ounces; and rum, three quarts. Jamaica is preferable, as this wine, when made from this formula, is often prepared for the auctions. The amount of neutral spirit added, becomes an important item, owing to its cost. When this is kept in view, the tincture of grains of paradise should be substituted for spirit, and in its use the palate will guide the operator; but when the addition of spirit is required, it should be added in the proportion of five to fifteen per cent., and the tincture of grains of paradise may be combined with the neutral spirit.

Port Wine is of a deep purple color, and when new, is of a rough, strong, and slightly sweet taste. From long keeping, it deposits a large portion of its astringent matter, and loses a great part of its sweetness and acquires more flavor, and retains its strength. If too long kept, it deposits the whole of its astringent and coloring matter, and becomes deteriorated. Large quantities of neutral spirit are added to it, which causes its heating quality to the palate. It is the strongest of the wines in common use.

Port Wine.—Claret, one hundred gallons; honey, strained, twelve gallons; red tartar, one pound; powdered catechu, twelve ounces; wheat flour, made into a paste, one pint; neutral spirit, twelve gallons;
two ounces each of bruised ginger and cassia, one pint of tincture of orris-root, and color with alkanet root, or dissolve six ounces bruised cochineal in a gallon of the above spirit, and one pint of burnt sugar; this will produce the desired shade of purple. For giving artificial strength, use tincture grains of paradise, and the decoction of strong tea, in quantities to suit the palate.

If this is not perfectly transparent, fine with milk or isinglass. See directions under the head of "Finings," for their use.

*Port Wine—Cheap.*—Cider or claret, twenty gallons; honey, two gallons; carbonate of soda, twelve ounces; strong tincture grains of paradise, one and a half gallons; powdered catechu, five ounces; color with a strong tincture of logwood and a small portion of burnt sugar. The reader observes that this wine is made without the addition of any spirit, though a small portion would greatly improve it.

The object of the carbonate of soda is to neutralize a portion of acid in the wine or cider, which, if allowed to remain, would present too large a proportion of acid for good port.

*Madeira Wine* is the strongest of the white wines in general use. It is a slightly acid wine, and when
of the proper age and in good condition, has a rich, nutty, aromatic flavor.

Madeira Wine.—Take white wine, ten gallons; honey, ten pints; of equal parts of rum and neutral spirits, ten pints; five ounces of hops, one fourth pound of bitter almonds, mashed; one pint of flour paste; mix and allow it to stand for five days, then fine with a pint of boiled milk.

Madeira Wine—Cheap and good.—Water, twelve gallons; honey, one gallon; clean spirit, five quarts; hops, five ounces; bitter almonds, three ounces. Boil for twenty-five minutes, and allow to ferment by the addition of a quart of yeast; allow the fermentation to continue until the liquor tastes pleasantly acid, then fine with milk, and add three quarts of rum and four ounces of mustard—allow it to stand for a few days—the mustard should be inclosed in a thin piece of muslin and be suspended in the wine. If this wine should need more body, it can be given by the addition of clean spirit, or when it is only to be kept for a short time, the body may be given by the aid of tincture of paradise. Those preferring it, can use for making Madeira, thus:—Sherry, ten parts; port, four parts; raisin spirit or tincture of prunes, one part; and ten drops sulphuric acid for every gallon.
**Imitation of Red Wine.**—Clean, sour, or hard cider, one hundred gallons; warmed and strained honey, ten gallons; sliced red beets, thirty-five pounds. Allow this to ferment by the assistance of a quart of
IMITATION OF RED WINE.

three pints of yeast, from five to eight days, in a warm or sunny position, then draw off into suitable casks for market; then add two gallons of rum, two grains of ambergris, well rubbed up in a table-spoonful of white sugar; and spirit, five to ten gallons, and five ounces powdered catechu. If the color should be too bright, darken it to suit taste with tincture of logwood, and if not sufficiently sharp, add sulphuric acid by small quantities, until the desired taste is produced.

*Imitation of Red Wine—Cheap.*—Water, one gallon; sulphuric acid, to the strength of weak vinegar; honey, one pint; powdered alum, one half ounce; one sliced red beet, and half pint strong tincture of logwood; one drop oil of wintergreen, dissolved in a wine-glassful of alcohol; and one half of a grain of ambergris, rubbed up in sugar; one pint tincture of grains paradise. Any kind of bright sugar or syrup, will answer in the place of the honey, and in less quantities. This wine, when prepared on a large scale can be made at a very low price, as the honey is the *only* article that is of value—the tincture of the grains of paradise being substituted for spirit—and any quantity of it can be prepared at the shortest notice, the coloring is kept prepared in barrels for use; when the beets are added, the mixture is allowed to
stand for the coloring to become discharged from them for several days.

