

Beer

From Appropedia

_____ environmental impact of beer _____

Estimated carbon footprint, loss of natural habitat potential, loss of plant and animal life potential and/or extinction potential from making, packaging, shipping and/or using these products or services.

+ Except for CO2 emissions, estimates are based on Habitat,_Life,_Extinction_Formulas_v2 (<http://ecofx.org/>) via ecofx.org. +

Estimates do not include the possible long-term ecological effects of climate change and persistent toxins.

Formulas use "human appropriated net primary production (HANPP)" to "CO2 emissions" correlation.

1 kg(kilogram) = 2.2 lb(pounds) 1 m2(square meter) = 10.8 ft2(square feet)

1 km(kilometers) = .62 mi(miles) 1 liter = .26 gallons

Beer - a 6 pack of Fat Tire Amber Ale made by New Belgium

Some of the materials

Loss of

Loss of plant and animal

How many of this product it would take

<p>full life cycle analysis including all materials, production, retail and end user ecofx</p> <p>CO2 from The Climate Conservancy and newbelgium.com (http://newbelgium.com/)</p> <p>#ref1</p>	<p>materials used in this product's full life cycle.</p> <hr/> <p>multiple fuels, glass, grain, paper ? kg ? lb</p>	<p>CO2 released from the full life cycle of this product.</p> <hr/> <p>3.2 kg 7 lb</p>	<p>natural habitat potential from the full life cycle of this product.</p> <hr/> <p>2.5 m2 26.5 ft2</p>	<p>life potential (in natural habitat) from the full life cycle of this product.</p> <hr/> <p>7.7 kg 16.8 lb</p>	<p>would take considering its full life cycle footprint to trigger 1 potential species extinction.</p> <hr/> <p>61 million</p>
<p>Beer - a 6 pack of Fat Tire Amber Ale made by New Belgium</p> <p>product materials and manufacturing</p> <p>CO2 from The Climate Conservancy and newbelgium.com (http://newbelgium.com/)</p> <p>#ref1</p>	<p>Some of the materials used to manufacture this product.</p> <hr/> <p>multiple fuels, glass, grain, paper ? kg ? lb</p>	<p>CO2 released to make this product.</p> <hr/> <p>1.7 kg 3.7 lb</p>	<p>Loss of natural habitat potential to make this product.</p> <hr/> <p>1.3 m2 14.2 ft2</p>	<p>Loss of plant and animal life potential (in natural habitat) to make this product.</p> <hr/> <p>4.1 kg 9 lb</p>	<p>How many of this product if they were made to trigger 1 potential species extinction.</p> <hr/> <p>114 million</p>
<p>Beer - a 6 pack of Fat Tire Amber Ale made</p>		<p>CO2</p>	<p>Loss of natural</p>	<p>Loss of plant and animal</p>	<p>How many instances of</p>

<p>by New Belgium</p> <hr/> <p>for retail refrigeration only</p> <p>CO2 from The Climate Conservancy and newbelgium.com (http://newbelgium.com/) #ref1</p>	<p>Refrigeration energy source.</p> <hr/> <p>electricity ? kg ? lb</p>	<p>released from refrigerating this product by retail store.</p> <hr/> <p>.83 kg 1.8 lb</p>	<p>habitat potential from refrigerating this product by retail store.</p> <hr/> <p>.64 m2 7 ft2</p>	<p>life potential (in natural habitat) from refrigerating this product by retail store.</p> <hr/> <p>2 kg 4.38 lb</p>	<p>refrigerating this product by a retail store to trigger 1 potential species extinction.</p> <hr/> <p>235 million</p>
---	--	---	---	---	---

Contents

- 1 Matrix Summary
- 2 Notes
- 3 References
- 4 From the Household cyclopedia, 1881
 - 4.1 Sugars.
 - 4.2 Circumstances influencing Fermentation.
 - 4.3 Changes during Fermentation, etc.
 - 4.4 Acetic Fermentation.
 - 4.5 To choose Water for Brewing.
 - 4.6 To make Malt.

- 4.7 To grind Malt.
- 4.8 To determine the Qualities of Malt.
- 4.9 To choose Hops.
- 4.10 To determine the Proportion between the Liquor boiled and the Quantity produced.
- 4.11 To determine the Heats of the Liquor or Water for the First and Second Mashers on different kinds of Malt.
- 4.12 To determine the Strength of the Worts.
- 4.13 To proportion the Hops.
- 4.14 To Boil Worts.
- 4.15 To Cool the Wort.
- 4.16 To Choose Heats for Tunning.
- 4.17 To Mix the Yeast with the Worts.
- 4.18 To manage the Fermentation.
- 4.19 To Accelerate the Fermentation.
- 4.20 To Check a Too Rapid Fermentation.
- 4.21 To Brew Porter on the London System.
- 4.22 To Brew three Barrels of Porter.
- 4.23 Brown Stout.
- 4.24 To brew Ale in Small Families.
- 4.25 Another Method of Brewing Ale.
- 4.26 Table Beer only, from Pale Malt.
- 4.27 Ale and Small Beer on Mr. Cobbett's Plan.
- 4.28 Utensils
- 4.29 Process of Brewing the Ale.
- 4.30 The Small Beer.

