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NEW TREATISE
ON THE
FABRICATION OF LIQUORS

WITH
THE LATEST PROCEDURES

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WITH 51 ILLUSTRATIONS IN THE TEXT

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Absinthe

PRELIMINARY OBSERVATIONS

To make the alcoholic beverage known as absinthe, there exists a legion of recipes that quite naturally vary in quality in proportion to the price of the product.

It follows that absinthe producers modify their recipes to suit the tastes of the consumers in the regions in which they operate.

The plants that form the basis of the drink are:

Grand wormwood
Petite wormwood
Anise
Fennel
Hyssop

We say “basis”, because many manufacturers are not content with those five plants, and include in their distillations several other products, such as: star anise, melissa, mint, nettle, coriander, iris, solution of benzoin, etc.

The best absinthes are, in our opinion, those of the simplest composition.

Before broaching the subject of distillation itself, it will not be fruitless to say a word about the choice of herbs. As everyone knows, there are two kinds of wormwood: the wormwood known as Pontarlier and the wormwood known as Paris. The first is harvested around Pontarlier, in Switzerland, etc, and the second around Paris, Orly, etc.

It is important for the manufacturer to buy only herbs that are well dried, not mildewed, and not deteriorated. For absinthes of higher quality, it is preferable to use only Pontarlier wormwood. It should however be recognized that Paris wormwood is today the object of a booming trade, thanks to the intelligent care that the farmers of the capital area have applied to the culture of the plant, which has improved it considerably.

What we just said about choosing plants applies equally to fennel; the intelligent manufacturer will buy only seeds with body, that is to say, full seeds, well preserved; he will not allow himself to be tempted by the low price of the scrawny fennels of doubtful scent, as we have had occasion to see frequently on the market.

Anise plays a major part in absinthe, it must thus be the object of serious attention on the part of the distiller. We have in France top quality varieties of anise, such as anise from Tours and from Albi; but, precisely because of their quality, these two varieties are so expensive that they cannot be economically used to make common absinthe¹. They are replaced with anise from Alicante or Russia. The latter generally contains many impurities, such as dirt, pebbles, etc. for which it is important to account in purchasing; it is disencumbered by washing with water before use.

With regard to wormwood and hyssop, it is above all the leaves and flowering tops which contain the finest aroma; such that, to produce an absinthe of superior quality, there is an advantage in stripping the plants so as to exclude all the stems and use nothing but the leaves. This is perhaps the key to the smoothness of certain brands and their success with the public.

Generally, the different plants are mixed and distilled together, but some manufacturers separately distill wormwood, anise and fennel before mixing the products of the three distillations.

Once the bill of ingredients is prepared, one puts it into the still, charged with the necessary quantity of alcohol and half the quantity of water needed for distillation; the maceration will be better as a result, because if all the water was added at once, the alcohol would be diluted too much, its solvent capacity would be notably decreased, and it would capture only part of the useful materials extractable from the plants. It is likewise if the maceration is done with pure alcohol: plants suddenly immersed in high proof alcohol seem to undergo a kind of hardening which, up to a certain point, stalls the development of their aroma.

Before distilling, one allows a maceration of from 12 to 24 hours, and longer if the workload permits; the product will only be better and the perfume more concentrated as a result.

DISTILLATION

Distillation must be conducted slowly and with much care to avoid the sudden starts and the *coup de feu*² which are very harmful to the quality of the product.

Some distillers, once the distillation is underway, distill until the product marks zero on the alcohol meter and then rectify to end with a finished product of around 60% alcohol, and join the leftovers with the phlegms³. Those are then rectified in turn and used to create absinthes *ordinare*.

This method is defective, for the very simple reason that by distilling to zero percent (alcohol), the absinthe will always have a pronounced flavor of phlegms in spite of rectification; it will thus cost more to make but come out worse.