**White Wine Imitations.**—Cider, one hundred gallons; warmed and strained honey, seven gallons; clean spirit, five gallons; milk whey, five gallons; hops, eight ounces. Boil, ferment, and fine, with milk. The above milk whey is formed thus: one gallon of sweet milk, and four gallons clear water; stand together for twenty-four hours.

**White Wine—Cheap.**—Clear soft water, one hundred gallons; honey, eight gallons; yeast, three pints; keep in a warm place in the sun until fermentation causes a pleasant acidity to the taste, then add bruised bitter almonds, five ounces; ground mustard, four ounces; five gallons tincture of grains paradise, four gallons clear spirit, and six ounces horseradish. Allow the mass to stand four days, and then fine with three pints of boiled milk, to be added while hot.

**Imitation of White Wine—Cheap.**—Clear water, one hundred gallons; sulphuric acid, added to produce the strength of weak vinegar; honey, eight gallons; tincture grains of paradise, five gallons; bruised bitter almonds, five ounces; bruised horseradish.
eight ounces; five ounces of hops. This mixture should stand for thirty-six hours, and about one third of the whole should be passed through a common barrel filter. The first bed should be of a mixture of one half of ground, and the other of whole rice, to the depth of eight inches, and then through a bed of white sand to the depth of eight or ten inches; the sand to be packed with alternate layers of straw, the better to enable the fluid to filter with greater rapidity; this filtered portion is to be added to the whole. This filtering process imparts to the wine a good body and a clear white color. This is the most economical mode in use for improving wines, as the process can be applied to any of the wines. The fluid, in its course through the rice, becomes charged with minute particles of starch, &c., from the rice, which, if attempted by digesting them together, would fail, and in its passage through the sand it is deprived of all the coarse particles that could be detected by the naked eye.

The wine that has been filtered through any starch or gelatinous substances, will soon pass into fermentation, unless it contains a large portion of spirit, say from fifteen to twenty per cent. of pure spirit. Those formulas in this work, prescribing filtration, contain an excess of sulphuric acid, which will retard fermentation.
The operator will only "make up" this article as it may be wanted.

*Sweet Malaga—Imitation.*—Cider, ten gallons; inferior raisins, twenty-five pounds; honey, two gallons; clear soft water, twelve gallons; boil briskly for half an hour; strain and barrel; then, raisin spirit, one quart; or high flavored rum, one gallon; clean spirit, two gallons.

*Sweet Malaga Wine—Cheap.*—Damaged raisins, fifty pounds; water, one hundred gallons; honey, four gallons; of bruised ginger, five ounces; cassia, three ounces; boil for forty minutes, then strain into clean pipes for market; add four gallons tincture grains of paradise, two gallons of rum, and five ounces bruised bitter almonds.

*Sparkling Catawba Wine—Imitation.*—Raisins, one hundred pounds; sweet cider, thirty-five gallons; water, one hundred gallons; boil, and add three pints of yeast; ferment for twelve days, then add ten gallons of honey, twelve gallons clean spirit, one grain ambergris, rubbed well with two ounces white sugar, and added; and four gallons Jamaica rum, twelve ounces spirit of orris-root, and fine the whole with three quarts of boiled milk, added while hot.
Muscadel Wine—Imitation—Is a mixture of equal quantities Madeira and claret, by the addition of a pint of honey to every three gallons.

Champagne.—Cider, sixty gallons; clean spirit, three gallons; honey, two gallons and a half; boil and ferment; fine with milk.

2. Water, ten gallons; raisins, ten pounds; honey, one gallon; boil, skim, and ferment with yeast for ten days, using one quart of yeast; after it is drawn off in other barrels, five ounces tincture of orris, one gallon of spirit, and five drops each of lemon and orange oil, dissolved in a wine-glass of alcohol.

CHEAP CHAMPAGNE AND CHAMPAGNE CIDER.

The manufacture of the above articles is well worthy of the exclusive attention of a party who is desirous of making large profits from small investments, the operation requiring little room, and but little attention. The fixtures and appurtenances are few and simple, and the article in question can be manufactured at such a low figure that the most ruinous auction prices will pay a handsome profit.

