MOLASSES.

IODINE

Is used to indicate the presence of starch in liquors; in this manner it is used in detecting French brandies. See chapter on "Ascertaining the Purity of Brandies."

LOGWOOD

Imparts its color to water and alcohol; the color that is imparted to boiling water is of a much warmer tone than that of any other; the color is of a deep red, bordering on purple. This is suited for the wines, and is sometimes combined with burnt sugar, in coloring brandy.

MOLASSES

Is sometimes used in manufacturing liquors; the objection to its use is, that it contains a large portion of charcoal, and that it is indebted to it for its own color; this charcoal being in such minute particles, that their removal is attended with great difficulty, as finings will have no effect on them. It is exceedingly difficult to render a fluid transparent that holds molasses in solution, and for this reason coloring for liquors should never be prepared from molasses, and coloring, from this source, may be known by the heavy color it leaves in liquor.
NEUTRAL SPIRIT,

Or clean spirit, is a spirit of variable strength, say from 40 to 70 per cent. of alcohol. This spirit is colorless and inodorous, though, as usually found, it has the odor of rum, or acetic ether, which is generally added to conceal some slight trace of remaining grain oil. The only reliable tests for this spirit are the hydrometer, and nitrate of silver; the former indicating the per centage of alcohol, and the latter that of grain oil. And neither should this spirit, when drunk, or after having been drunk, leave any disagreeable or heavy sensation in the throat or on the palate, and all the disagreeable and stinging sensations should pass off without leaving the slightest traces of astringency, roughness, acridness, or of pungency in the mouth or throat, as these indications would point to the usual adulterations of acrimonious substances. These remarks will apply to any other liquor for detecting adulterations.

NITRATE OF SILVER.

This is used in solution for detecting grain oil in liquors; the silver throws the oil to the surface of the liquid in the form of a black powder; this will serve to detect fictitious liquors generally, or at least as far as common grain spirit may enter into their composition.
OAK BARK.

Red and black oak are best suited for the manufacture of liquors, both for coloring and tannin; the bark is best suited for brandies, as it yields a fine brown color, and its bitter principle adds a pleasant taste to the liquor. The color can be obtained either by infusing the bark in water or spirit. Sulphuric acid is sometimes added to liquor colored with this bark, as the acid gives to the liquid a bright transparency.

In some manufactories oak bark coloring is used to the exclusion of sugar coloring, for brandies. The coloring is prepared from the bark by infusing it in barrels, along with proof spirit; fresh bark is added to the spirit until it becomes an amber color, it is then used in the same manner as brandy coloring.

Care should be observed that no metallic body comes in contact with liquid containing tannin, either in the form of oak bark, catechu, or tannic acid, as the color must, to a greater or less extent, become contaminated.

The most convenient mode of discharging oak bark coloring, or tannin, in any form, is by a solution of gelatine, composed of one to three ounces of isinglass, beat fine, or to shreds, and dissolved in warm water, two pints, and when cold, whisk to a
froth with water, and add it to forty gallons of spirit.

OATMEAL, ETC.

Oatmeal, rice flour, and wheaten flour, are for giving a body, &c., by filtration, to spirits.

The rationale of this process is, that the flour alluded to is of a feebly sweetish taste, and is composed (mechanically) of minute particles, which is the result of grinding and bolting. The spirit, in filtering through a body of this flour, becomes charged with a portion of these particles. Now the natural taste of the spirit is hot and pungent; this taste is modified, softened, mellowed, by the addition of these particles of flour. Without lessening its strength, it adds to the density of the spirit, and hence an oily taste and appearance.

The particles alluded to should not be discerned by the naked eye; this is prevented by placing a few folds of muslin at the bottom of the flour; this muslin strains off all the coarser particles, or prevents their passage.

Oaten meal and wheaten flour are used for colored liquors, viz. brandy, whiskey, &c. Rice flour is used for white liquors, viz. gin, and all liquors that are uncolored.
RUM.

Some manufacturers make use of equal quantities of either wheat flour or oatmeal and rice flour.

PEPPER—LONG, CAYENNE, AND BLACK.

Of the different varieties of pepper, none answer for the purpose of giving a false strength to liquors, except Guinea pepper; a tincture prepared from this variety has a taste analogous to alcohol, whereas the taste from the other varieties remains on the palate a considerable length of time after being swallowed.