- 4.31 To Brew Burton Ale.
- 4.32 To brew Essex Ale.
- 4.33 To brew Edinburgh Ale.
- 4.34 Bavarian or Lager Beer.
- 4.35 White Beer.
- 4.36 To make Sugar Beer.
- 4.37 Spruce Beer.
- 4.38 Root Beer.
- 4.39 Ginger Pop.
- 4.40 Ginger Beer.
- 4.41 Cheap Beer.
- 4.42 Required Time for Keeping Beer.
- 4.43 To Brew Amber Beer.
- 4.44 To make Molasses Beer.
- 4.45 To Fine Beer.
- 4.46 To Fine Cloudy Beer.
- 4.47 To Recover Thick, Sour Malt Liquor.
- 4.48 To Vamp Malt Liquors.
- 4.49 To Restore Musty Beer.
- 4.50 To Enliven and Restore Dead Beer.
- 4.51 To Prevent and Cure Foxing in Malt Liquors.
- 4.52 To restore a Barrel of Ropy Beer.
- 4.53 To restore Frosted Beer.
- 4.54 To give New Ale the Flavor of Old.
- 4.55 To give Beer a Rich Flavor.
- 4.56 To preserve Brewing Utensils.

- 4.57 To sweeten Stinking or Musty Casks.
- 4.58 Method of Seasoning New Casks.
- 4.59 Fermentation by Various Means.
- 4.60 First Substitute for Yeast.
- 4.61 Second Substitute.
- 4.62 Third Substitute.
- 4.63 Fourth Substitute.
- 4.64 Sixth Substitute.
- 4.65 Seventh Substitute.
- 4.66 Eighth Substitute.
- 4.67 Ninth Substitute.
- 4.68 To Preserve Yeast.
- 4.69 To make Purl Bitters.
- 4.70 Use of Sugar in Brewing.
- 4.71 To Close Casks without Bungs.
- 4.72 To Bottle Porter, Ale, etc.
- 4.73 To Remove Tartness.
- 4.74 To Bottle Table Beer.
- 4.75 To render Bottled Beer Ripe.
- 4.76 To manage Ale in the Cellar.
- 4.77 To Keep Hops for Future Use.
- 5 External links

Matrix Summary

A life cycle study of one beer brand shows that the CO₂ emissions from a 6-pack of micro-brew beer is about 3 kilograms (6.6 pounds) -- including grain production, brewing, bottling, distribution and waste management. #ref1 The loss of natural habitat potential from the 6-pack of micro-brew beer is estimated to be 2.5 square meters (26 square feet).

Notes

Draught beer's environmental impact can be 68% lower than bottled beer due to packaging differences. #ref2 #ref3 Home brewing can reduce the environmental impact of beer via less packaging and transportation. #ref4

Downstream emissions from distribution, retail, storage and disposal of waste can be over 45% of a bottled micro-brew beer's CO₂ emissions. #ref1

The use of a refillable jug, reusable bottle or other reusable containers to transport draught beer from a store or a bar (where legal) can reduce the environmental impact of beer consumption (as opposed to buying pre-bottled beer). #ref5

References

1. http://www.newbelgium.com/files/shared/the-carbon-footprint-of-fat-tire-amber-ale-2008-public-dist-rfs_0.pdf
2. <http://www.treehugger.com/files/2008/07/lca-draught-beer-vs-bottled-beer.php#ch01>
3. <http://www.springerlink.com/content/a981335v284251v6>

4. <http://www.simplehomebrewbeer.com/environmental-benefits-of-homebrewing-beer/>

5. <http://www.terrapass.com/blog/posts/when-passions-c-1>

From the Household cyclopedia, 1881

Before proceeding to the consideration of the manufacture of wines, beer' and spirits, a general survey of the subject of fermentation will not be out of place. Alcoholic Beverages.

May be divided into fermented drinks including beer and wines, and distilled drinks or spirits which are obtained from the former by distillation. Spirits usually contain about fifty per cent. of alcohol, beer and wines from one to twenty per cent. The alcohol in all cases results from the breaking up of the sugar in the fermenting liquid.

Sugars.

Ordinary sugar, or cane sugar, uncrystallizable, or fruit sugar; and grape sugar, or glucose, are the three most important varieties. Fruit sugar exists in all the sub-acid fruits as grapes, currants, apples, peaches, etc. When these are dried, it changes to grape sugar forming the whitish grains which are seen on the outside of prunes, raisins, etc. Grape sugar is found to a limited extent in fruits associated with fruit sugar. Cane sugar is readily changed by the action of acids or ferments into fruit sugar, and the latter into grape sugar, but the process cannot be reversed. Grape sugar is the only fermentable variety, the others becoming changed into it before fermentation. Transformation of Starch, etc. Under the influence of acids, or diastase, a principle existing in germinating grains, starch is changed first into gum (dextrine) and afterwards into grape sugar. Hence one of our most important sources of alcohol is to be found

in the starch of barley, corn, wheat, potatoes, etc. Wood may be converted into grape sugar by the action of strong sulphuric acid which is afterwards neutralized. An attempt to produce alcohol in this way on a commercial scale was made in France, but was not successful. Ferment.

A solution of pure sugar will remain unchanged for an indefinite period of time. To induce fermentation, a portion of some nitrogenous body, itself undergoing decomposition, must be added. Such ferments are albumen (white of egg), fibrin (fibre of flesh), casein (basis of cheese), gluten (the pasty matter of flour). Yeast consists of vegetable egg-shaped cells, which is increased during its action as a ferment.

Circumstances influencing Fermentation.

In order that fermentation shall begin we require, besides the contact of the ferment, the presence of air. The most easily decomposed articles of food may be preserved for an indefinite period by hermetically sealing them in jars, after drawing out the air. When once begun, however, fermentation will go on, if the air be excluded. Temperature is important. The most favorable temperature is between 68^o and 77^o Fahr. At a low temperature fermentation is exceedingly slow. Bavarian or lager beer is brewed between 32^o and 46 1/2^o Fahr. A boiling heat instantly stops fermentation, by killing the ferment. To check fermentation we may remove the yeast by filtration. Hops, oil of mustard, sulphurous acid (from burning sulphur), the sulphites, sulphuric acid, check the process by killing the ferment. Too much sugar is unfavorable to fermentation, the best strength for the syrup is ten parts of water to one of sugar.

