20 gallons pure proof-spirits add:—
  8 gallons water.
  10 pints sirup.
30 drops oil of roses, cut in 1 pint alcohol.
  1 ounce tartaric acid.

Color as in No. 37, and let it stand five days.

No. 39.—LEMON BRANDY.

To 20 gallons pure proof-spirits add:—
  20 lemons, sliced.
  16 pounds sugar.
  ½ pound lemon peel.
  ½ ounce crushed nutmeg.

Let it stand ten days, and draw off.
BRANDY.

No. 40.—LEMON BRANDY.

To 20 gallons pure proof-spirits add:—
15 lemons, sliced.
12 pounds sugar.
½ pound lemon peel.
1 quart good brandy.
Let it stand ten days, and draw off.

No. 41.—ORANGE BRANDY.

To 20 gallons pure proof-spirits add:—
25 oranges, sliced.
15 pounds loaf sugar.
1 quart good brandy.
Let it stand fourteen days, and draw off.

No. 42.—ORANGE BRANDY.

To 20 gallons pure proof-spirits add:—
18 oranges, sliced.
12 pounds sugar.
1 quart brandy.
1 ounce tartaric acid.
Let it stand ten days, and draw off.
No. 43.—PINE–APPLE BRANDY.

To 20 gallons pure proof-spirits add:—
  10 pine-apples, sliced.
  14 pounds loaf sugar.
  2 quarts good brandy.
  1 ounce tincture saffron.

Let it stand ten days; then draw it off ready for use.

No. 44.—PINE–APPLE BRANDY.

To 20 gallons pure proof-spirits add:—
  8 pine-apples, sliced.
  6 pints simple sirup.
  1 quart good brandy.
  1 ounce cassia.
  1 ounce tincture saffron.
  4 gallons water.

Proceed as in No. 43.

No. 45.—CARAWAY BRANDY.

To 20 gallons pure proof-spirits add:—
  10 gallons water.
BRANDY.

3 pounds caraway-seed, bruised.
1 gallon good brandy.
½ pint orange-flower water.
25 pounds loaf sugar.

Mix, color, and let it stand fourteen days; then draw off ready for use.

No. 46.—GINGER BRANDY.

To 20 gallons pure proof-spirits add:—
1 ounce tincture cardamom-seed.

Take ½ pound bruised ginger root, digested in ½ gallon strong alcohol for six days. Add the liquor, after having been filtered, to the pure spirits, agitating it thoroughly. Then add:—

5 gallons pure soft water.
1 gallon simple sirup.

Color with sugar coloring ready for use. If more flavor is required, use more ginger; if sweetness is wanted, use more sirup.
No. 47.—LAVENDER BRANDY.

To 20 gallons pure proof-spirits add:

2 drachms oil of lavender, cut or dissolved for twelve hours in strong alcohol.

6 gallons pure soft water.

1 ounce tincture cinnamon.

1 gallon simple sirup.

Color with sugar coloring, adding more lavender or sirup, if more flavor or sweetness is required.
GIN.

GIN, or GENEVA, from Genievre, (Juniper,) is a kind of ardent spirits manufactured in Holland, therefore called Hollands Gin in this country, being different from the gin manufactured in Great Britain; and both the Hollands and British gin differing entirely from the article generally sold by dealers under the name of gin, or Hollands gin,—the latter being generally nothing but pure spirits, flavored with juniper, turpentine, and small quantities of some of the aromatics, etc.

Schiedam Hollands has the reputation of being the best gin, and consequently commands the highest price. Rotterdam is likewise a fine article.
The peculiar and excellent flavor of Hollands gin, or spirits, depends on the particular mode of its manufacture, and not, as many suppose, on the large or small quantity of juniper-berries employed, its flavor differing materially from the flavor extracted from juniper. A large majority of the Dutch distillers combine a little Strasburg turpentine and a small quantity of hops with the juniper-berries before rectification, the fine aroma which distinguishes the best gin being partly due to the turpentine employed.