It is usual in preparing large quantities of the above tincture, to add a portion of long or cayenne, to increase the strength.

PELLITORY.

This is a powerful acrimonious substance, which is used in the form of a tincture for giving a false strength to liquors generally, and also to vinegar. See Pellitory.

RUM

Is too well known to require a description. There are several commercial varieties; the most common are Jamaica, New Orleans, St. Croix, and New England; they are stated agreeably to their relative com
commencial positions, and are found colored and uneo-
lored.

For the purposes of the manufacturer the Jamaica
rum is preferable. Rum gives to neutral spirit a
fine aroma, when tempered with acetic or butyric
ethers, and also an agreeable vinous taste. In ex-
temporaneous formulas, rum is highly useful. See
Formulas.

**RED SANDERS WOOD.**

A tincture is prepared from this wood that is used
for coloring all kinds of liquors. The red from
sanders is inferior to cochineal. See chapter on Co-
loring.

**RICE.**

Rice flour is used for filtering liquors through to
give them a body. See chapter on Filtration.

**SAFFRON.**

There are two varieties, the English and Ameri-
can; that of the former is best suited for coloring
liquors, and of the latter for cordials.

**SNAKEROOT.**

Of these varieties; the Virginia snakeroot is pre-
SWEET SPIRITS OF NITRE.

ferable; this is one of the constituents of the various brands of bitters. The bitter principle is yielded to water and alcohol. For particulars, see chapter on the Manufacture of Bitters.

SWEET SPIRITS OF NITRE

Is distilled from nitric acid and proof spirit, and is used by some manufacturers for giving a false strength to liquors. The proportions vary, say from six to twelve ounces to forty gallons of spirit. The excessive use of the sweet spirit of nitre in liquors, will cause an involuntary flow of urine from the consumer; probably there are but few instances in which the use of nitre would be necessary in managing liquor; some manufacturers use it in liquors that have become musty, and others use it under the impression that it adds a peculiar vinosity to the spirit.

These ends can be obtained by other articles that are more economical and less injurious to health; the articles in question consist of honey or sugar, acid tincture of the grains of paradise, starch, &c.

In the extemporaneous preparation of liquors, nitre is preferable, as it needs no preparation. From two causes, the exact quantity of nitre necessary for a given quantity of spirit cannot be given. First, owing to the extensive adulterations that it is subject to, which are alcohol or water, and the second is owing to
what apparent strength the liquor is to be brought to. The palate will be the most correct guide; it will be found that the use of the grains of paradise tincture will be the most economical for giving a false strength to low proof or cheap liquors, and that the tincture is less injurious than nitre.

OLIVE OIL.

The pure oil is of a pale yellow or greenish yellow color, with scarcely any smell, and a bland, slightly sweetish taste. This oil is largely adulterated with the cheaper oils; a mode to detect the pure oil, founded on the property possessed by the supernitrate of mercury, of solidifying the oil of olives without a similar influence upon other oils—six parts of mercury are dissolved at a low temperature in seven and a half parts of nitric acid, of the sp. gr. 1.35, and this solution is mixed with the suspected oil in the proportion of one part to twelve, the mixture being occasionally shaken. If the oil is pure it is converted, after some time, into a yellow solid mass; if it contains a minute proportion, even so small as the twentieth, of common oil, the resulting mass is much less firm. Another test is founded on the fact that pure olive oil is changed to a greenish yellow color by nitric acid. Olive oil is used in the
OIL OF CEDAR.

manufacture of liquors for making the beading mixture which is used for low proof spirits. See Beading Mixture.

OIL OF CARAWAY

Is, like cinnamon, only used for flavoring cordials, and if added to liquors it should be so combined, that it will only assist in making a new compound in the family of aromatics.

OIL OF CLOVES

Is sometimes added to the ethers to increase their pungency. When used for domestic or foreign brandies the proportion of oil is one drop to every ounce of ether. Ether is a solvent for any of the essential oils. Great care should be used in the use of this oil in liquors, as its odor would indicate its presence. In the manufacture of cordials, clove oil is one of the most valuable that is in use; the quantity to be used is generally regulated by the palate.

OIL OF CEDAR.

Five drops of the oil are added to one ounce of nitric ether, for flavoring Holland gin, and is
sometimes used in imitating Scotch and Irish whiskey,—from 20 to 40 drops are added in combination with creasote.

