

Holland enjoys a large trade in the exportation of its gin. Its home consumption, which is considerable, consists of a gin at 45 to 49 centesimal degrees. The large factories of this product are at Scheidam (Schnaps). This town contains more than two hundred gin distilleries.

In Sweden and Norway, a sort of gin is prepared by simply digesting the juniper berries for some days in spirits at 50 or 55 degrees. This process is very objectionable, because it communicates to the liquor a very disagreeable sharpness. It is preferable to employ the process described hereafter, which consists in distilling the berries after sufficient maceration with alcohol at 85 or 90 degrees, and to reduce the product of the operation to 49 degrees.

The gin, which is consumed in the North of France and Belgium, is often nothing more than whiskey from rye and barley, or rather from potatoes and barley, and the taste which characterizes it is that of grain. This gin has an odor which is by no means agreeable, and far from being delicate, yet it is very much preferred by those who like this kind of spirits.

## CHAPTER IX.

### THE MANUFACTURE OF SWISS ABSINTHE.

Swiss absinthe at the present time constitutes the object of considerable trade and a special manufacture. Portarlier, Montpellier, and Lyons, are cities in which it is manufactured in very great quantities. We shall describe the article as produced in each locality, assuming that the quantity of Swiss absinthe to be made is one hectolitre.

#### Absinthe of Portarlier.

Larger absinthe, dried and ground,	2 kilogrs., 500 grms.
Green anise . . . . .	5 "
Fennel . . . . .	5 "
Alcohol at 85° . . . . .	95 litres.

Digest these ingredients for at least twelve hours in a water bath, add 45 litres of water when ready to distil, close the apparatus, and distil off 95 litres of perfumed spirit. Continue the operation until all the phlegm is drawn off, and set it aside for another operation.

The green color is given by the following process:—

Small absinthe, dried and picked . . . . .	1 kilogr.
Hyssop (tops and flowers), . . . . .	1 "
Lemon balm, dried and picked . . . . .	500 "
Perfumed spirits, from the preceding operation,	40 litres.

Divide or cut up the small absinthe, reduce the hyssop and balm to a powder in a mortar, put the whole into a water-bath with the perfumed spirits, lute immediately, then heat gently, so as to produce a very moderate and gradual heat, and, so soon as the hand cannot be placed on the cap, withdraw the fire quickly from beneath the apparatus, in order to prevent the liquid from being distilled. Allow it to cool entirely before withdrawing the still from the water-bath, then pass the colored liquor through a hair cloth to drain the plants; add this product to the 55 litres of perfumed spirits that are reserved, and reduce to 74 degrees by adding five litres of water, which will bring the quantity up to 100 litres.

#### Absinthe of Montpellier.

Large absinthe dried . . . . .	2½ kilogrammes.
Green anise . . . . .	6 "
Florentine fennel . . . . .	4 "
Coriander . . . . .	1 "
Angelica seed . . . . .	500 grammes.
Alcohol at 85° . . . . .	95 litres.

Distil as in the preceding case. The color is made also in the same way with the following ingredients:

Dried hyssop, (herb and flowers),	750 grammes.
Dried balm of Moldavia . . . . .	750 "
Small absinthe . . . . .	1 kilogr.

## Absinthe of Lyons.

Large absinthe, dried	3 kilogrammes.
Green anise	8 "
Fennel	4 "
Angelica seed	500 grammes.
Alcohol at 85°	95 litres.

## Coloring.

Dried and selected lemon balm	1 kilogramme.
Small absinthe dried	1 "
Hyssop tops and flowers dried	500 grammes.
Dried veronica	500 "

## Absinthe of Fougérolles. (For 600 Litres.)

Green anise	45 kilogrammes.
Fennel	25 "
Larger absinthe	16 "
Alcohol at 85°	570 litres.
Water	300 "

Digest for at least twelve hours with the alcohol in a proper apparatus, add the water at the time of distilling, draw off 570 litres of perfumed spirits. When this quantity has been obtained continue the distillation until all the phlegm has been distilled off and set aside for another operation.

## Coloring.

Lemon balm	4½ kilogrammes.
Hyssop	3½ "
Lesser absinthe	4 "
Veronica	4 "

Treat as for that first described and reduce the mixed spirits to 74° by the addition of enough water to bring the quantity up to 600 litres.