The best champagne is made from good cider, being fermented with honey. See Formula.
Cheap Champagne.—Water, fifty gallons; honey, two gallons; bruised ginger, five ounces; ground mustard, five ounces; boil the mass for thirty minutes, and when quite cool add a quart of yeast; ferment for ten to fourteen days, first add six ounces of bitter almonds, bruised; spirit, and grains of paradise tincture, to suit convenience. The more spirit the champagne possesses, the greater will be its body. For coloring, use cochineal, half an ounce, to fifty gallons. The cheapest coloring is red beets, sliced, and added to the mass during fermentation. Five or six common-sized beets will color fifty gallons. The best of this coloring will not compare with cochineal.

Large casks, boxes, or vats made of wood, are suited for fermenting the champagne. In bottling, the cheapest plan is, after they are corked and wired, to dip them in a melted solution of one part of turpentine, one of tallow, and five of rosin, rendered fluid by heat; before this is completely dry on the cork and neck of the bottle, lay on gently one of the leaves of Dutch metal, and press it gently all around the neck, by the assistance of three or four layers of a handkerchief. This looks very neat, and can be done at a trifling cost, as the Dutch metal for each bottle could scarcely be estimated; the labels will of course be prepared by the lithographer by the quire. When bottling, if a table-spoonful of white
SWEET CIDER—IMITATION.

Sugar, or honey, be added to each bottle before corking, it will greatly improve it.

A fine aroma is added to the champagne by adding five drops of spirit of orris, or three drops of essence of wintergreen, or essence of vanilla, four drops; or dissolve five grains of ambergris in half a glass of pure alcohol; the alcohol should be kept hot for half an hour; this should, when dissolved, be added to fifty gallons of champagne. For making the above spirits and perfumes, directions will be found in another part of this work.

The drops of perfume above mentioned, are intended for each bottle. This perfume is to be well fined with milk if necessary.

To make this "pink champagne," add two ounces of bruised cochineal.

Sweet Cider—Imitation.—Water, one hundred gallons; honey, five gallons; catechu, powdered, three ounces; alum, five ounces; one quart of yeast; ferment for fifteen days in a warm position in the sun; then bitter almonds, half a pound; cloves, half a pound; burnt sugar; one quart; three gallons whiskey; if acid predominates, correct it by the addition of honey or sugar; if too sweet, add sulphuric acid to suit taste.

Cider—Imitation, Cheap.—Water, thirty-five gal.
lons; sulphuric acid, sufficient to render the water pleasantly sour to the taste; clear brown sugar, fifty pounds; add four ounces of alum, five ounces of ginger, five ounces of cloves, six ounces of bitter almonds; boil these four last ingredients in two gallons of the above fluid for two hours; strain, and add this decoction to the thirty-five gallons; if desired of a deeper color, add burnt sugar. From three to four gallons of whiskey will give this a very good body. Some manufacturers add two gallons of strong decoction of boiled dried peaches to every barrel before sending it off. The above specimen of cider will answer very well for manufacturing wines, &c., &c.
XIII.

CORDIALS.

The spirit used in the manufacture of cordials should be free of grain oil, or what is denominated clean spirit. The sugar should be refined; but in all instances honey is to be preferred. The same finings apply here as those used for other liquors, and in the same proportion.

Anisette de Bordeaux.—Common whiskey, one gallon; water, one gallon; honey, one gallon; one drachm oil of aniseed, dissolved in a wine-glass of alcohol.

Cheap Anisette de Bordeaux.—Clean clear water, thirty-five gallons; white sugar, thirty-five pounds; tincture grains of paradise, two gallons; common whiskey, five gallons; half an ounce oil of aniseed, dissolved in a pint of alcohol.

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Anisette—Common.—Water, thirty gallons; white sugar, twenty-five pounds; tincture grains of paradise, two gallons; caustic potassa, three ounces; to prevent fermentation, one ounce oil of aniseed, dissolved in a pint of alcohol, or well rubbed up with a pound of the sugar.

This last formula contains no spirit, as the tincture is substituted for spirit; the alkali prevents fermentation. The large amount of oil added greatly improves the taste, and conceals any deficiencies that would be otherwise noticed.

For coloring a beautiful rose red, bruise or mash in a mortar, or within the folds of a piece of linen, one and a half ounces of cochineal, add this to forty gallons; for the lighter shades of pink lessen the quantity of cochineal.