It is best to conduct the distillation with care and to stop as soon as the first spurt of product measures 60% (alcohol); one will thus avoid rectification while having a more correct and less expensive product. The heads and the tails, that is to say the wormwood phlegms, will be put aside, as we mentioned previously, for the manufacture of absinthes *ordinaire*. The white milky product which runs off at the end contains much essence, one pours it into a subsequent batch with the alcohol and the plants.

COLORATION

Like all carefully distilled liquids, absinthe extract (the heart) is colorless and perfectly clear. To prepare it for use, it is necessary to color while at the same time refining its scent.

Coloration is done hot, by macerating a mixture of petite wormwood and hyssop in the liquid obtained by distillation. Of particular use is a special apparatus, known as a colorator, made of galvanized copper and heated by circulation of hot water or steam.

One places into the colorator substances chosen according to the grade of absinthe one wants to obtain; these substances then lend to the alcoholic product their coloring principle⁴ as well as their scent. The greater the heat, the more the color comes out yellow, and the more it tends to lend to the drink an unpleasant grassy taste; the greater the proportion of petite wormwood, the darker the color comes out; the greater the proportion of hyssop, the more the color approaches that of cognac or autumn leaves. After 12 hours of contact, the color is acquired by the liquid; it is cooled and placed into barrels for aging. It is time which completes the quality.

Coloring can also be done cold, but that takes several days and a greater quantity of plants, which increases the acidity of the absinthe.

Certain distillers cut the absinthe before transferring it to the colorator, already furnished with the quantity of plants necessary for coloration, of which we will give the basis later. This practice can have a good result when one wants to give the absinthe an autumn leaf yellow color rather than a beautiful olive green.

Apart from this consideration, it is preferable to put into the colorator absinthe at the same proof with which it left the still, that is to say, around 75-76%, and to cut it after it leaves the colorator and after cooling, on its way to the barrels. The reason is that high proof absinthe is better able to hold all the colorant the herbs can lend; if the coloration of the absinthe is too intense, it can always be decreased with an addition of uncolored absinthe. The green part of the color is very unstable, the excess color precipitates quickly during aging, and after it rests for some time in the barrels the absinthe acquires a very pretty color.

The colorator having been emptied of an absinthe coloration as we have just described, the plants will not be completely exhausted and they can be recharged with absinthe of common quality which will serve to exhaust them. The coloring of these absinthes being weak, it can be completed by an addition of caramel and bluing solution.

The infused plants retain a certain amount of alcohol and essence; to recover it, absinthe phlegms destined for rectification are poured onto them. One can thus economically complete two operations at the same time: exhaustion of herbs and rectification of phlegms. The product of this rectification is used to prepare absinthes *ordinaire*. But for this operation, it is essential to fit a swan neck to the colorator, which is neither expensive nor difficult. The apparatus can successively be used as a mixer, colorator and still to distill phlegms, light alcohols, and residues from the manufacture of spirits and liquors, such as fining sediment, barrel dregs, filtration residues, etc.

PREPARATION AND USE OF GUAIAIC EXTRACT

Extract of guaiac, also called white extract in distiller's parlance, is generally used in the amount of two liters per thousand to make absinthes *ordinaire* turn white.

Here is how extract of guaiac is prepared: Crush the guaiac in a bronze mortar, then put it into a ceramic pot, pour in two liters of 95% alcohol, and let macerate for 15 days while stirring from time to time with a spatula to help completely dissolve the material. The resin dissolves correctly at 100 grams per liter of 95% alcohol. Extract of guaiac must be measured in carefully, because if on the one hand it has the advantage of making absinthe whiten at the time of consumption, it also has the disadvantage of giving it a characteristic acidity, causing dryness at the back of the throat which is easily recognized by absinthe drinkers. It is necessary to restrict its use to common absinthes of low proof which will not support a great quantity of essence.