## Absinthe of Besançon. (For 600 Litres.)

Great absinthe	24 kilogrammes.
Green anise	30 "
Fennel	40 "
Coriander	4 "
Alcohol at 85°	570 litres.
Water	300 "

To be treated as above.

## Coloring.

Balm	3 kilogrammes.
Less absinthe	6 "
Hyssop	5½ "
Treat as the last.	

## Absinthe of Nimes. (For 600 Litres.)

Great absinthe	22½ kilogrammes.
Green anise	22½ "
Fennel	15 "
Coriander	2½ "
Roots of the black alder	1½ "
Angelica root	1½ "
Alcohol at 85°	570 litres.
Water	300 "
Treat as above.	

## Coloring.

Less absinthe	5 kilogrammes.
Hyssop	4½ "
Balm	1½ "
Veronica	2½ "
Mint	2½ "
Treat as before.	

It is always optional to diminish or increase the quantities of the ingredients in the foregoing recipes according to the taste of the manufacturer, or the price of the article he wishes to produce; but this fact must be borne in mind, that it is only age that will give to absinthe that softness so much prized by consumers.

*Remarks.*—The greatest pains should be taken in the selection of the materials, especially the plants intended for the coloring; these should be very green and dry, and free from black and mouldy leaves. The seeds should be powdered in a mortar, and the great absinthe picked over and ground.

The distillation of absinthe should be effected in a Turk's-head still, in a water-bath, or, what is better, by steam, in order that the essential oils may rise with more facility, especially towards the close of the operation; because the phlegm is employed in another operation.

tion, in which it is most useful, by adding to the perfume through the large proportions of essential oils it contains.

The coloring is of the highest importance. The plants are finely divided, or reduced to powder, and covered with perfumed spirits; then heated gently, in order to extract the chlorophylle or coloring principle. After cooling, the colored spirit is drawn off clear, and the plants are drained. They may still, after this operation, serve for coloring a smaller quantity of absinthe. They are then subjected to distillation, to collect and save the small quantity of alcohol still adhering to them.

In the large factories, the extract of absinthe is colored in tinned copper vessels, containing about twenty hectolitres—they are called *colorers*. These vessels, hermetically closed, are heated to 60 degrees by means of steam.

The coloring may be made in the cold way, but the operation requires many days, and a large quantity of plants, which considerably increase the acridity of absinthe.

When the coloring and perfumed spirit, held in reserve, have been mixed, the alcoholic strength is tested and reduced to 74°, although absinthe is never sold above 72°; but, by rest and time, there is always some loss which must be provided against.

The green color of absinthe becomes yellowish by age, and then has a dead-leaf tinge. The green tint may be preserved by adding, after the mixture, fifteen grammes of *alum*, dissolved in a glass of water; but consumers generally prefer the yellow tint. By age, absinthe improves in quality, by losing its sharp and empyreumatic taste, which is communicated by the distillation and coloring.

It is to be remarked that it is not the great variety of substances introduced into the manufacture that constitutes the great merit of absinthe, but rather the rational combination of a small number having peculiar virtues: thus, the anise serves to produce the whiteness; the fennel corrects the piquant and sugary taste of the

anise, at the same time adding something to the flavor; the hyssop fulfils the same end, while it yields a beautiful green color, which the balm increases still more. Finally, the lesser absinthe, by its slightly yellowish tinge, modifies the excessive brilliancy of the green color, while its slight bitterness and aroma, added to those of the great absinthe, impart to this liquor the characteristics peculiar to a well-made product.

Absinthe is considered as being of good quality when, on being diluted with water, it becomes white, and exhibits the colors of the opal, which is due to the essential oils from the seeds, and the resinous and coloring matters of the plants, which, under these circumstances, are set at liberty, and form, with water, the milky compound so highly prized. In this state, it should be pleasant, agreeable, odorous, and sweetish. Sharpness and tastelessness are always signs of a recent manufacture.