"The material employed in the distilleries of Schiedam are, two parts of unmalted rye from Riga, weighing about 37 pounds per bushel. The mash tun, which serves also as the fermenting tun, has a capacity of nearly seven hundred gallons, being about five feet in diameter at the mouth, rather narrower at the bottom, and four and a half feet deep; the stirring apparatus is an oblong rectangular iron grid, made fast to a wooden pole. About a barrel—
GIN.

36 gallons—of water, at a temperature of from 162° to 168°, (the former heat being best for the most highly-dried rye,) is put into the mash tun for every 1½ cwt. of meal, after which the malt is introduced and stirred, and lastly the rye is added. Powerful agitation is given to the magma, till it becomes quite uniform, a process which a vigorous workman piques himself upon executing in the course of a few minutes. The mouth of the tun is immediately covered over with canvas, and further secured by a close, wooden lid, to confine the heat. It is left in this state for two hours. The contents being then stirred up once more, the transparent spent-wash of a preceding washing is first added, and next as much cold water as will reduce the temperature of the whole to about 85° Fahr. The best Flanders yeast, which had been brought for the sake of carriage to a doughy consistence by pressure, is now introduced to the amount of one pound for every one hundred gallons of the mashed ma-
terial. The gravity of the fresh wort is usually from thirty-three to thirty-eight pounds, per Dycas's hydrometer; and the fermentation is carried on from forty-eight to sixty hours, at the end of which time the attenuation is from seven to four pounds,—that is, the specific gravity of the supernatant wash is from 1.007 to 1.004.

"The distillers are induced, by the scarcity of beer barm in Holland, to skim off a quantity of the yeast from the fermenting tuns, and to sell it to the bakers, whereby they obstruct materially the production of spirits, though they probably improve its quality, by preventing its impregnation with yeast particles—an unpleasant result, which seldom fails to take place in the whiskey distilleries of the United Kingdom.

"On the third day after the fermenting tun is set, the wash containing the grains is transferred to the still, and converted into low wines. To every one hundred gallons of this
liquor two pounds of juniper-berries, from three to five years old, being added, along with about one-quarter pound of salt, the whole is put into the low wine still, and the fine Hollands spirits is drawn off by a gentle and well-regulated heat, till the magma becomes exhausted, the first and the last products being mixed together, whereby a spirit of two to three per cent. above our hydrometer proof is obtained, possessing the peculiarly fine aroma of gin. The quantity of spirit varies from eighteen to twenty-one gallons per quarter of grain; this large product being partly due to the employment of the spent wash of the preceding fermentation, an addition which contributes at the same time to improve the flavor."—(Ure's Arts and Manuf.)

"Robert Moore, Esq., distiller, formerly of Underwood, after studying the art at Schiedam, tried to introduce that spirit into general consumption in England, but found the palates of
the gin-drinkers too much corrupted to relish so pure a beverage."

Gin has thus far proved more difficult to imitate than any of the other liquors, it being almost impossible to impart the exact flavor of the true Hollands gin to any of its imitations. The author of this work has, however, been so fortunate as to succeed in making an imitation out of pure spirits, which has been pronounced by good judges a genuine article.

There is more care required in combining the proper quantities of the different ingredients, in making imitations of Hollands gin, than in the imitations of wines and brandies, so as to insure the peculiar flavor, creaminess, and smoothness of the real article. The reader will find the imitations of gin made in accordance with the formulæ hereafter given superior to most of the gins furnished to dealers, they being either too much reduced, or, if imitations, too highly flavored— it being necessary, in securing a good imitation, to guard against both extremes.
GIN.

One great difficulty in *imitating* gin is the want of skill in the operator. Unless this is possessed, he had better depend upon *reducing* with pure spirits, as given in the formulæ for *reduced gins*. After having acquired the requisite skill, by experimenting in a small way, he can then go on with the *imitations of pure gin*. 
IMITATIONS OF GIN.