Changes during Fermentation, etc.

The grape-sugar breaks up into carbonic acid which escapes as gas, alcohol and water which remain. In malting the grain is allowed to germinate, during which process the starch of the grain is changed into gum and sugar: the rootlets make their appearance at one end and the stalk or acrospire at the other. The germination is then checked by heating in a kiln; if allowed to proceed a certain portion of the sugar would be converted into woody matter, and lost.

In brewing the saccharine matter is extracted from the malt during the mashing. Yeast is added to cause fermentation; an infusion of hops afterwards, to add to the flavor and to check fermentation. In wine making there is sufficient albuminous matter in the grape to cause fermentation without the use of yeast.

Distillation separates the alcohol in great part from the water. Alcohol boils at 179° Fahr., and water at 212°. It is not possible, however, to separate entirely alcohol and water by distillation.

Acetic Fermentation.

Weak fermented liquors will become sour on exposure to the air. This is owing to the conversion of their alcohol into acetic acid (see Vinegar). This change is due to the absorption of the oxygen of the air and is much promoted by the presence of a peculiar plant, the mother of vinegar. It is sometimes called the acetous fermentation. Viscous Fermentation.

By the action of yeast on beet-sugar a peculiar fermentation is set up; but little alcohol is formed. The same gives ropiness to wines and beer. It is checked by vegetable astringents, To fit up a small Brew-house.

Provide a copper holding full two-thirds of the quantity proposed to the brewed, with a gauge-

stick to determine the number of gallons in the copper. A mash-tub, or tun, adapted to contain two-thirds of the quantity proposed to be brewed and one or two tuns of equal size to ferment the wort three or four shallow coolers; one or two wooden bowls; a thermometer; half a dozen casks of different sizes; a large funnel; two or three clean pails, and a hand-pump.

This proceeds on the supposition of two mashes for ale; but if only one mash is adapted for ale, with a view of making the table-beer better, then the copper and mash tun should hold one-third more than the quantity to be brewed.

The expenses of brewing depend on the price of malt and hops, and on the proposed strength of the article. Onequarter of good malt and eight pounds of good hops ought to make two barrels of good ale and one of tablebeer. The other expenses consist of coal and labor. Of public breweries, and their extensive utensils and machinery, we give no description, because books are not likely to be resorted to by the class of persons engaged in those extensive manufactories for information relative to their own particular business.

To choose Water for Brewing.

Soft water, or hard water softened by exposure to the air, is generally preferred, because it makes a stronger extract, and is more inclined to ferment; but hard water is better for keeping beer and is less liable to turn sour. Some persons soften hard water by throwing a spoonful of soda into a barrel, and others do it with a handful of common salt mixed with an ounce of salt of tartar.

To make Malt.

Put about 6 quarters of good barley, newly threshed, etc., into a stone trough full of water, and

let it steep till the water be of a bright reddish color, which will be in about 3 days, more or less, according to the moisture or dryness, smallness or bigness of the grain, the season of the year, or the temperature of the weather. In summer malt never makes well; in winter it requires longer steeping than in spring or autumn. It may be known when steeped enough by other marks besides the color of the water. The grains should be soft enough to be pierced with a needle, but not to be crushed between the nails. When sufficiently steeped take it out of the trough, and lay it in heaps, to let the water drain from it; then, after 2 or 8 hours, turn it over with a scoop, and lay it in a new heap, 20 or 24 inches deep. This is called the coming heap, in the right management of which lies the principal skill. In this heap it may lie 40 hours, more or less, according to the aforementioned qualities of the grain, etc., before it comes to the right temper of malt. While it lies it must be carefully looked to after the first 15 or 16 hours, for about that time the grains begin to put forth roots, which, when they have equally and fully done, the malt must, within an hour after, be turned over with a scoop; otherwise the grains will begin to put forth the blade and spire also, which must by all means be prevented. If all the malt do not come equally, but that which lies in the middle, being warmest, come the soonest, the whole must be turned, so that what was outmost may be inmost; and thus it is managed till it be all alike.

As soon as the malt is sufficiently come, turn it over, and spread it to a depth not exceeding 5 or 6 inches; and by the time it is all spread out begin and turn it over again 3 or 4 times. Afterwards turn it over in like manner once in 4 or 5 hours, making the heap deeper by degrees, and continue to do so for the space of 48 hours at least. This cools, dries, and deadens the grain, so that it becomes mellow, melts easily in brewing, and separates entirely from the husk. Then throw up the malt into a heap as high as possible, where let it lie till it grows as hot as the hand can bear it, which usually happens in about the space of 30 hours. This perfects the sweetness and mellowness of the malt. After being sufficiently heated, throw it abroad to cool, and turn it over again about 6 or 8 hours after; and then lay it on a kiln with

a hair cloth or wire spread under it. After one fire, which must last 24 hours, give it another more slow, and afterwards, if need be, a third; for if the malt be not thoroughly dried, it cannot be well ground, neither will it dissolve well in the brewing; but the ale it makes will be red, bitter, and unfit for keeping.

To grind Malt.

To obtain the infusion of malt it is necessary to break it, for which purpose it is passed through stones placed at such distance, as that they may crush each grain without reducing it to powder; for if ground too small it makes the worts thick, while if not broken at all the extract is not obtained. In general, pale malts are ground larger than amber or brown malts.

Malt should be used within two or three days after it is ground, but in the London brew-houses it is generally ground one day and used the next. A quarter of malt ground should yield nine bushels, and sometimes ten. Crushing mills or iron rollers have lately been used in preference to stones which make a considerable grit with the malt. On a small scale, malt may be broken by wooden rollers, by the hands.

Steel mills like coffee mills have also been used for crushing malt with great success.

To determine the Qualities of Malt.