Absinthes of inferior quality are often met with in the market. Some are manufactured without distillation, essences being used to replace the seeds and plants; some are distilled with *trois-six* from beets, &c., which leaves much to be desired in flavor; some are prepared with old or damaged materials, while, finally, there are others which, after the distillation have had added to them aromatic resins, such as benzoin, guaiacum, &c., in order to increase the opalescence.

## White Absinthe.

Greater absinthe, selected	2 kilogrs., 750 grms.
Less absinthe	1 kilogr., 125 "
Hyssop flowers	1 " 100 "
Veronica	550 grammes
Genepi	550 "
Roman chamomile	225 "
Green anise	5 kilogrs., 250 grms.
Fennel	5 " 250 "
Coriander	1 kilogr.
Angelica seeds	550 grms.
Alcohol at 85°	96 litres.

Conduct the maceration and distilling in the same way as for green absinthe; then rectify the product, and reduce to 74°.

The abuse of absinthe, even diluted with water, is most deleterious to the animal economy. Taken pure, it occasions serious disorders of the stomach and brain. It is not to the alcohol alone that these injurious effects are to be attributed, but more especially to the large quantity of essential oils of anise and fennel which it contains.

**Apparatus for Manufacturing Absinthe and Perfumed Spirits.**

This apparatus, Pl. VIII., consists of the following parts:—

*A.* Kettle inclosed in a wooden jacket, acting as a water bath inclosing another kettle, which contains the alcohol and herbs to be distilled.

*B.* Top or cover of the boiler (still).

*C.* Opening closed by a plug for charging the still.

*C*<sup>1</sup>. Opening like the above for discharging the plants after distillation.

*D.* Cap of the still fastened on by a circular collar, and terminating in a neck which conducts the alcoholic vapors to the cooling coil.

*E.* Cooler with its coil.

*E*<sup>1</sup>. Discharge pipe of the condensing coil.

*F.* Colorer, furnished like the still, with plugs through which to fill and empty it.

*G.* Pump firmly fastened to the wall by the collars *G*<sup>1</sup>.

*H.* Piston rod.

*I.* Eccentric for driving the pump.

*J.* Pulley on which a band runs to connect with the power.

*K.* Bearings for pulley shaft.

*L.* Tank, or well of metal, sunk in the floor.

*M.* Suction pipe.

*M*<sup>1</sup>. Suction pipe connected with colorer.

*N.* Three-way cock, attached to the suction pipe to draw any liquid from the tank to deliver it in the still, in

the colorer, or to the store-room, or to draw the finished liquor from the colorer, and deliver it in the store-room.

*N*<sup>1</sup>. Pipe for drawing off the colored product.

*O.* Force or delivery pipe.

*P.* Three-way cock, which directs liquids at pleasure into the still or the colorer.

*P*<sup>1</sup>. Pipe delivering the liquid into the colorer.

*P*<sup>11</sup>. Pipe to convey the liquor into the still.

*R.* Cock and pipe for delivering the manufactured product into the store-room.

*S.* Funnel and pipe to convey the distilled product to the tank.

*T.* Main steam-pipe connected with steam boiler.

*U.* Steam-cock for the kettle of the still.

*V.* Steam-cock for the colorer.

*Management of the Apparatus.*—The principal advantages of this apparatus are its great simplicity and the small number of pieces constituting it. One pump, by its multiplicity of uses, is sufficient for three different transfers of liquid.

1. It fills the boiler of the still *A* with alcohol and water.

2. It fills the colorer *F* with the distilled product which flows into the tank by the funnel and pipe *S*.

3. It draws the liquid from the colorer *F*, to send it to the store cisterns by the pipe *R*.

The apparatus is set in operation as follows:—

Having filled the tank *L* with water and alcohol in the proper proportions, and having placed in the boiler of the still through the upper opening the plants necessary to the manufacture of the absinthe, the cock *PP*<sup>1</sup> is opened, and the pump set to work; the boiler *A* is immediately filled from the contents of the tank *L*. When the tank is empty, the motion of the pump is stopped and the cock *P* is closed. The steam is turned on by opening the cock *U*, and the product soon begins to flow from the lower extremity of the condensing coil, falls into *S*, and again fills the tank *L*; but now it is spirits perfumed by the plants that were placed in the still. The liquid is white, and possesses already a great