ADDITION OF ESSENCE OF STAR ANISE

Essence of star anise is correctly used at 500 grams per 1000 liters of absinthe, that is, 1/2 gram per liter. Essence of star anise is best dissolved at six grams of essence in one liter of 90% alcohol.

USE OF PULVERIZED LICORICE

If it is necessary to limit the use of guaiac resin, the same can't be said of pulverized licorice, which exerts upon absinthe the best of effects; it gives it brilliance and marrow, like a sort of aging, and at the same time it serves to fine it. As it is more soluble in water than in alcohol, it is mixed with 10 times its weight in water poured into the absinthe, agitated vigorously; then left in contact for 12 hours.

The quantity of powdered licorice to use is 25 grams per hectoliter of absinthe.

As we have just seen, licorice powder can replace the fining of absinthe; but it is preferably used concurrently with antimony. To this end, care will be taken to pulverize it well, dissolve it in boiling water, agitate it well and let it rest. This first water has a particularly unpleasant flavor, it is thrown away, and the antimony is recharged with fresh water alcoholized at 10%, to ensure it keeps if it is not immediately used.

Antimony is generally used in the amount of 100 grams per hectoliter, prepared as we have just indicated.

The high proof absinthes are self-clarifying because of their alcoholic strength, it suffices for them to let them rest for a while.

SPECIAL STEAM STILL FOR MAKING ABSINTHE

Absinthe can be made in an ordinary still; but it requires several manipulations which can be eased considerably by the use of the appropriate special stills.

The Ergot style still of red copper, equipped with all the improvements and which can be tilted, is heated with steam by means of a serpentine which, on request, can be replaced by a double bottom.