First, examine well; if it has a round body, breaks soft, is full of flour all its length, smells well, and has a thin skin; next chew some of it, and if sweet and mellow, then it is good. If it is nerd and steely, and retains something of a barley nature, it has not been rightly made, and will weigh heavier than that which has been properly malted.

Secondly, take a glass nearly full of water; put in some malt, and if it swims, it is good, but if any sinks to the bottom then it is not true malt.

Pale malt is the slowest and least dried, producing more worts than high dried melt, and of better quality. Amber colored malt, or that between pale and brown, produces a flavor much admired in many malt liquors. Brown malt loses much of its nutritious qualities, but confers a peculiar flavor desired by many palates. Roasted malt, after the manner of coffee, is used by the best London brewers, to give color and flavor to porter, which in the first instance has been made from pale malt.

To choose Hops.

Rub them between the fingers or the palm of the hand, and if good, a rich glutinous substance will be felt, with a fragrant smell, and a fine yellow dust will appear. The best color is a fine olive green, but if too green, and the seeds are small and shrivelled, they have been picked too soon and will be deficient in flavor. If of a dusty brown color they were picked too late, and should not be chosen. When a year old, they are considered as losing one-fourth in strength.

To determine the Proportion between the Liquor boiled and the Quantity produced.

From a single quarter, two barrels of liquor will produce but one barrel of wort. Three barrels will produce one barrel and three quarters. Four barrels will produce two barrels and a half. Five barrels will produce three barrels and a quarter. Six barrels will produce four barrels. Eight barrels will produce five barrels and a half, and ten barrels will produce seven barrels, and so on in proportion for other quantities.

To determine the Heats of the Liquor or Water for the First and Second Mash on different kinds of Malt.

First Mash. - For very pale malt turn on the liquor at 176o Fahr. For pale and amber mixed, 172o, all amber, 170o, high-colored amber, 168o. An equal quantity of pale, amber, and brown, 160o. If the quantity of brown is very dark, or any part of the grains charred by the fire upon the kiln, 155o.

Second Mash. - For very pale malt turn on the liquor at 182o. For pale and amber mixed, 178o; all amber, 176o; high-colored amber, 172o. An equal quantity of pale, ember and brown, 166o. If the quantity of brown is very dark, or any part of the grains charred by the fire, 164o. The heat should in some measure be regulated by the temperature of the atmosphere, and should be two or three degrees higher in cold than in warm weather.

The proper degree of heat will give the strongest wort and in the greatest quantity, for though the heat were greater and the strength of the wort thereby increased, yet a greater quantity of liquor would be retained in the malt; and again, if it were lower, it would produce more wort, but the strength of the extract would be deficient, the beer without spirit, and likely to turn sour.

To determine the Strength of the Worts.

To effect this a saccharometer is necessary, and may be purchased at any mathematical instrument maker's. It determines the relative gravity of wort to the water used, and the quantity of farinaceous matter contained in the wort. It is used in all public breweries after drawing off the wort from each mash, and regulates the heat and quantity of liquor turned on at each succeeding mash, that the ultimate strength may be equal though the quantity is less.

This signifies little to the private, but it is of great consequence to the public brewer. Those who brew frequently and desire to introduce it will obtain printed tables and instructions with the instrument.

To proportion the Hops.

The usual quantity is a pound to the bushel of malt, or 8 lbs. to the quarter, but for keeping beer, it should be extended to 10 or 12, and if for one or two years to 14 lbs. to the quarter. Small beer requires from 3 to 6 lbs. the quarter, and rather more when old hops are used. Some persons, instead of boiling the hops with the wort, macerate them, and put the strong extract into the tun with the first wort, and make 2 or 3 extracts in like manner for the second and third worts

To Boil Worts.

The first wort should be sharply boiled for 1 hour, and the second for 2 hours, but if intended for beer of longkeeping, the time should be extended half an hour. The hops should be strained from each preceding wort, and returned into the copper with the succeeding one. Between the boilings the fires should be damped with wet cinders, and the copper door set open. For small beer only half an hour is necessary for the first wort, 1 hour for the second, and 2 hours for the third. The diminution from boiling is from one-eighth to onesixteenth.

To Cool the Wort.

Worts should be laid so shallow as to cool within 6 or 7 hours to the temperature of 60o. In warm weather the depth should not exceed 2 or 3 inches, but in cold weather it may be 5

inches. As soon as they have fallen to 60o they should instantly be tunned and yeasted.

To Choose Heats for Tunning.

In cold weather the heats in the coolers should be 5o or 6o higher than in mild and warm weather. For ale, in cold weather, it should be tunned as soon as it has fallen to 60o Fahr. in the coolers; for porter to 64o, and for table beer to 74o, and in warm weather strong beer should be 4o or 5o less and table beer 7o or 8o. Care should also be taken that the worts do not get cold before the yeast is mixed to produce fermentation. The best rule for mixing the yeast is 1 1/2 lbs. to every barrel of strong beer wort, and 1 lb. to every barrel of table beer wort.

To Mix the Yeast with the Worts.

Ale brewed for keeping in winter should be no more than blood warm when the yeast is put to it. If it is intended for immediate drinking, it may be yeasted a little warmer. The best method of mixing the yeast is to take 2 or 3 quarts of the hot water wort in a wooden bowl or pan, to which when cool enough, put yeast enough to work the brewing, generally 1 or 2 quarts to the hogshead, according to its quality. In this bowl or pan the fermentation will commence while the rest of the worts are cooling, when the whole may be mixed together. To Apportion Yeast and Apply it to the Worts. The yeast of strong beer is preferable to that from small beer, and it should be fresh and good. The quantity should be diminished with the temperature at which the worts are tunned, and less in summer than in winter. For strong beer a quart of yeast per quarter will be sufficient at 58o but less when the worts are higher and when the weather is hot. If estimated by the more accurate criterion of weight, 1 1/2 lbs. should be used for a barrel of strong beer, and 1 1/4 lbs. for a barrel of small beer. If the fermentation does not commence add a little more yeast, and rouse the worts for some time. But if they get cold, and

the fermentation is slow, fill a bottle with hot water and put it into the tun. In cold weather small beer should be tunned at 70o, keeping beer at 50o and strong beer at 54o. In mild weather at 50o for each sort. The fermentation will increase the heat 10o.