For any desired shade of yellow, use gamboge. For particulars, see Coloring, in another part of the work.

For barrelling anisette, thirty gallon pipes (4ths), are used; if the cordial is white, the head is plastered white. The color of the plastering on the head partakes of the color of the contents of the barrel; for example, if the liquid is rose, or pink, use Venetian red, in the plaster of Paris, which is merely mixed with water, and the desired coloring worked in dry, that is, the coloring matter is thrown
in dry, and worked up with the plaster, by the addition of water, to bring it to the consistency of batter, and must be mixed and applied with rapidity, as it hardens immediately; never mix more than is needed, for when it sets, it is unsuited for any purpose. For coloring yellow, use yellow ochre. For fawn color, use a small portion of Venetian red and yellow ochre. No liquor or cordial should be colored without first being well fined.

_Curaçoa._—Neutral spirit, five gallons; fresh orange peel, four pounds; oil of bitter almonds, one drachm, and oil of cassia, one drachm, dissolved in alcohol; honey, six quarts; Brazil wood, three ounces. Mix. Stir every day for two weeks. If not sufficiently clear, add boiled milk, and a common teacupful of burnt sugar. For a more common article, proof whiskey may be substituted in the above for neutral spirit.

_Curaçoa—Common and Cheap._—Tincture of grains of paradise, five gallons; whiskey, three gallons; water, twenty-eight gallons; honey, four gallons; white sugar, fifty pounds; oil of orange, one ounce; bitter almond oil, half an ounce; oil of cassia, one ounce; oil of cloves, two drachms. Cut up or dissolve these oils in a pint of alcohol. The oil of al-
monds to be dissolved separately from the other oils. When dissolved, add the whole of them. For coloring, add eight or ten large red beets cut in slices, and a pint and a half of burnt sugar coloring. Allow the mass to stand until the coloring is exhausted from the beets, then, if not sufficiently clear, fine with a pint of boiled milk.

For making a fine sample of curaçoa, use about four pounds of sugar or a quart of honey per gallon, and color with cochineal and burnt sugar.

_Maraschino._—Whiskey, one gallon; oil of bergamot, one drachm; oil of cloves, one drachm; spirit of nutmegs, four ounces; oil of orange, three drachms; oil of lemon, one drachm; oil of bitter almonds, one drachm; oil of cinnamon, three drops. Mix, by heat, one gallon of honey with six quarts of water; and when cool, mix with the above. In manufacturing this, as in all other cordials and liquors, the tincture of grains of paradise can be substituted for alcohol.

The operator should bear in mind that all essential oils must be dissolved in alcohol, or their particles minutely separated by being well rubbed up in dry sugar, though the dissolution of the oil by alcohol is to be preferred. The whiskey used in these cordials does not contain spirit sufficient to act on
the oils. Quart bottles are the most convenient articles for dissolving essential oils in.

*Ratafia d'Angélique.*—Angelica seeds, two ounces; blanched bitter almonds, ten ounces; whiskey, ten gallons; twenty pounds of sugar dissolved in two gallons of water. Digest for twelve days, and fine.

*Ratafia de Fleurs d'Oranges.*—Fresh orange flowers, twelve pounds; clean spirit, five gallons; honey, two quarts, dissolved in one gallon of water. Macerate for two weeks, and strain.

*Ratafia de Noyeau.*—Bruised bitter almonds, three ounces; whiskey, one gallon; honey, one quart, dissolved in three pints of water; bruised cassia, a quarter of an ounce; bruised cloves, a quarter of an ounce. Mix and digest for fifteen days, and strain.

*Rose Cordial.*—Honey, eight gallons; water, thirty-three gallons; red rose leaves, four gallons. Put them hot into a cask with a pint of yeast, and ferment. Afterwards add four gallons of clean spirit, one and a half ounces of powdered cochineal, and five ounces of powdered orizaba. Allow it to stand one month, and bottle.
Orange Oil.—Oil of orange, dissolved in alcohol, one ounce; oil of lemon, the same quantity; spirit of orris-root, one pint; essence of ginger, three ounces; clean spirit, two gallons; powdered mustard, four ounces; three gallons of honey dissolved in one gallon of water. Mix well, and pass through the filtering bag.

The oils of orange and lemon to be cut up in alcohol, and mixed with the two gallons of spirit; then half an ounce of English saffron for a fine yellow color.