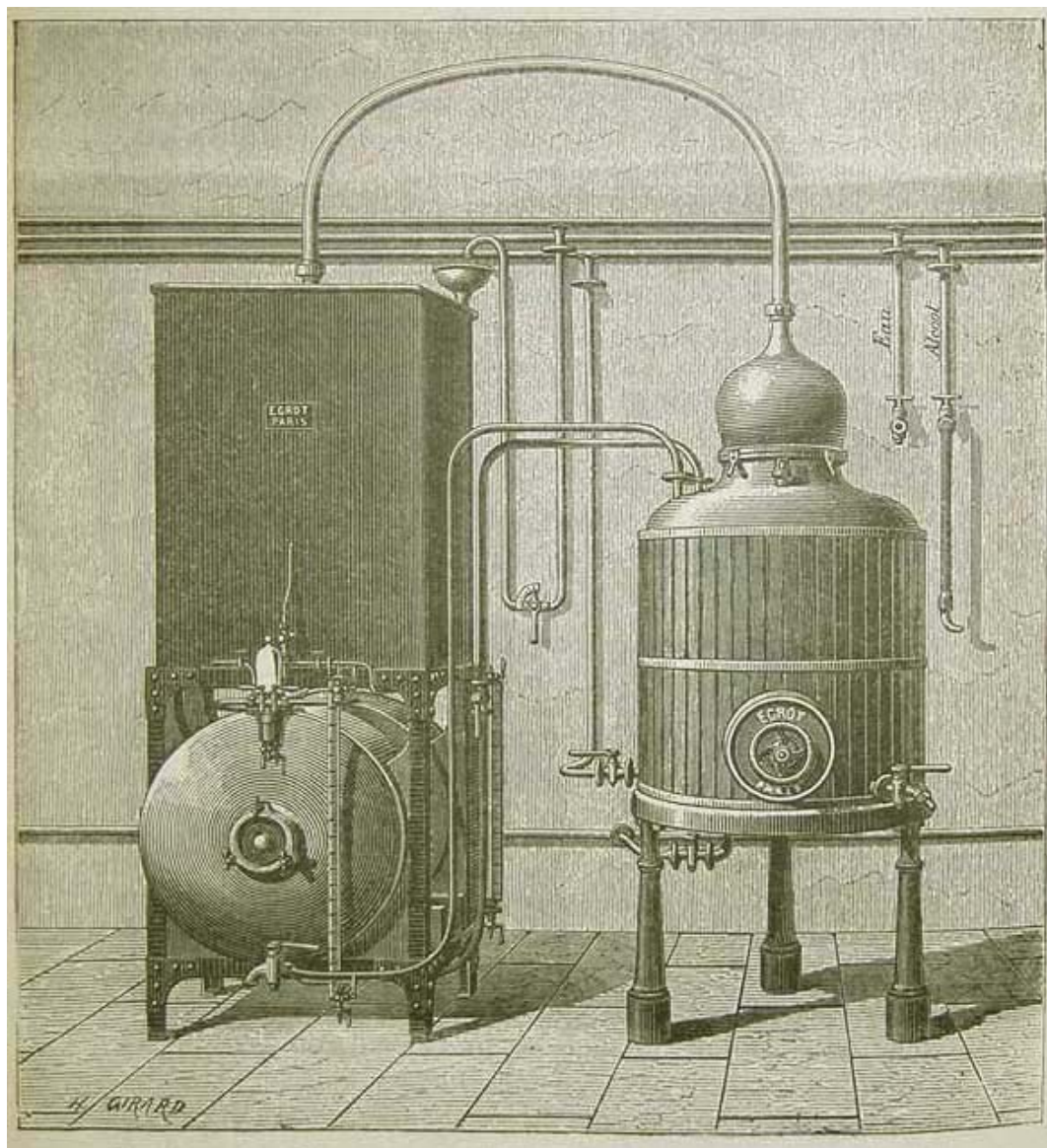


Fig. 46, --- Special steam still for making absinthe, with distillation receivers (Egrot system).

It first distills the plants and the alcohol, the product of which, "absinthe blanche" is received in a copper distillation receiver set at the base of the cooler.

The phlegms, which run at the beginning and at the end of the operation, are collected separately in a special receiver placed behind the first, from which they are returned by compressed air to the still to be redistilled at the same time as the next charge of absinthe is in the colorator.

Coloring, for a small operation, is done in the still between distillations. For a big operation a special colorator is used, as we mentioned above.

After the still is recharged with the plants for coloration, a portion of the clear absinthe in the distillation receiver is sent to it by compressed air and the whole is allowed to macerate after the heat is set at the correct degree.

The colored absinthe is then drawn through a tap from the still, cooled and placed into barrels.

The plants which remain in the still after coloring are discharged in turn only after, by distillation in the same still, all the alcohol they contain is extracted. The alcohol thus recovered is collected in the distillation receiver to be used in the following operation.