No. 1.—GIN.

To 20 gallons pure spirits (5 o. p.) add:—
5 gallons gin, to be imitated; then take
1 pound juniper-berries.
2 drachms caraway-seed.
½ ounce spirits nitre.
1 drachm pure oil of turpentine.

Digest for eight days in 1 gallon strong alcohol, agitating occasionally; filter through paper, add the liquor slowly to the pure spirits and gin, and mix thoroughly, adding 1 pint simple sirup, or more if required.

No. 2.—GIN.

To 20 gallons pure spirits (10 o. p.) add:—
3 gallons gin. Then take

(116)
GIN.

1\frac{1}{2} pounds juniper-berries.
2 drachms pure oil of turpentine.
1 drachm fennel-seed.
1 drachm caraway-seed.

Digest eight days in 1 gallon strong alcohol; filter through paper; add the liquor to the pure spirits and gin, mix thoroughly, and add sirup as before.

No. 3.—GIN.

To 20 gallons pure spirits (10 o. p.) add:
2 gallons pure gin, as before. Then take
1\frac{1}{2} pounds juniper-berries.
\frac{1}{2} ounce caraway-seed.
3 lemons, sliced.
2 drachms pure oil of turpentine.
1 ounce spirits nitre.

Digest for ten days in 1 gallon strong alcohol; filter as before, and add to the pure spirits and gin, with 1\frac{1}{2} pints simple sirup; mix as before.
No. 4.—GIN.

To 20 gallons pure spirits (10 o. p.) add:—
2 gallons pure gin. Then take
2 drachms pure turpentine.
1 drachm oil of juniper.
2 drachms caraway-seed.

Digest in $\frac{1}{2}$ gallon strong alcohol five days, then add slowly to the pure spirits and gin, after filtering, mixing thoroughly all the time; add 1 $\frac{1}{2}$ pints simple sirup.

No. 5.—GIN.

To 20 gallons pure spirits (10 o. p.) add:—
1 ounce spirits nitre.
1 pint simple sirup.
1$\frac{1}{2}$ drachms oil of juniper, and
1 drachm pure oil of turpentine, cut in
1 quart strong alcohol.

Add slowly, agitating all the time. Let it stand two days.
GIN.

No. 10.—GIN.

To 20 gallons pure spirits (10 o. p.) add:—
  2 drachms oil of juniper,
  2 drachms pure oil of turpentine, and
  1 drachm oil of caraway, all cut in 2 quarts strong alcohol.

Mix thoroughly, and add 2 pints simple sirup.
REDUCED GINS.

No. 11.—GIN.

To 20 gallons pure proof-spirits add:
  10 gallons pure gin.
  1½ pints simple sirup.
Mix well.

No. 12.—GIN.

To 20 gallons pure proof-spirits add:
  8 gallons pure gin.
  1½ pints sirup.
  1 ounce spirits nitre.
Mix.

No. 13.—GIN.

To 20 gallons pure proof-spirits add:
  6 gallons pure gin.
  2 pints sirup.
  1 drachm pure oil of turpentine, cut in
      1 pint alcohol.
Mix.

(122)
No. 14.—GIN.

To 20 gallons pure spirits add:—
5 gallons pure gin.
2 pints sirup.
2 drachms oil of turpentine, cut in 1 pint alcohol.
1 ounce spirits nitre.

Mix.
RUM.

Rum is a kind of ardent spirits obtained by distillation from the fermented skimmings of the sugar teaches, mixed with molasses, and diluted with water, and sometimes from the juice of the sugar-cane. The best rum is brought from Jamaica, St. Croix being next in quality. The following account of its mode of manufacture is given by Dr. Ure, in his valuable dictionary on the Arts, Manufactures, and Mines:—

“A sugar plantation in Jamaica, or Antigua, which makes 200 hogsheads of sugar of about 16 cwt. each, requires, for the manufacture of its rum, two copper stills—one of 1000 gallons for the wash, and one of 600 gallons for the
low wines—with corresponding worm refrigeratories. It also requires two cisterns, one of 3000 gallons for the lees, or spent wash of former distillations, called dunder, (quasi redundar, Span.) another for the skimmings of the clarifiers and teaches of the sugar-house; along with twelve or more fermenting cisterns or tuns.