Ratafia.—Take of nutmegs, eight ounces; bitter almonds, six pounds; ambergris, five grains, rubbed up in a small portion of sugar; honey, three quarts, dissolved in three pints of water. Mix the above with seven gallons of clean spirit. The nutmegs and bitter almonds should be mashed or bruised. The bitter almonds should be well mixed with the honey and water before adding it to the mass. When the ingredients are well mixed, pass them through the filtering bag.

Pineapple Cordial.—Clean spirit, one gallon; water, two gallons; honey, two quarts; bruised bitter almonds, six ounces; butyric ether, two ounces. The almonds should be fresh.
Butyric ether is distilled from rancid butter, by first saponifying the butter with alkali, and distilling it with sulphuric acid. This ether possesses a powerful odor of pineapples.

This ether is also used for flavoring common ale, which is known under the name of pineapple ale. It is used in the proportion of six ounces to forty gallons.

Crème de Macarons.—Proof whiskey, one gallon; water, one and a half gallons; honey, one gallon; bruised bitter almonds, half an ounce; powdered cloves, fifty grains; powdered cinnamon, fifty grains; powdered mace, fifty grains. Color to slight violet with turnsole and cochineal. Macerate for ten days.

Crème de Noyau de Martinique.—Clarified sugar, one hundred pounds; clean spirit, fifteen gallons; orange flower water, half a gallon; bruised bitter almonds, four pounds; essence of lemon, one ounce; water, twenty-five gallons. Macerate the almonds and the essence in the spirit for fourteen days, then add the sugar, previously dissolved in the water. Allow them to digest together for one month.

Crème des Barbadoes.—Sliced lemons, two dozen; clarified sugar, thirty pounds; proof spirit, three
gallons; water, four gallons; six large citrons, fresh balm leaves, half a pound. Put the fruit in the spirit, and macerate for four days; then pour the water on the balm leaves, and steep for half an hour, and then strain the liquor on the sugar, and lastly add the spirit.

*Crème d'Orange.*—Sliced oranges, six dozen; orange flower water, one gallon; clean spirit, four gallons; English saffron, half an ounce. Macerate for two weeks, and then add twenty pounds of white sugar, and two gallons of honey dissolved in ten gallons of clean, clear water.

*Eau de Melisse.*—Spirit of lemon peel, two quarts; spirit of nutmegs, one quart; spirit of coriander, one quart; spirit of rosemary, one pint; spirit of marjoram, one pint; spirit of thyme, one pint; spirit of hyssop, one pint; spirit of cassia, one pint; spirit of sage, one pint; spirit of aniseed, one pint; spirit of cloves, one pint; spirit of angelica, one pint; honey, two gallons; whiskey, four gallons; water, three gallons. Mix the honey and water; then mix the whole mass. Allow it to stand for four days. Color with half an ounce of bruised cochineal.
Eau Divine.—Essence lemon, one drachm; bergamot, one drachm; spirit, one gallon; macerate for four days, frequently shaking the mixture; then add water, two gallons; sugar, four pounds; orange flower water, one pint; mix and filter through sand.

Elephants' Milk.—Benjamin, four ounces; alcohol, two gallons; balsam of tolu, one ounce. Dissolve—then add sugar, twenty pounds, dissolved in three gallons of water; mix well, and strain through a filtering bag.

Almond Milk.—Sweet almonds, one ounce; bitter almonds, three ounces; white sugar, one and a half pounds; clear water, two pints.

Remove the husks from the almonds by steeping them in hot water for a few minutes; by rubbing them together, the husk will rub off; then beat them in a mortar with the sugar, and add the water gradually. Lastly, strain, and add half a glass of orange flower water, or the same of nerolia. For instructions in manufacturing essences, spirits, and perfumes for liquors and cordials, look under their appropriate heads in this work.

English Frontignac.—Water, six gallons; white sugar, twelve pounds; mashed raisins, six pounds.
Boil these together for one hour, then add one peck of elder flowers, and put them in the liquor when it is nearly cold. The next day put in a tumbler of good vinegar, and a pint of good yeast; then put it in a clean cask, with twelve pounds of raisins, and bottle in three months.

**Gold Cordial.**—Angelica root, four pounds; oil of orange, fifty drops; raisins, five pounds; bruised coriander seeds, half a pound; bruised caraway seeds and cassia, each half a pound; bruised cloves, two ounces; English saffron, two ounces; sliced liquorice root, two pounds; clean spirit, fifteen gallons. Macerate for twelve days; add sugar, thirty pounds, dissolved in five gallons water; mix, and fine with egg or milk.