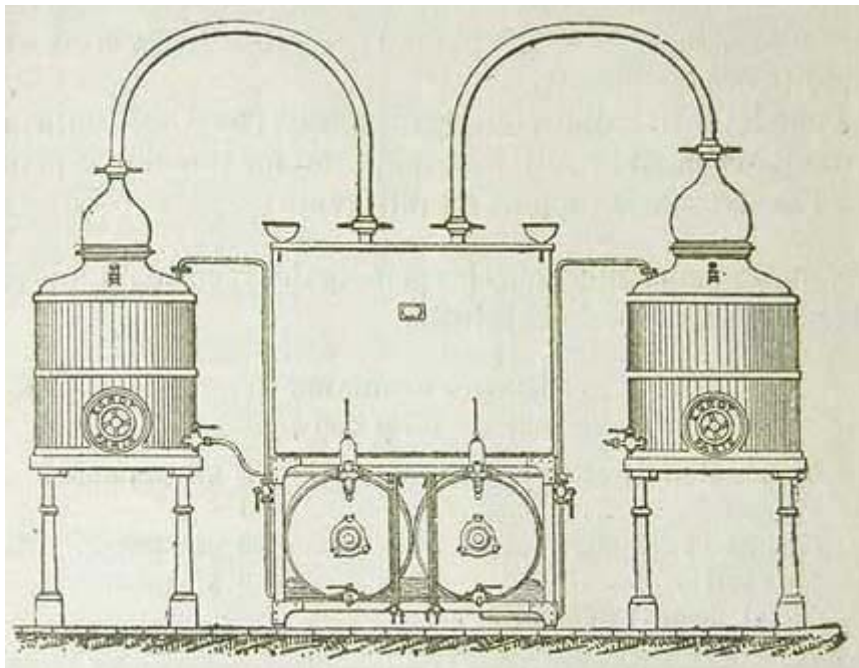


Fig. 47. --- Steam still and twin colorator arrangement for making absinthe

Figure 47 shows a steam still and twin colorator arrangement; this setup makes it possible to produce absinthe without interruption. It contains, independently of the still and the containers described above, a separate colorator, provided with its own cooler; built like that of the still, but smaller. The colored absinthe, exiting the colorator, is collected in a special copper receiver, from which it can be dispatched, by means of compressed air and a piping system, to the storage barrels which can be far removed from the distillation floor.

This device, very complete, adopted in the biggest establishments, where it has been recently installed by the Egrot company, avoids any manual handling and considerably decreases runtime, while increasing the quality of the product and the speed of the operations.

For installations without compressed air the transfer is done manually, by means of a pump fixed to the cooler support.

Below are the principal recipes used to make absinthe.

ABSINTHE ORDINAIRE
(For 100 liters at 60%)

Grand wormwood dried and stripped.	5 kilograms
Fennel.	3 ---
Angelica root	400 grams
Green anise	3 kilograms
Alcohol as required	

Infuse the whole in the still for 24 hours, then add the water and proceed carefully with distillation.

Coloration:

Petite wormwood..... ..	600 grams
Hyssop	600 ---
Melissa	800 ---
Peppermint leaves	800 ---
Powdered licorice..... ..	30 ---

Chop the petite wormwood and the mint, powder the hyssop and melissa using a mortar and pestle, put the whole into the still with the scented spirit, seal carefully if necessary; and heat gently to 50-60° C, then kill the fire under the steam to prevent distillation. Cool, then pass the liquid through a hair sieve, and reduce to the desired proof with the necessary quantity of water. After manufacture add one centiliter of rectified essence of star anise.

ABSINTHE DEMI-FINE
 (For 100 liters)

Grand wormwood dried and stripped.	3 kilograms
Petite wormwood.....	1 kilogram 500
Fennel.	1 kilogram
Green anise	3 --
Star anise	1 kilogram 250
Dried hyssop flowers.. ..	500 grams
Dried lemon balm.....	500 ---
Angelica root	400 ---
Alcohol as required	

Infuse for 24 hours, add water and distill.

ABSINTHE FINE
 (For 100 liters at 72%)

Grand wormwood dried and stripped.	3 kilograms 500
Green anise	3 kilograms 500
Fennel.	3 kilograms 500
Star anise	10 grams
Alcohol as required.	

Infuse the plants for 24 hours in alcohol reduced to 80%, then distill in the manner already described.

Coloration:

Petite wormwood.....	550 grams
Hyssop	600 ---
Melissa	800 ---

Proceed in the same way as before, and add afterward:

Essence of star anise	50 grams
Solution of guaiac resin.....	30 ---
Pulverized licorice.....	20 ---

OTHER
 (For 100 liters at 72%)

Grand wormwood	3 kilograms 750
Green anise	3 kilograms 750
Fennel ..	3 kilograms 750
Star anise	500 grams
Mint (herb).....	250 ---
Caraway of Riga	125 ---
Alcohol as required.	

Proceed as before.

Coloration:

Melissa	700 grams
Hyssop	700 ---
Petite wormwood	500 ---

After coloration add 50 grams of essence of star anise in 95% alcohol.