"Lees that have been used more than three or four times are not considered to be equally fit for exciting fermentation, when mixed with the sweets, as fresher lees. The wort is made in Jamaica by adding to 1000 gallons of dunder 120 gallons of molasses, 720 gallons of skimmings, (120 of molasses in sweetness,) and 160 gallons of water; so that there may be in the liquid nearly twelve per cent. of solid saccharum. Another proportion often used is 100 gallons of molasses, 200 gallons of lees, 300 gallons of skimmings, and 400 gallons of water; the mixture containing, therefore, fifteen per cent. of sweets. These two formulæ prescribe

11*
so much spent wash, according to my opinion, as would be apt to communicate an unpleasant flavor to the spirits. Both the fermenting and flavoring principles reside chiefly in the fresh cane-juice, and in the skimmings of the clarifier; because, after the sirup has been boiled, they are in a great measure dissipated. I have made many experiments upon fermentation and distillation from West India molasses, and always found the spirits to be perfectly exempt from any rum flavor.

"The fermentation goes on most uniformly and kindly in very large masses, and requires from nine to fifteen days to complete, the difference in time depending upon the strength of the wort, the condition of its fermentable stuff, and the state of the weather. The progress of the attenuation of the wash should be examined from day to day with a hydrometer. When it has reached nearly to its maximum, the wash should be as soon as possible transferred by pumps into the still, and worked off
at a properly-regulated heat; for, if allowed to stand over, it will deteriorate by acetification. Dr. Higgins's plan of suspending a basketful of limestone in the wash-tuns, to counteract the ascidity, has not, I believe, been found to be of much use. It would be better to cover up the wash from the contact of atmospheric air, and to add, perhaps, a very little sulphite of lime to it, both of which means would tend to arrest the acetous fermentation. But one of the best precautions against the wash becoming sour, is to preserve the utmost cleanliness among all the vessels in the distillery. They should be scalded, at the end of every round, with boiling water and quicklime.

"About 115 gallons of proof-rum are usually obtained from 1200 gallons of wash. The proportion which the product of rum bears to that of sugar, in very moist, rich plantations, is rated by Edwards at 82 gallons of the former to 16 cwt. of the latter; but the more usual ratio is 200 gallons of rum to 3 hogsheads of
sugar. But this proportion will necessarily vary with the value of rum and molasses in the market,—since, whichever fetches the most remunerating price, will be brought forward in the greatest quantity. In one considerable estate in the Island of Granada, 92 gallons of rum were made for every hogshead (16 cwt.) of sugar."

Rum owes its peculiar taste and flavor to a small portion of volatile oil and butyric acid, which it contains. A good imitation of pure Jamaica rum may be obtained by carefully adding to pure spirits, 10 o. p., the ingredients found by analysis to be combined in Jamaica rum.
No. 4.—ST. CROIX RUM.

To 20 gallons pure spirits add:—
5 gallons St. Croix rum.
1 ounce acetic acid.
1½ pints simple sirup.
½ ounce tincture catechu.
1 ounce butyric acid, cut in alcohol, as before.

Let stand five days, after slightly coloring with sugar coloring.

No. 5.—ST. CROIX RUM.

To 20 gallons pure spirits add:—
3 gallons St. Croix rum.
1 pint simple sirup.
1 ounce tincture catechu.
4 ounce butyric acid, cut in alcohol, as before.

Let stand five days, after coloring as before.
WHISKEY.

Whiskey is diluted alcohol, distilled from the fermented worts of malt or grains.