To manage the Fermentation.

A proportion of the yeast should be added to the first wort as soon as it is let down from the coolers, and the remainder as soon as the second wort is let down. The commencement of fermentation is indicated by a line of small bubbles round the sides of the tun, which in a short time extends over the surface. A crusty head follows, and then a fine rocky one, followed by a light, frothy head. In the last stage the head assumes a yeasty appearance, and the color is yellow or brown, the smell of the tun becoming strongly vinous. As soon as this head begins to fall, the tun should be skimmed, and the skimming continued every 2 hours till no more yeast appears; this closes the operation, and it should then be put in casks, or, in technical language, cleansed. A minute attention to every stage of this process is necessary to secure fine flavored and brilliant beverage. Should the fermentation be unusually slow, it should be accelerated by stirring or rousing the whole. After the first skimming, a small quantity of salt and flour, well mixed, should be stirred in the tun. The fermentation will proceed in the casks, to encourage which the bung-hole should be placed a little aside, and the casks kept full by being filled up from time to time with old beer. When this fermentation has ceased the casks may be bunged up.

To Accelerate the Fermentation.

Spread some flour with the hand over the surface, and it will form a crust, and keep the worts warm, or throw in an ounce or two of powdered ginger, or fill a bottle with boiling water and sink it in the worts, or heat a small quantity of the worts and throw into the rest, or beat up

the whites of two eggs with some brandy and throw it into the tun or cask, or tie up some bran in a coarse, thin cloth and put it into the vat, and above all things do not disturb the wort, as fermentation will not commence during any agitation of the wort.

To Check a Too Rapid Fermentation.

Mix some cold raw wort in the tun, or divide the whole between two tuns, where, by being in smaller body, the energy of the fermentation of the whole will be divided. Also open the doors and windows of the brew-house; but, if it still frets, sprinkle some cold water over it, or if it frets in the cask, put a mixture of a 1/4 of a lb. of sugar with a handful of salt to the hogshead.

To Brew Porter on the London System.

Thames or New River water is indifferently used, or hard water, raised into backs and exposed for a few days to the air.

Take a mixture of brown, amber and pale malts in nearly equal quantities, and turn them into the mash-tub in this order. Turn on the first liquor at 165o, mash 1 hour and then coat the whole with dry salt. In 1 hour set the tap. Mix 10 lbs. of brown hops to the quarter of malt, half old, half new; boil the first wort briskly with the hops for three-quarters of an hour, and after putting into the copper 1 1/2 lbs. of sugar and 1 1/2 lbs. of Leghorn juice (extract of liquorice) to the barrel, turn the whole into the coolers, rousing the wort all the time.

Turn on the second liquor at 174o, and in an hour set tap again. This second wort having run off, turn on again at 145o; mash for an hour and stand for the same; in the meantime boiling the second wort with the same hops for an hour. Turn these into the coolers as before, and let down into the tub at 64o, mixing the yeast as it comes down. Cleanse the second day at 80o,

previously throwing in a mixture of flour and salt, and rousing thoroughly. For private use, every quarter of malt ought to yield 2 barrels and a half, but brewers would run 3 barrels to a quarter.

To Brew three Barrels of Porter.

Take 1 sack of pale malt, 1/2 a sack of amber malt, and 1/2 a sack of brown malt.

Turn on 2 barrels for first mash at 165o; second mash, 1 1/2 barrels at 172o; third mash, 2 barrels at 142o. Boil 10 lbs. of new and old hops and 2 oz. of porter extract in the first wort. Cool, ferment, and cleanse according to the previous instructions.

Brown Stout.

The procedure is the same as in the preceding article, except that one-third or one-half the malt should be brown.

To brew Ale in Small Families.

A bushel and three quarters of ground malt and a pound of hops are sufficient to make 18 gallons of good family ale. That the saccharine matter of the malt may be extracted by infusion, without the farina, the temperature of the water should not exceed 155o or 160o. The quantity of water should be poured on the malt as speedily as possible, and the whole being well mixed together by active stirring, the vessel should be closely covered over for an hour; if the weather be cold, for an hour and a half. If hard water be employed it should be boiled, and the temperature allowed, by exposure to the atmosphere, to fall to 155o or 160o; but if rain water is used, it may be added to the malt as soon as it arrives to 155o. During the

time this process is going on, the hops should be infused in a close vessel, in as much boiling water as will cover them, for 2 hours. The liquor may then be squeezed out, and kept closely covered.

The hops should then be boiled for about 10 minutes, in double the quantity of water obtained from the infused hops, and the strained liquor, when cold, may be added with the infusion to the wort, when it has fallen to the temperature of 70o. The object of infusing the hops in a close vessel previously to boiling, is to preserve the essential oil of hops, which renders it more sound, and at the same time more wholesome. A pint of good thick yeast should be well stirred into the mixture of wort and hops, and covered over in a place of the temperature of 65o, and when the fermentation is completed, the liquor may be drawn off into a clean cask previously rinsed with boiling water. When the slow fermentation which will ensue has ceased, the cask should be loosely bunged for two days, when, if the liquor be left quiet, the bung may be properly fastened. The pale malt is the best, because, when highly dried, it does not afford so much saccharine matter. If the malt be new, it should be exposed to the air, in a dry room, for 2 days previously to its being used; but if it be old, it may be used in 12 or 20 hours after it is ground. The great difference in the flavor of ale made by different brewers appears to arise from their employing different species of hops.