ABSINTHE EXTRA-FINE
 (for 400 liters at 72%)

Grand wormwood	15 kilograms
Green anise	12 ---
Fennel ..	12 ---
Star anise	2 ---
Caraway	500 grams
Angelica root ..	250 ---
Alcohol as required	

Macerate the plants for 24 hours in 80% alcohol, and distill in the manner previously described.

Coloration (for 400 liters):

Petite wormwood	3 kilograms 500
Hyssop	3 kilograms 500
Melissa	3 kilograms 500
Mint	400 grams

Add after coloration:

Essence of star anise...	150 grams
Essence of green anise	150 grams

PONTARLIER SWISS ABSINTHE
(for 100 liters)

Grand wormwood dried and stripped.	2 kilograms 500
Green anise	5 ---
Florence fennel	5 ---
85% Alcohol ...	95 liters

Macerate in the still for 24 hours with the alcohol, add 45 liters of water at the time of distillation, proceed with the distillation and collect 95 liters of scented spirit. For the phlegms, proceed as we have already described.

Coloration:

Petite wormwood dried and stripped..	1 kilogram
Hyssop (dried flower tops)	1 ---
Melissa dried and stripped.....	500 grams

Proceed in the same way previously described.

MONTPELLIER SWISS ABSINTHE
(for 100 liters)

Grand wormwood	2 kilograms 500
Green anise	5 ---
Florence fennel	5 ---
Coriander	500 grams
Angelica seeds	400 ---
Alcohol at 85%	95 liters

Macerate and distill as before.

Coloration:

Petite wormwood	1 kilogram
Dried hyssop flowers..	750 grams
Dried melissa	750 ---

FOUGEROLLES SWISS ABSINTHE
(For 100 liters)

Green anise	7 kilograms	500
Florence fennel	4	---
Stripped grand wormwood	2	--- 750
Alcohol as required		

Macerate and distill according to the method already given.

Coloration:

Dried lemon balm.....	750	grams
Hyssop	600	---
Petite wormwood.....	700	---
Peppermint.....	600	---

Proceed as before.

SWISS ABSINTHE BLANCHE

Stripped grand wormwood	2 kilograms	750
Petite wormwood	1	---
Hyssop flowers	1	---
Veronica	550	grams
Genepi	550	---
Roman Chamomile	225	---
Green anise	5 kilograms	
Florence fennel	5	---
Angelica seeds	550	grams
Alcohol at 85%	95	liters

Proceed as for colored absinthe, the rectify the product and reduce to 74%.

ABSINTHE FROM ESSENCES

Absinthe can also be made from essences dissolved in alcohol; this manufacturing process, though less advisable than the method we have revealed, can nevertheless yield great results, especially in temperate countries which don't always possess the necessary facilities for good fabrication by ordinary means; we will present some recipes which can still provide products of good quality with the condition however that the essences used are well rectified and stripped of heavy products with which they are mixed.

ABSINTHE ORDINAIRE

Wormwood essence (grand)	30 grams
--- of star anise ..	50 ---
--- of anise	10 ---
--- of sweet fennel.....	10 ---
Alcohol at 90%	51 liters
Plain water	49 ---

Yield: 100 liters at 46%.

Dissolve the essences in the alcohol and mix it all well; add the prescribed amount of water and color with vegetal green and caramel; allow to rest for a while before delivering for consumption.

ABSINTHE DEMI-FINE

Essence of grand wormwood..	25 grams
--- of petite wormwood..	10 ---
--- of peppermint	5 ---
--- of hyssop	3 ---
--- of angelica	3 ---
--- of anise	50 ---
--- of star anise ..	40 ---
--- of sweet fennel.....	5 ---
Alcohol at 90 degrees.	58 liters 50
Ordinary water	34 --- 50

Proceed as before. Yield: 100 liters at 53%.