OIL OF JUNIPER.

It is this oil that imparts to Holland gin its peculiar flavor and diuretic power. From three to four ozs. dissolved in alcohol, for 100 gallons of spirits.

OIL OF LAVENDER.

Used for flavoring cordials, in combination with other aromatics. It is rarely, if ever, used for flavoring spirits.

OIL OF LEMON.

This oil, dissolved in ether or alcohol, is highly useful for cordials, wines, and liquors. With raisin spirit or prune spirit, essence of lemon forms a valuable adjunct; or from one to two drops of the oil dissolved in acetic ether constitutes a fine and natural flavoring for French brandies. When used in conjunction with rum, the essence of lemon is suited from its flavor to enter into any compound that may be used for flavoring either wines, liquors, or cordials.
OIL OF ROSEMARY.

Is obtained from nutmegs.

It is solid, soft, unctuous to the touch. Of a yellowish or orange yellow color, more or less mottled, with the odor and taste of nutmeg. It is dissolved by alcohol or ether.

An artificial preparation is sometimes substituted for the genuine oil. It is composed of suet, tallow, spermaceti, wax, and adding coloring and giving a flavor to the mixture with oil of nutmeg. Oil of mace is used for giving a nutty flavor to liquors, —from two to three ozs. to one hundred gallons. Its other uses will be found in the receipts.

OIL OF PARTRIDGE-BERRY

Is used for flavoring the syrup of sarsaparilla, and for the sarsaparilla cordial—see farther Directions for Making Syrup and Cordial.

OIL OF ROSEMARY

Is sometimes used in flavoring raisin and prune spirit in the proportion of from one drachm to one oz. of the oil dissolved in acetic ether. The proportion of oil to ether is as one to five.

Oil of rosemary is used for flavoring the cordials,
and enters into some formulas for peach brandies, which consists of rosemary, bitter almond oil, dissolved in acetic ether; but butyric ether and pear oil have superseded these articles.

Many of these articles have sunk into disuse or have been superseded by others better adapted to these purposes; yet it would be deemed necessary to a full comprehension of this business, that all articles bearing any relation to the manufacturing of wines, liquors, &c., should be mentioned and explained.

OIL OF ROSES, OR OTTO OF ROSES,

Is used for all of our cordials, and for flavoring peach brandy, fine apple brandy. It is combined with pear oil essence, and with essence of mace, for pale and brown sherry; and combined with ambergris it is used for claret. Acetic ether six ozs.; essence of mace two ozs.; oil of roses one oz.; one drop well rubbed up in two ozs. of white sugar—this is added to forty galls. of neutral spirit in imitation of foreign brandy. Rose water is made from oil of roses by dissolving twenty grains of the oil in two ounces of clean alcohol. The alcohol should be kept hot till the complete dissolution of the oil has taken place. The alcohol is then added to a half-gallon of clean clear water.
OIL OF SASSAFRAS.

In bottling champagne it is usual to add a few drops of rose water to each bottle.

For correcting a peculiar mustiness that is sometimes perceptible in brandies, the addition of one grain of the oil of roses well rubbed in sugar, and added to every forty gallons, will completely cure it. In adding this or any other aromatic to brandy, they should never be added in excess, but in such small proportions that they would form a harmonious odor in which nothing could be noticed that would attract attention. The novice should recollect that the object of all this aromatizing is merely an attempt to imitate oil of wine, the ingredient that brandy owes its flavor to.

OIL OF SASSAFRAS.

The essence is made by dissolving the oil in alcohol, in the proportions of half an ounce of the oil to four ounces of alcohol. Sassafras is used in the syrups and cordials, and for beer made from saccharine fermentation. The essence, when used as above, the quantity is generally added to suit taste—the odor of sassafras is too well known to attempt its use in liquors.
OIL OF TAR, OR CREASOTE,

Is used for flavoring malt whiskey, or well cleaned corn whiskey, in imitation of Irish or Scotch whiskies; from sixty to eighty drops to one hundred gallons. Some contend that the addition of from thirty to fifty drops of cedar oil, first dissolving it in alcohol, perfects the imitation; the number that use cedar oil are in the minority, as the most extensive dealers and importers use creasote alone. It is not an unusual occurrence to find a large portion of this whiskey made from common corn whiskey, with the grain oil concealed by the powerful odor of the creasote. Persons not familiar with the odor of fusel oil or corn oil can detect it by the use of nitrate of silver. For particulars on this subject, see the chapter on tests for the purity of French brandy.