Another Method of Brewing Ale.

For 36 gallons, take of malt (usually pale), 2 1/2 bushels; sugar, 3 lbs. just boiled to a color; hops, 2 lbs. 8 oz.; coriander seeds, 1 oz.; capsicum, 1/2 a drachm.

Work it 2 or 3 days, beating it well up once or twice a day; when it begins to fall, cleanse it by adding a handful of salt and some wheat flour.

Table Beer only, from Pale Malt.

The first mash should be at 170o, viz. 2 barrels per quarter; let it stand on the grains 3/4 of an hour in hot weather, or 1 hour if cold. Second mash, 145o at 1 1/2 barrels per quarter, stands 1/2 an hour. Third, 165o, 2 barrels per quarter, stands 1/2 an hour. Fourth, 130o, 3 barrels, stands 2 hours. The first wort to be boiled with 6 lbs. of hops per quarter for 1 1/2 hours, the second wort to be boiled with the same hops 2 hours, and the remainder 3 hours. The whole is to be now heated as low as 55o if the weather permits, and put to work with about 5 pints of yeast per quarter; if the weather is too warm to get them down to 55o, a less proportion will be sufficient. The 8 barrels of liquor first used will be reduced to 6 of beer to each quarter; 1 barrel being left in the grains, and another evaporated in boiling, cooling and working.

Ale and Small Beer on Mr. Cobbett's Plan.

Utensils

These are first, a copper that will contain at least 40 gallons. Second, a mashing-tub to contain 60 gallons; for the malt is to be in this along with the water. It must be a little broader at top than at bottom, and not quite so deep as it is wide across the bottom. In the middle of the bottom there is a hole about 2 inches over, to draw the wort off. Into this hole goes a stick a foot or two longer than the tub is high. This stick is to be about 2 inches through, and tapered for about 8 inches upwards, at the end that goes into the hole, which at last it fills up as closely as a cork. Before anything else is put into the tubs, lay a little bundle of fine birch about half the bulk of a birch broom, and well tied at both ends. This being laid over the hole (to keep back the grains as the wort goes out), put the tapered end of the stick down through

it into the hole, and thus cork the whole up. Then have something of weight sufficient to keep the birch steady at the bottom of the tub, with a hole through it to slip down the stick, the best thing for this purpose will be a leaden collar for the stick, with the hole large enough, and it should weigh 3 or 4 pounds.

Third, an underback or shallow tub, to go under the mash-tub for the wort to run into when drawn from the grains.

Fourth, a tun-tub that will contain 30 gallons, to put the ale into to work, the mash-tub serving as a tun-tub for the small beer. Besides these, a couple of coolers or shallow tubs, about a foot deep; or, if there are four it may be as well, in order to effect the cooling more quickly.

Process of Brewing the Ale.

Begin by filling the copper with water, and next by making the water boil. Then put into the mashing-tub water sufficient to stir and separate the malt. The degree of heat that the water is to be at, before the malt is put in, is 170° by the thermometer; but, without one, take this rule: when you can, looking down into the tub, see your face clearly in the water, the water is hot enough. Now put in the malt and stir it well in the water. In this state it should continue for about 1/4 of an hour. In the meanwhile fill up the copper, and make it boil; and then put in boiling water sufficient to give 18 gallons of ale. When the proper quantity of water is in stir the malt again well, and cover the mashing-tub over with sacks, and there let the mash stand for 2 hours; then draw off the wort. The mashing-tub is placed on a couple of stools, so as to be able to put the underback under it to receive the wort as it comes out of the hole. When the underback is put in its place, let out the wort by pulling up the stick that corks the hole. But observe, this stick (which goes 6 or 8 inches through the hole) must be raised by degrees, and the wort must be let out slowly in order to keep back the sediment. So that it is necessary to

have something to keep the stick up at the point where it is to be raised, and fixed at for the time. To do this the simplest thing is a stick across the mashing-tub. As the ale-wort is drawn off into the small underback, lade it out of that into the tun-tub; put the wort into the copper, and add 1 1/2 pounds of good hops, well rubbed and separated as they are put in. Now make the copper boil, and keep it with the lid off, at a good brisk boil for a full hour, or an hour and a half. When the boiling is done, put the liquor into the coolers, but strain out the hops in a small clothes-basket or wickerbasket. Now set the coolers in the most convenient place, in doors or out of doors, as most convenient.

The next stage is the tun-tub, where the liquor is set to work. A great point is, the degree of heat that the liquor is to be at, when it is set to work. The proper heat is 70o; so that a thermometer makes the matter sure. In the country they determine the degree of heat by merely putting a finger into the liquor.

When cooled to the proper heat, put it into the tuntub, and put in about half a pint of good yeast. But the yeast should first be put into half a gallon of the liqueur, and mixed well; stirring in with the yeast a handful of wheat or rye-flour. This mixture is then to be poured out clean into the tun-tub, and the mass of the liquor agitated well, till the yeast be well mixed with the whole. When the liquor is thus properly put into the tun-tub and set a working, cover over the top, by laying a sack or two across it.

The tun-tub should stand in a place neither too warm nor too cold. Any cool place in summer, and any warm place in winter, and if the weather be very cold, some cloths or sacks should be put round the tun-tub while the beer is working. In about 6 or 8 hours a frothy head will rise upon the liquor, and it will keep rising, more or less slowly for 48 hours. The best way is to take off the froth at the end of about 24 hours, with a common skimmer, and in 12 hours take it off again, and so on, till the liquor has done working, and sends up no more yeast. Then it is

beer, and, when it is quite cold (for ale or strong beer), put it into the cask by means of a funnel. It must be cold before this is done, or it will be foxed; that is, have a rank and disagreeable taste.