ABSINTHE FINE

Essence of grand wormwood.. .. .	25 grams
--- of petite wormwood.. .. .	10 ---
--- of hyssop	3 ---
--- of melissa	5 ---
--- of anise	75 ---
--- of star anise	75 ---
--- of sweet fennel.....	25 ---
--- of coriander	2 ---

Proceed as before. Yield: 100 liters at 65%.

FABRICATION OF INSTANT SWISS ABSINTHE FROM ABSINTHE EXTRACT

The difficulties presented by the preservation of essences, especially in the hot countries, have inspired a chemist with the idea of manufacturing absinthe extract in a concentrated form. This extract, easy to preserve, can be shipped afar with little expense since only 200 grams are needed for one hectoliter of absinthe; all that's required is to add the desired volume of alcohol and the vegetal coloring material to instantly yield an absinthe of good quality. This extract is prepared by the firm of G. Prêcheur, 13 Rue Quincampoix, Paris, advantageously known to distillers for the superior quality of its products for spirit merchants.

Here in a few words are the instructions for using this extract to make one hectoliter of absinthe:

Absinthe extract	200 grams
Vegetal color... ..	250 ---

Dissolve the 200 grams of extract in 80 liters of good tasting 90% alcohol; agitate the liquid to mix it well, then reduce the alcoholic strength by adding to the 80 liters thus scented, 20 liters of pure water, which will reduce the alcoholic strength to 72%.

Once this process is finished, color the liquid mixture by pouring in the 250 grams of coloring; taking special care to agitate the color well before pouring it into the scented liquid. Stir up the whole then, and absinthe of 72% is thus made.

Absinthe obtained by this process was analyzed and found good by the Municipal Laboratory of Paris (May 16, 1889, n° 1825).

Observation --- It is necessary to never color the liquid until after the alcoholic reduction is finished.

Absinthe of lower proof, such as 65%, 60%, 55% as well as 45%, is obtained by following the same instructions.

VARIOUS AROMATIC SPIRITS

As before, take care to use the necessary proportion of 90% alcohol for dissolving the absinthe extract and the necessary quantity of water for reduction.

Thus, for 72% absinthe, it takes:									
				$\frac{72 \times 100}{90} = 80$					
	---		---	60%	---		---	---	33 --
				$\frac{60 \times 100}{90} = 67$					
	---		---	50%	---		---	---	44 --
				$\frac{50 \times 100}{90} = 56$					

This process has been adopted by several large traders of South America, who obtain good results from it.

We will not speak about the physiological effects of absinthe, which some consider to be a pernicious drink. The truth is that, by its nature, absinthe taken in moderation is less harmful than one is led to believe.

What is bad is the abuse that can be made of it.

Various Aromatic Spirits

SWISS VULNERARY SPIRITS ⁵

Take 750 grams of dried leaves of each of the following plants:

Wormwood, angelica, basil, calamint, fennel, hyssop, lavender, marjoram, melilot, melissa, mint, oregano, rosemary, rue, savory, sage, wild thyme, thyme.

Infuse the whole for 48 hours in 64 liters of alcohol at 85%, add 30 liters of water to distill; rectify then to collect 62 liters of scented spirit, to which a sufficient quantity of water is added to make 100 liters at 50%.

¹ By "common absinthe", Fritsch may mean absinthe *ordinaire*, but more to the point here, inexpensive absinthe.

² *Coup de feu* - literally a gunshot. Fritsch is referring to eruptions that occur in the still when the heat source is putting more energy into the system than can be safely absorbed by the process.

³ "Phlegms" seems to have originally been an alchemical term. As applied to absinthe, it means a low-quality distillate that comes out of the still after the "good" distillate (*bon chauffe*) is collected. It can also mean the dregs left in the still. None of this was wasted in Fritsch's day - alcohol was highly taxed, and therefore too precious to waste.

⁴ Chlorophyll.

⁵ The original French is *Eau Vulnérable* - literally vulnerary water. This was probably not intended for drinking, but rather for topical application to promote the healing of wounds. This calls to mind absinthe's roots in medicine.