The spirit intended for an imitation of this whiskey should be well cleaned or freed of grain oil by filtration, and barrelled in the barrels that formerly contained the genuine. Irish and Scotch whiskey contain from forty-eight to fifty-five per cent. of alcohol.

TURPENTINE.

This is used singly, or combined with oil of junc
OIL OF WINTERGREEN.

per. for the different brands of gin, and the common gin contains this alone. Strasburg turpentine is the best. From one drachm to half an ounce to one hundred gallons. The excessive quantity is added to destroy any traces of grain oil that may exist, for the base of the American gin is rectified whiskey. Spirit intended for gin should be free of essential oil, and should show but little traces of this oil by the nitrate of silver test.

OIL OF WINTERGREEN, OR OIL OF PARTRIDGE-BERRY.

This oil, when freshly distilled, is nearly colorless, but as usually found has a brownish or reddish yellow color. It is of a sweetish, pungent taste, and of a very agreeable odor.

It may be distinguished from other oils from its great weight—it is the heaviest of the known essential oils.

Its unusual weight affords a convenient test of its purity.

This oil is used for flavoring clean spirit in imitation of "Old Bourbon, "Monongahela," "Rye," "Old Roanoke," and "Tuscaloosa" Whiskeys. For Bourbon the spirit is cleaned, allowing no smell of grain oil, and from ten to fifteen drops of oil of wintergreen are added to forty gallons.
For giving liquors a body, bead, and age, look under the proper heads, as those chapters are intended to point to the most useful flavoring materials.

Rye whiskey consists of clean spirit, containing about the same portion wintergreen oil, dissolved in four ounces of acetic ether. "Old Roanoke" same as the last. Some dealers add a few drops of creosote, say from fifteen to twenty drops to every forty gallons. "Monongahela," when prepared for bottling, contains to ten gallons of spirit, five drops of the oil of wintergreen dissolved in acetic ether, six ounces.

Every manufacturer varies the proportions of both the oil and the ether. These variations are matters of fancy; the object sought is merely a pleasant and agreeable aroma, which if added in excess will attract observation. When an excess does exist, it is for the purpose of covering the smell of the grain oil.

ESCBAC, "FOR FLAVORING."

Cochineal 4 ozs.; catechu 5 ozs.; ambergris 1 gr.; raisins 1 lb. (bruised); anise seed, cloves, mace, and coriander seeds 1-2 oz.; 20 drops oil of cinnamon. All of the above solid ingredients should be well bruised or washed, and let them stand or digest in two lbs. of acetic ether, for two weeks, then strain through
muslin, and add one quart of clean spirit; this is used for flavoring bottled brandies; 5 ozs. to 10 gallons of clean spirits; this is also used for cordials, ice creams, beverages, &c. Small quantities are often added to the different brands of the whiskies, combined with the ethers intended for them.

ESCUBAC.

Nutmegs one pound, coriander seed one pound, bitter almonds two pounds, damaged raisins one hundred pounds, red beets, sliced, forty pounds. Allow these ingredients to digest for fourteen days in forty gallons of whiskey, and then strain off into a fresh barrel; then add to the strained liquor two pounds of acetic ether that has had two grains of ambergris, one ounce of oil of lemons, and one drachm of oil of cinnamon dissolved in it; then add half a pound of nitric ether. This is used for making or flavoring common New York double anchor, cognac, French brandy, and all of the lower brands of domestic brandy. The proportion is various, owing to the amount of grain oil present; the quantity may be stated at one quart to one gallon. Where persons wish to imitate brandy from whiskey, the above spirit will be found highly useful.
III

ARTICLES USED

FOR FLAVORING

WINES, LIQUORS, ANDCORDIALS.

The great secret of success in the manufacture of liquors consists in imparting to the imitation the precise aroma of the genuine, and thus obtain an article of spirit as near reality as possible, at a far less cost.

Brandy, for example, contains alcohol, oil of wine, &c., &c. Analysis has rendered the components of this fluid familiar, and has furnished the exact proportions, with their properties, and hence the various imitations of brandy, and some of them containing all of the essentials of, and scarcely distinguishable from the genuine. The list of aromatics, perfumes, &c., presented in the following, comprises the whole that are in use.
REMARKS ON ETHERS.