Whiskey, from the Irish word usquebaugh, is the name of the spirituous liquor manufactured by our distillers, and corresponds to the eau de vie of the French, and the brantwein of the Germans.

It is produced or generated by that intestine change which grape-juice and other gluto-saccharine liquids spontaneously undergo when exposed to the atmosphere at common temperatures, as explained in another section of this work. The production of whiskey depends on the simple fact that, when any vinous fluid is boiled, the alcohol, being very volatile, evap-
orates first, and may thereby be separated from the watery vegetable infusion in which it took its birth.

Whiskey obtained from the distillation of fermented wort is most esteemed.

*Barley, rye,* and *corn* are the species of grain most commonly employed in this country for making whiskey. Barley is mostly taken, either partly or altogether, in the malted state; while the other corns are not malted, but merely mixed with a certain proportion of barley malt, to flavor the saccharine fermentation in the mashing.

The malting for distilleries ought to be conducted on the same principle as for the breweries. The malt ought to be lightly kiln-dried, at a steam heat, instead of a fire, which gives the empyreumatic smell to the grain that passes into the spirits. If, however, the empyreumatic or smoky flavor, relished by some whiskey drinkers, be desired, the malt should be dried by a turf fire, as is done in Scotland,
whereby the whiskey will acquire that peculiar odor of burnt turf called "peat-reek" in Scotland.

Whiskey is likewise obtained from wheat, buckwheat, oats, and potatoes, as well as from corn, rye, and barley, each variety having some peculiar or distinguishing characteristic.

Fine imitations of Scotch and Irish, Old Rye Monongahela, Wheat, and Bourbon Whiskeys may be made by the following formulæ, the basis being pure spirits, the same as used for making brandies, gins, etc.
liquor, however, become milky, an addition of pure spirits will often rectify the evil.

It is frequently necessary to filter cordials which are not perfectly fine. This may be done by adding or mixing a small quantity of magnesia with the article requiring filtration; then run it through a fine, clean wine-bag.

The best plan for dealers who make large quantities of cordials, is to have three barrels of sweetened spirits ready prepared, of about 65 u. p. The one containing two pounds of sugar to the gallon, the second three pounds, and the third four pounds to the gallon, so that any sweetness required may soon be obtained. The essential oils to be cut in strong alcohol, may be in the proportion of one drachm to the pint, and should not be used until having stood, say from twelve to twenty-four hours. The best plan is to have all the different solutions of the oils which may be required on hand, which will considerably expedite the manufacture of whatever kind may be demanded.
The very best quality of sugar is required, so as to insure a fine, transparent sirup, which must be made according to the instruction in the appendix.

Cordials which require fining may be fined with the whites of six to ten eggs to the barrel, or by the addition of a little alum, either alone or followed by a little carbonate of soda or potassa, dissolved in water. In from ten days to two weeks the liquor will be clear.
CORDIALS.

No. 1.—ROSE CORDIAL.

To 6 gallons pure proof-spirits add:—
60 drops oil or ottar of roses, cut in 1 pint strong alcohol.
4 gallons clear soft water.
1½ gallons simple sirup.
Agitate thoroughly, and if not sweet enough add more sirup. Color with tincture of red sanders.

No. 2.—ROSE CORDIAL.

To 5 gallons pure proof-spirits add:—
40 drops ottar of roses, cut in alcohol.
3 gallons clear soft water.
1½ gallons simple sirup.
Color and agitate as before, adding more fla-
voring and sirup if required. It may be reduced by adding more water.

No. 3.—ANISE-SEED CORDIAL.

To 6 gallons pure proof-spirits add:—
  1 drachm of the essential oil of anise-seed, cut in alcohol.
  4 gallons clear soft water.
  1½ gallons simple sirup.

Agitate as before, and proceed as directed in No 2.

No. 4.—ANISE-SEED CORDIAL.