The cask should lean a little on one side when filling it, because the beer will work again, and send more yeast out of the bung hole. Something will go off in this working, which may continue for 2 or 3 days, so that when the beer is being put in the cask, a gallon or two should be left, to keep filling up with as the working produces emptiness. At last when the working is completely over, block the cask up to its level. Put in a handful of fresh hops, fill the cask quite full, and bung it tight, with a bit of coarse linen round the bung.

When the cask is empty, great care must be taken to cork it tightly up, so that no air gets in; for, if so, the cask is moulded and spoilt for ever.

The Small Beer.

Thirty-six gallons of boiling water are to go into the mashing-tub; the grains are to be well stirred up, as before; the mashing-tub is to be covered over, and the mash is to stand in that state for an hour; then draw it off into the tun-tub.

By this time the copper will be empty again, by putting the ale liquor to cool. Now put the small beer wort into the copper with the hops used before, and with half a pound of fresh hops added to them; and boil this liquor briskly for an hour.

Take the grains and the sediment clean out of the mashing-tub, put the birch twigs in again, and put down the stick as before. Put the basket over, and take the liquor from the copper (putting the fire out first) and pour it into the mashing-tub through the basket. Take the

basket away, throw the hops on the dunghill, and leave the small beer liquor to cool in the mashing-tub. Here it is to remain to be set to working, only more yeast will be wanted in proportion; and there should be for 36 galls. of small beer, 3 half pints of good yeast.

Proceed now as with the ale, only, in the case of the small beer it should be put into cask, not quite cold; or else it will not work in the barrel, as it ought to do. It will not work so strongly nor so long as ale; and may be put in the barrel much sooner, in general the next day after it is brewed.

All the utensils should be well cleaned and put away as soon as they are donewith. "I am now," says Mr. Cobbet, "in a farm house, where the same set of utensils has been used for forty years; and the owner tells me that they may last for forty years longer."

To Brew Ale and Porter from Sugar and Malt.

To every quarter of malt take 100 lbs. of brown sugar, and in the result, it will be found that the sugar is equal to the malt. The quarter of malt is to be brewed with the same proportions, as though it were 2 quarters; and sugar is to be put into the tun, and the first wort let down upon it, rousing the whole well together.

The other worts are then to be let down, and the fermentation and other processes carried on as in the brewing of malt.

To Brew Burton Ale.

Of this strong ale, only a barrel and a half is drawn from a quarter, at 180o for the first mash and 190o for the second, followed by a gyle of table beer. It is tunned at 58o, and cleansed at

72o. The Burton brewers use the finest pale malt, and grind it a day or two before being used. They employ Kentish hops, from 6 to 8 lbs. per quarter. To Brew Nottingham Ale in the small way.

The first copperful of boiling water is to be put into the mash-tub, there to lie a quarter of an hour till the steam is far spent; or as soon as the hot water is put in, throw into it a pail or two of cold water, which will bring it at once to a proper temperature; then let 3 bus. of malt run leisurely into it, and stir or mash all the while, but no more than just to keep the malt from clotting or balling; when that is done, put 1 bus. of dry malt at the top, and let it stand covered 2 hours, or till the next copperful of water is boiled, then lade over the malt 3 handbowlsful at a time. These run off at the cock or tap by a very small stream before more is put on, which again must be returned into the mash-tub till it comes off exceedingly fine. This slow way takes 16 hours in brewing 4 bus. of malt. Between the ladings, put cold water into the copper to boil, while the other is running off; by this means, the copper is kept up nearly full, and the cock is kept running to the end of the brewing. Only 21 galls. must be saved of the first wort, which is reserved in a tub, wherein 4 oz. of hops are put, and then it is to be set by.

For the second wort there are 20 galls. of water in the copper boiling which must be laded over in the same manner as the former, but no cold water need be mixed. When half of this is run out into a tub, it must be directly put into the copper with half of the first wort, strained through the brewing sieve as it lies on a small loose wooden frame over the copper, in order to keep those hops that were first put in to preserve it, which is to make the first copper 21 galls. Then, upon its beginning to boil, put in 1 lb. of hops in 1 or 2 canvas bags, somewhat larger than will just contain the hops, that an allowance may be given for their swell; this boil very briskly for 1/2 an hour, when take the hops out and continue boiling the wort by itself till it breaks into particles a little ragged; it is then done, and must be dispersed into the cooling tubs very shallow. Put the remainder of the first and second wort together, and boil it in the

same manner, and with the same quantity of fresh hops, as the first.

By this method of brewing, ale may be made as strong or as small as is thought fit, and so may the small beer that comes after.

To brew Essex Ale.

Procure 2 mashing-tubs, 1 that will mash 4 bus., and the other 2 bus., and a copper that holds 1/2 a hogshead. The water, when boiled, is put in to the largest tub, and a pail of cold water immediately on that; then put the malt in by a handbowlful at a time, stirring it all the while, and so on in a greater quantity by degrees (for the danger of balling is mostly at first), till at last 1/2 a bus. of dry malt is left for a top-cover; thus let it stand 3 hours. In the meanwhile, another copper of water is directly heated, and put as before into the other mash-tub. for mashing 2 bus. of malt, which stands that time. Then, after the wort of the 4 bus. is run off, let that also of the 2 bus. spend, and lade it over the 4 bus., the cock running all the while, and it will make in all a copper and a half of wort, which is boiled twice; that is, when the first copper is boiled an hour, or till it breaks into large cakes; then take half out, and put the remaining raw wort to it, and boil it about 1/2 an hour till it is broken. Now while the 2 worts are running off, a copper of water almost scalding hot is made ready, and put over the goods or grains of both tubs; after an hour's standing the cock is turned, and this second wort is boiled away and put over the grains of both tubs to stand 1 hour; when off, it is put into the copper and boiled again, and then serves hot instead of the first water, for mashing 4 bus. of fresh malt; after it has again lain 3 hours, and is spent off, it is boiled, but while in the mash-tub, a copper of water is heated to put over the goods or grains, which stands 1 hour, and is then boiled for small beer. And thus may be brewed 10 bus. of malt with 2 1/2 lbs. of hops for the whole.