The operator should avoid, as far as is practicable, the excessive use, either singly or combined, of any aroma, or perfume, that would indicate its own presence; that this would be an injurious result, must be obvious. In imitating the aroma of brandy, the ethers will be found to be the most valuable. The aroma of cordials have been greatly neglected by manufacturers. Why this should be the case is certainly astonishing, since this addition could be made at an insignificant cost.

The consumer of these articles will find it more economical to manufacture them, as the same articles, when found in commerce, contain adulterations to a greater or less extent, and the chemical preparations particularly, which are made by the manufacturing chemists to suit the low price paid for them, are largely adulterated. The articles in question will be arranged rather with a view to their importance and availability, than to an alphabetical arrangement.

GENERAL REMARKS ON ETHERS.

They consist of acetic ether, butyric ether, nitric ether, chloric ether, and sulphuric ether.

Owing to their extreme volatility, they should be excluded from the air. Ether, when good, evapo-
rates from the hand without leaving a disagreeable odor. The inflammability of ether should prevent its use in the vicinity of flame—when too long kept they undergo decomposition. They combine in all proportions with alcohol; their usual impurities are, water, acids, alcohol, and heavy oil of wine. As these impurities do not injure the ethers for manufacturing purposes, to offer any tests would be deemed unnecessary. The process of their formation will be necessary to fully comprehend their adaptation.

**SULPHURIC Ether**

Is generated by the distillation of sulphuric acid, or oil of vitriol, with alcohol; it is a colorless, very limpid liquid, of a strong and sweet odor, and hot and pungent taste. It is used in imitating brandy, and also rum; the proportions are from four to nine ounces to forty gallons of clean spirit; though it is used more extensively in combination with spirit of orris root, orange, lemon, and rum; thus, for instance, five parts of the ether to one of orris root, or two parts of orange, and eight of rum. These proportions are for brandy, but sulphuric ether is inferior to acetic or butyric ether, for any of the purposes of the manufacturer of liquors. By some, it stands very high in imitating rum. From neutral spirit,
acetic ether, three parts; sulphuric ether, six parts; rum, eleven parts.

NITRIC ETHER

Is the product by distillation of nitric acid with alcohol.

Nitric ether is a colorless volatile liquid, of a fragrant, ethereal odor, and pungent, aromatic, sweetish, acidulous taste. This ether is commonly used for the fine gins—see the quantity in the receipts, and also for common American brandies. In some instances it is combined, one part acetic ether, and two of nitric ether; and again, the odor of this ether is tempered by the addition of a few drops of oil of winter green, or by a few drops of essence of ambergris, or essence of cassia; or by the spirit of nutmeg; any of these are added to suit the fancy of the operator. They should never be added to that excess that they would indicate themselves.

ACETIC ETHER

Is distilled from acetic acid, sulphuric acid, and alcohol. This ether is colorless, of a very grateful odor, and of a peculiar agreeable taste. This ether undergoes no change by being kept.
This ether enters largely into the aromatic portion of all domestic liquors, either singly or combined. Singly, for New York brandy, and for old Bourbon; or combined with essence of wintergreen, for old Roanoke whiskey, for peach brandy, combined with orange flower water. In imitating the imported brandies, combined with rum, orange essence, raisin spirit, spirit of prunes, or oil of wine, to any of these named articles, by its addition; acetic ether promotes a great saving of the more costly articles that are used to impart a distinguishing flavor to spirits. In imitating rum, combined with rum and sulphuric ether, added to neutral spirit, acetic ether is highly useful. To any of the cordials, viz. peach, sunny south, strawberry, raspberry, &c., &c., one ounce per gallon would be a great improvement. For the full use of acetic ether, see the Formulas.

PURE LIGHT OIL OF WINE

Is a colorless, oily liquid, having an aromatic odor, and imparts a greasy stain to paper. This is the product by distillation of alcohol, sulphuric acid, and potassa. It is used for imitating foreign brandies; it is first dissolved in alcohol; the proportion is from one and a half ounces to five hundred gallons of clean spirit. We have nothing better than the
oily wine, as this is the article that imported brandies are indebted to for their aroma, and it is the perfume that we are endeavoring to imitate.