**Ratifia à la Violette.**—Orris-root powder, four ounces; archil, four ounces; neutral spirit, two gallons. Digest for one week, then add honey, three quarts, dissolved in four pints of water. Mix and strain; color with turnsole to suit taste, by allowing the coloring matter to digest with the liquor several days.

**Sunny South (Cordial).**—Water, five gallons; honey, three gallons; mix. Take three gallons of
Milk of Juleps.

Whiskey, and digest three pounds of prunes in it for a week, and dissolve ten drops of oil of sassafras, five drops of oil of partridge-berry, and fifteen drops of oil of lemon in half a pint of alcohol; and to the above three gallons of whiskey with the prunes, add one pound of nutmegs, half a pound of cloves, and four ounces of ginger, all well bruised; also, one ounce of cochineal. Allow the whole of the above, along with the prunes, to digest for one week, and then strain through flannel, and mix the whole. This will be of a deep red color.

Cream of Juleps.—Refined sugar, two pounds; sweet almonds, blanched, one pound. The almonds are blanched by being heated in warm water a few moments, and then rubbing them through the hands, until the husks rub off. Work the almonds to a paste with an addition of the sugar and water. This should be done in a mortar; then strain through a linen cloth, and mix the remainder of the sugar with one and a half pints of water; then add half an ounce of essence of peppermint.

Milk of Juleps.—Benjamin, one quarter pound clean spirit, two gallons; balsam of tolu, one ounce; dissolve; then add refined sugar (in three gallons water) twenty pounds; essence of peppermint, one-
quarter ounce; essence of cloves, ten drops; essence of ginger, twenty drops.

**Peach Juice Cordial.**—Honey, two and a half gallons, dissolved in one gallon water; sulphuric acid, half an ounce; rum, four pints; powdered mustard, four ounces; powdered catechu, one ounce; cinnamon bark, broken to small pieces, three ounces; digest these last named articles in the rum for thirty-six hours, and then strain; to this add acetic ether, one ounce; spirit of vanilla, two ounces; tincture of cochineal, four ounces.

**Sarsaparilla Cordial.**—Honey, two gallons; water, two gallons—mix; whiskey, three quarts; calamus, two ounces; cloves, three ounces; powdered liquorice root, eight ounces; digest these three last named articles in the three quarts of whiskey for twenty-four hours; then strain and add; then dissolve in four ounces of alcohol, oil of sassafras, oil of anise, each twenty drops; oil of partridge berry, six drops. Color with tincture of cochineal four ounces, burnt sugar coloring five ounces, if necessary; fine with five eggs.

**Strawberry Juice.**—Honey, two gallons; water,
AROMATIC CORDIAL.

one gallon; tartaric acid, two ounces; strawberries, two gallons; clean spirits, half gallon.

The strawberries are put in a bag and subjected to pressure; the expressed juice is then added to the honey and water.

Raspberry Juice.—Same as strawberry.

Jessamine Cordial.—Clarified sugar, twenty pounds; water, three gallons; decoction of strong tea, one quart; half gallon whiskey; sweet almonds, husked or blanched by standing in hot water, and rubbing them through the hands until the husks are removed, one pound; they should be worked to a stiff, fair paste in a mortar, by the addition of a quart of water; then strain through a linen cloth, and add the strained liquid to the above. Spirit of jessamine, two ounces; ambergris, two grains, rubbed well with sugar (about two ounces). This cordial is colored yellow, with a tincture of saffron or gamboge. The whiskey mentioned in the text should be uncolored.

Aromatic Cordial.—Digest in five gallons of whiskey for five days, one quart of orange peelings; four ounces of cloves; six ounces of bruised ginger; half pound of ground mustard. Strain off the spirit, and
add to this, dissolved in alcohol, one-quarter ounce of cinnamon; same of oil of cloves; twenty drops of oil of sassafras; ten drops oil of orange; one-quarter ounce oil of lemon; five drops oil of anise. Then dissolve twenty-five pounds of refined sugar in one and a half gallons of water, and add it to the whiskey as above. This is colored by the addition of one-quarter pint of burnt sugar coloring.