To 5 gallons pure proof-spirits add:—
  1 drachm oil of anise-seed, cut in alcohol, as before.
  3 gallons clear soft water.
  1½ gallons simple sirup.

Agitate, and manage as directed in formula No. 2.
No. 5.—ANISE-SEED CORDIAL.

To 1 pound bruised anise-seed add:—
6 gallons pure proof-spirits. Digest for
   ten days, and then add:—
3 gallons clear soft water.
1½ gallons simple sirup.
Agitate; filter if required, and manage as in
No. 2.

No. 6.—CITRON CORDIAL.

To 2 pounds rind of yellow citrons add:—
½ pound orange peel.
1 ounce bruised nutmegs.
6 gallons proof-spirits. Digest for twelve
days, filter, and add:—
3 gallons clear soft water.
1½ gallons simple sirup.
Agitate, and proceed as in No. 2.

No. 7.—CINNAMON CORDIAL.

To 6 gallons proof-spirits add:—
2 drachms essential oil of cinnamon, cut
   in 1 quart strongest alcohol.
3 gallons clear soft water.
1½ gallons simple sirup.
Agitate thoroughly, and proceed as in No. 2.

No. 8.—CINNAMON CORDIAL.
To 5 gallons pure proof-spirits add:—
2 drachms essential oil of cinnamon, cut in alcohol, as before. Then add
10 drops essence of lemon.
10 drops essence of orange-peel.
2 drachms cardamom-seeds, bruised.
Digest for eight days, filter, and add:
3 gallons water.
1½ gallons simple sirup.
Agitate, and proceed as in No. 2.

No. 9.—CLOVE CORDIAL.
To 6 gallons pure proof-spirits add:—
1 drachm essential oil of cloves, cut in strong alcohol.
3 gallons clear soft water.
2 gallons simple sirup.
CORDIAL.

Color dark with sugar coloring. Agitate thoroughly, and manage as in No. 2.

No. 10.—CLOVE CORDIAL.

To 1? ounces bruised cloves add:—

5 gallons pure proof-spirits.
2 drachms bruised allspice. Digest for ten days, then filter, and add:—
3 gallons clear soft water.
2 gallons simple sirup.

Agitate, and manage as in No. 2. Color.

No. 11.—PEPPERMINT CORDIAL.

To 6 gallons pure proof-spirits add:—

1 drachm essential oil of peppermint, cut in 1 quart strong alcohol, which has first stood for twenty-four hours, and agitated frequently; then add:
6 gallons pure soft water.
2 gallons simple sirup.

Agitate thoroughly, and, if not clear, dissolve 2 drachms of alum in a pint of rain water;
add it to the cordial, agitate for five minutes, and let it stand ten days.

No. 12.—LEMON CORDIAL.

To 5 ounces fresh lemon-peel,
5 ounces dried lemon-peel, and
5 ounces dried orange-peel, add:
5 gallons pure proof-spirits. Digest for
ten days, draw off, and add:
3 gallons clear soft water.
1½ gallons simple sirup.
Proceed as in No. 2. Color, if required.

No. 13.—ORANGE CORDIAL.

To 3 pounds fresh orange-peel,
2 pounds dried orange-peel, and
½ pound fresh lemon-peel, add—
5 gallons pure proof-spirits. Digest for
ten days, draw off, and add:
3 gallons clear soft water.
1½ gallons simple sirup.
Agitate, and manage as in No. 2. Color.
CORDIAL.

No. 14.—STRAWBERRY CORDIAL.

To 5 gallons pure proof-spirits add:—
4 quarts sirup of strawberries.
3 gallons clear soft water.
1½ gallons simple sirup.

Agitate, and manage as in No. 2. Color, if required. This is a fine article.

No. 15.—STRAWBERRY CORDIAL.

To 8 quarts strawberries add:—
5 gallons pure spirits. Digest for ten days, draw off, and add:—
3 gallons clear soft water.
2 gallons simple sirup.