The objections to be urged against the oil of wine by the manufacturer are, the high price, and almost all that is found contains extensive adulterations. And now it is rarely, if ever, used, having found so very many excellent substitutes. But in the manufacture of brandy on a small scale, oil of wine is preferable, and also for the imitation wines, viz. madeira, teneriffe, sherry, port, &c. It is used in the same quantities for wines as for brandies; the spirit to which it is added must be free of grain oil. The oil of wine is highly useful in bottling imitated wines and brandies, for these packages are examined with greater scrutiny than they would otherwise be. It is also used in the fancy whiskeys, when they are put up in small packages.

BUTYRIC ETHER

Is formed by the saponification of rancid butter by the aid of alkali, and then distilled with sulphuric acid. This ether has a strong odor of pineapples, and is used for making pineapple ale, which consists in adding from four to six ounces of ether to a hundred gallons of common ale. Also for pineapple
syrup, pineapple cordial, and pineapple brandy. It is also used as a flavoring ingredient in fine peach brandy. This ether is used in the same proportion as all other ethers for liquors, &c. In the imitation of the Sazarac brandies, of the vintage of 1795–98, 1802–05, Godard, vintage of 1828, Otard, Dupuy, Maret, and Poulteney brandies, two parts of butyric ether, five of oil of wine, form the principal and the most approved flavoring ingredients; and also in the imitations of Copenhagen cherry brandy, grape leaf champagne, sparkling Burgundy, champagne, Heidsieck champagne; and also in the imitations of the juices of fruits. When the aroma is applied to champagne, butyric ether is combined with four to six parts of oil of wine, dissolved in alcohol, free of grain oil. Alcohol is used as a solvent for oil of wine in the proportion of four parts alcohol to one of the oil of wine. The ethers intended for champagne, after being dissolved, are added to the spirit that is intended for champagne. Butyric ether will, owing to the strength of its odor conceal a considerable amount of grain oil.

VALERINATE OF AMYLIC OXIDE

Is produced from grain oil by distillation; its odor recalls that of sweet apples, and is known as apple
ACETATE OF AMYLIC—OXIDE.

Oil. It is used in flavoring plain spirit in imitation of apple brandy, and also in champagne cider, and for flavoring fine bottled cider. Apple oil, combined with butyric ether, is used for old reserve, pathetic ho, south side, and East India madeira; and when combined with Jamaica rum, it is used in making imitations of rum from neutral spirit. The apple oil and oil of wine form one of the finest perfumes that we have for the conversion of clean spirit into peach brandy; and with acetic ether it is used, giving a fine, and at the same time, natural aroma to the juices of fruits, fruit cordials, and syrups prepared from fruits for use; it is dissolved in clean alcohol, in the proportion of one part to four of spirit.

ACETATE OF AMYLIC.—OXIDE.

This is also prepared from grain oil, and is known as pear oil, and is sometimes used in the finer brandies, under the impression that it imparts an odor peculiar to old liquors. For old rye, Bourbon, and Roanoke whiskey, pear oil is highly useful, and is to be preferred to the essence of wintergreen. Its soft, mellow odor will give it a preference over any article in use for imparting to any kind of liquor the fine, soft mellowness of age. Its solution is obtained by dissolving in alcohol one part of pear oil to four of
clean alcohol. It is used at discretion in such quantities that it will neither absorb nor become absorbed by any other aromatic. The usual quantities are from two to six ounces to one hundred gallons of clear spirit.

AROMATIC SPIRIT OF AMMONIA.

This spirit is distilled for the use of rectifiers from oil of lemon one-half ounce, nutmegs two ounces, oil of cinnamon one drachm, cleaned alcohol four pints, and mix the oils; then add spirit of ammonia three ounces. The proportions, of course, can be varied, and any aromatic can be used. This spirit is of a fine aromatic taste and odor, and is well suited for flavoring cordials and domestic brandies.

SPIRIT OF PRUNES.