Almond Cordial.—Honey, two gallons; clean spirit, two quarts; water, to dissolve honey, three quarts; blanched sweet almonds, worked into a stiff paste in a mortar, four pounds. This paste is washed on a fine sifter, with one quart of water. The water is passed through the paste repeatedly, and is then added to the honey and spirit, with twenty drops oil of almonds, dissolved in one ounce of alcohol. The spirit used should be colorless. Color with two ounces tincture of gamboge, and one ounce of burnt sugar.
XIV.

THE MANUFACTURE OF SODA, MINERAL,

AND OTHER

CARBONATED WATERS,

WITHOUT THE USE OF ANY APPARATUS, AND ALSO FOR THE
MANUFACTURE OF ALL KINDS OF ACIDULATED BEVERAGES
BY FERMENTATION.

SODA WATER.

Fill two thirds full, a soda fountain or a well
hooped oaken keg; this keg may be of any conveni-
ent size and well bound with iron hoops, and should
be air-tight, to prevent the escapement of gas;
the keg should be arranged, in every respect, that it
would be if any other fluid was to be drawn from it,
with the exception that a VENT-HOLE will be unneces-
sary. Fill this two thirds full of clean soft water,
and to every gallon add of super-carbonate of soda
and tartaric acid, of each from one to three ounces.
The more acid and alkali that is added, of course
will generate a greater quantity of carbonic acid.
gas, and hence the briskness and effervescence will be increased in a greater ratio.

The soda and acid should, in separate parcels, be coated with sugar; this will be easily done by stirring them into hot melted sugar, and allowing it to cool. The object of this is to prevent the too rapid dissolution of these articles at the moment that they are added to the water in the keg.

This being concluded, the keg or fountain should be closed immediately.

The syrups for this beverage will be found under the proper head.

*Carbonic Acid Water* is commonly called "Soda Water" and "Mineral Water." The former name originally applied to the preparation when it contained a small portion of carbonate of soda, being from habit continued since the alkali has been omitted, and as this water is largely consumed as a beverage, a sketch of the apparatus employed in its manufacture may prove interesting to the non-professional reader.

This consists of a generator, gasometer, forcing-pump, reservoir or fountain, and refrigerator. The generator is usually formed of a wooden tub something like a churn, into which the diluted sulphuric acid is put; on this is luted a small cylindrical
SODA WATER.

wooden vessel, through the bottom of which passes a wooden stirrer; this vessel is filled with marble dust, which, by the movement of the stirrer, is made gradually to fall into the acid below, generating the carbonic acid, which, by a lead pipe, is conducted into a gasometer; this is a large cylindrical tub, in which another is inverted, suspended by a pulley. As soon as the gasometer is full, which should have five or six times the capacity of the reservoir, the operation of condensing the gas into the latter is commenced. This is effected by a condensing pump, the chamber of which is made to communicate by leaden tubes on opposite sides with the gasometer and reservoir. The latter, usually called the fountain, is a very strong cylindrical copper vessel, with hemispherical extremities, tinned on the inside, and before receiving the carbonic acid, it is nearly filled with water. When the water has been duly charged with the acid gas, it is drawn off as it is wanted, by means of a stop-cock, connected with a tube which passes to the bottom of the reservoir. The tube may be of any desired length, so as to draw off the water at a distance from the reservoir, or the fountain can be placed under the counter, allowing the water to pass through a serpentine or worm, which is packed with ice. This serpentine terminates in a tube provided with a stop-cock above the counter.
SODA AND MINERAL WATERS.

The acid gas for the impregnation of the water, is always obtained from marble dust by the action of sulphuric acid, these being the cheapest materials for the purpose. Chalk may also be used, but is objectionable on account of its communicating an unpleasant smell to the carbonic acid. When sulphuric acid is employed, sulphate of lime is formed, which interferes with the action of the acid, and hence it is necessary to stir the mixture to render the decomposition of the carbonate complete.

EFFERVESCING SARSAPARILLA.

Take a keg similar to that mentioned under the head of Soda Water, and to every gallon of clean rain water, add one pint of the decoction of liquorice root, which is formed by boiling three ounces of the root for one hour in a pint of water, then proceed to add to every gallon of the water, white or brown sugar, one quarter of a pound; oils of sassafras and aniseed, of each, ten drops; oil of wintergreen, six drops; brandy coloring or burnt sugar, one quarter of a pint; infusion of ginger, one pint. This infusion is prepared by boiling for one hour, four ounces of bruised ginger to every pint of water, and then straining. Having added to the keg the water, the decoction of liquorice root, the sugar—having first worked the oils up well in a small portion of the