Agitate, and manage as before. Color, if required.
DISTILLATION.

DISTILLATION (Destilliren, German) is the manufacture (commercially speaking) of spirituous or intoxicating liquors; comprising the operations of mashing the vegetable materials which furnish the basis for the formation of the alcohol; cooling of the worts, which brings them to the most favorable temperature for exciting the third process—fermentation; the fourth and last process being the separation of the alcohol, with a certain proportion of water, by means of a still.

The following condensed article, from Ure, on the above subject, will be found interesting to the reader:—

Whiskey, as before remarked, is generated by
that intestine change which grape juice and other glutino-saccharine liquids spontaneously undergo when exposed to the atmosphere at common temperatures. Sugar is the only substance which can be transformed into alcohol. WHATSOEVER seeds, fruits, or roots afford juices or extracts capable of conversion into vinous liquor, either contain sugar ready formed, or starch, susceptible of acquiring the saccharine state by proper treatment. In common language, the intoxicating liquor obtained from the sweet juices of fruits is called wine, and that from the infusions of farinaceous seeds, beer, though there is no real difference between them in chemical constitution. Wine, cider, beer, and fermented wash of every kind, when distilled, yields an identical intoxicating spirit, which differs in these different cases merely in flavor, in consequence of the presence of a minute quantity of volatile oils of different odors.

The juices of sweet fruits contain a glutinous ingredient, which acts as a ferment in causing
their spontaneous change into a vinous condition; but the infusion of seeds, even in their germinated or malted state, requires the addition of a glutinous substance called yeast to excite the best fermentation. In the fabrication of wine or beer for drinking, the fermentative action should be arrested before all the fruity saccharum is decomposed; nor should it, on any account, be suffered to pass into the acetous stage: whereas, for making distillery wash, that action should be promoted as long as the proportion of alcohol is increased, because the formation of a little acetic acid is not injurious to the quality of the distilled spirit, but rather improves its flavor by the addition of acetic ether, while all the decomposed sugar is lost. The distillers in the United Kingdom operate upon the saccharine matter from corn of various kinds by drawing off a pure watery extract from the grain, and subjecting this species of wort to fermentation; while the distillers of Germany, Holland, and the north of Europe,
ferment and distill the infused mass of grains; the latter plan being less economical, more uncertain in the product, and affords a cruder spirit, a fetid volatile oil being evolved from the husks in the still. The substances employed by distillers may be distributed into the following classes:—

1. Saccharine juices. At the head of these stands cane-juice, containing (fresh from the mill) from 12 to 16 per cent. of raw sugar, and enters into the vinous fermentation without the addition of yeast, producing rum, which is possessed of a peculiar aroma, derived from an essential oil in the cane. An inferior sort of rum is made from molasses, mixed with the skimmings and washings of the sugar-pans. When molasses, or treacle, is diluted with water, and cooled to the proper temperature, and yeast added, fermentation will ensue, and a spirit be generated which, when distilled, has none of the aroma of rum, proving the source whence the aroma comes. Cane-juice under-
goes the vinous fermentation, however, much more slowly and irregularly without the addition of a ferment than with it. It is therefore quickened by the addition of the lees of a preceding distillation.

The sweet juices of palm-trees and cocoa-nuts, as also of the maple, ash, birch, etc., when treated like cane juice, afford vinous liquors from which ardent spirits, under various names, are obtained, as arrack, etc., the quantity being about 50 pounds of alcohol of 0.825 for every 100 pounds of solid saccharine extract present. Honey, similarly treated, affords the methyglin so much prized by our ancestors.

2. The juices of apples, pears, currants, and such fruits, afford, by fermentation, quantities of alcohol proportionate to the sugar they contain. Cherries are employed in Germany, and other parts of the continent, for making a high-flavored spirit called kirsch-wasser, or cherry-water. The ripened red fruit of the mountain ash constitutes a good material for vinous fer-