Properly this would be called a tincture or infusion. Take any convenient quantity of prunes, and add double their quantity by measure of clean spirit, and digest for ten days. Used principally for flavoring domestic brandies, from one pint to three quarts to forty gallons of clear spirit. When an excess is added, the object is to conceal the remaining traces of grain oil in the spirit. The tincture of prunes is greatly benefited by the addition of an equal quantity of Jamaica rum. Prunes do not
yield a very strong odor, and care should be used in their selection. As they are usually found, they contain but little flavor, and the only test for them will be their aroma. This tincture is used in conjunction with nitric ether and acetic ether, for brandies. The usual quantities of the tincture of prunes are added to forty gallons of spirit, and from one to five ounces of either one of the last named ethers. The spirit used for digesting the prunes in should be perfectly free of grain oil. The prunes are subjected to this digestion as long as they will yield any perceptible perfume to fresh spirit. It is usual to add to the spirit containing the prunes one ounce of powdered orris root to every gallon, or orange peeling, or nutmegs; and the whole of them combined will make a desirable perfume for common brandy.

RUM.

This is one of the most convenient and economical flavoring aromatics that the rectifier makes use of. Jamaica contains a larger per centage of alcohol than any other brand, and also a corresponding amount of essential oil; and it is this essential oil that is sought for. The perfume of rum will answer in the absence of butyric ether, or oil of wine. Each gallon of rum is tempered with one ounce of acetic
ether. Rum thus charged is used for flavoring plain, clean spirit, in imitation of French brandies, in the proportion of from four to fifteen gallons to one hundred. The lowest extremes are for domestic brandies, and the highest are for fine imitations. This excess of fifteen to twenty gallons of rum adds a fine vinous taste to the brandy. The rum added to this extent is usually New England rum, which is, from its low price, the most convenient; but the most economical mode of imparting a vinous taste to any kind of spirit is by the use of sulphuric acid, from one to two ounces of the acid to one hundred gallons of spirit. For the general effect of acids on liquors, see chapter on "The Benefit of Acids to Liquors." Rum tempered with one ounce of butyric ether and half an ounce of acetic ether to each gallon, is used in the proportion of one gallon to six of well cleaned spirit in imitating rum.

**RAISIN SPIRIT.**

This is produced by the distillation of raisins. This spirit can be manufactured at that season of the year in which the previous year's stock of raisins have deteriorated from age. Spirit of raisins occupies a position, from its properties, near oil of wine, as they are obtained from the same sources, only
under different circumstances; and as much of the original flavor of the raisin has been dissipated from age, this spirit is extensively used by all classes of manufacturers, and probably to a greater extent in France than elsewhere in flavoring clean spirit for brandies; and, also, for flavoring madeira, sherry, teneriffe, and all of the different brands of champagne. The process consists in using any well managed champagne, and adding the raisin spirit to the neutral spirit intended for the champagne. See the Formulas for Champagne.

Raisin spirit is sometimes adulterated with acetic ether, butyric ether, orris, nutmegs, apple oil, pear oil, &c., &c. The adulterations are sometimes carried to such extremes by some manufacturers that the so-called raisin spirit possesses none of the peculiarities of the original. The spurious raisin spirit is manufactured ex-tempore for auction sales, and is sold to the ignorant for brandy flavoring. The most common formula for this imitation is to take rectified whiskey (clear of color) forty gallons, sulphuric acid three ounces, acetic ether twelve ounces, essence of orange four ounces, ambergris two grains, rubbed up well with two ounces of dry white sugar, and added to the forty gallons of whiskey. This liquid is then charged with from fifteen to twenty-five gallons of water containing
pellitory, grains of paradise, and catechu; and again the spirit is not diluted with water, but the strength is heightened by the addition of from six to twelve ounces of sweet spirits of nitre, combined with a quart or three pints of tincture of grains of paradise. The consumers of this latter article are coffee-house keepers, &c., &c. It is for flavoring and giving a false strength to liquors, wines, &c.

And even the distiller becomes imbued with the spirit of the age; for if the manufacturer operates on his customer's purse through the medium of his olfactory nerves, the manufacturer, by the same rule, is done equally as "brown" by the distiller; because the adulterations that the raisin spirit is liable to contain coming from the hands of the distiller are various, and among the most prominent, and at the same time difficult of detection, are the different ethers.

We have no positive chemical tests for ethers, but their volatility will serve to detect their presence. Thus, for instance, if a portion of suspected raisin spirit be exposed, in an open-mouthed vessel, for a few hours, the pungency and odor of the sample will be greatly lessened, or entirely dissipated. To detect any acrimonious substances, evaporate a quantity of the spirit to dryness, and the different substances will be perceptible to the taste. In separat-