To brew Edinburgh Ale.

Adopt the best pale malt.

1st. Mash two barrels per quarter, at 183o (170o); mash three-quarters of an hour, let it stand one hour, and allow half an hour to run off the wort.

2nd. Mash one barrel per quarter, at 190o (183o); mash three-quarters of an hour, let it stand three-quarters of an hour, and tap as before.

3rd. Mash one barrel per quarter, at 160o; mash half an hour, let it stand half an hour' and tap as before. The first and second wort may be mixed together, boiling them about an hour or an hour and a quarter, with a quantity of hops proportioned to the time the beer is intended to be kept.

The two first may be mixed at the heat of 60o or 65o in the gyle-tun, and the second should be fermented separately for small beer.

Bavarian or Lager Beer.

The malt is first mixed with water of ordinary temperature, for 1 part of malt about 39 parts of water are employed. The whole is allowed to rest 6 or 8 hours, after which the mashing is begun by mixing the mass with 3 parts of boiling water added gradually during continual agitation, by which its temperature is raised to 106o Fahr. The thick part of the mash is then transferred to the copper and heated to boiling with constant agitation, and after an hour's boiling again returned to the mash-tun and mixed thoroughly with its liquid contents, by which the temperature in the mash-tun is raised to 133o. The thick part of the mash is once more transferred to the copper and boiled for an hour and returned to the mash-tun, by which the temperature is raised to 154o. The fluid part of the mash is then transferred to the copper and

boiled for a quarter of an hour, and then poured back upon the mash in the tun, and mixed thoroughly with it. The temperature is thereby raised to from 167o to 180o. After agitation for a quarter of an hour the mash is left at rest for an hour or an hour and a half, after which the clear wort is drawn off.

The fermentation of lager is peculiar, it is performed very slowly, and at a temperature from 32o to 46 1/2o Fahr. The yeast, instead of rising, falls to the bottom. The high temperature of the mash causes all albuminous matter to be coagulated and much gummy matter remains unchanged. This, together with the bottom fermentation, carries off all nitrogenous matter; the beer is exceedingly clear. It is put in hogsheads lined with common rosin, and is preserved a long time in vaults or cellars before being used.

White Beer.

Boil enough ale wort, preferably pale, for 1 barrel, with 3 handfuls of hops and 14 pounds of groats (hulled oats), until all the soluble matter is extracted from the latter. Strain, and when lukewarm add 2 pints of yeast, and when fermenting briskly bottle in strong stoneware bottles. Cheap and Agreeable Table Beer.

Take 15 galls. of water and boil one-half, putting the other into a barrel; add the boiling water to the cold, with 1 gall. of molasses and a little yeast. Keep the bung-hole open till the fermentation is abated.

To make Sugar Beer.

Very excellent beer is made of sugar, and also of treacle. First boil a peck of bran in 10 galls. of water, strain the bran off, and mix with the branny water 3 pounds of sugar, first stirring it

well. When cool enough add a teacupful of the best yeast, and a tablespoonful of flour to a bowl nearly full of the saccharine matter, which, when it has fermented for about an hour, is to be mixed with the remainder, and hopped with about 1/2 lb. hops; and the following day it may be put into the cask, to ferment further, which usually takes 3 days, when it is to be bunged and it will be fit for drinking in a week. Treacle beer is made in the same way, 3 lbs. of it being used instead of 3 lbs. of sugar.

N.B. - This beer will not keep any length of time.

Spruce Beer.

Boil 8 galls. of water and when in a state of complete ebullition pour it into a beer barrel which contains 8 galls. more of cold water; then add 16 lbs. of molasses, with a few tablespoonfuls of the essence of spruce, stirring the whole well together; add half a pint of yeast, and keep it in a temperate situation, with the bung-hole open for two days till the fermentation be abated, when the bung may be put in and the beer bottled off. It is fit to drink in a day or two. If you can get no essence of spruce make a strong decoction of the small twigs and leaves of the spruce firs.

Another Receipt.

Take of oil of spruce, sassafras, and wintergreen, each 40 drops; pour 1 gall. of boiling water on the oils, then add 4 galls. of cold water, 3 pints of molasses, 1 pint of yeast. Let it stand for 2 hours and bottle.

Root Beer.

Take 3 galls. of molasses; add 10 galls. of water at 60o Fahr. Let this stand 2 hours, then pour into a barrel, and add powdered or bruised sassafras and wintergreen bark each 3 lb., bruised sarsaparilla root 1/2 lb., yeast 1 pint, water enough to fill the barrel, say 25 galls. Ferment for 12 hours and bottle.

Ginger Pop.

Crushed white sugar 28 lbs, water 30 galls., yeast 1 pint, powdered ginger (best) 1 lb., essence of lemon 1/2 oz., essence of cloves 1/4 oz. To the ginger pour half a gallon of boiling water and let it stand 15 or 20 minutes. Dissolve the sugar in 2 gall. of warm water, pour both into a barrel half filled with cold water, then add the essence and the yeast, let it stand half an hour, then fill up with cold water.

Let it ferment 6 to 12 hours, and bottle.

Ginger Beer.

Take of good Jamaica ginger 2 1/2 oz., moist sugar 3 lbs., cream of tartar 1 oz., the juice and peel of two middlingsized lemons, brandy 1/2 pint, good solid ale yeast 1/4 pint, water 3 1/2 galls. This will produce 4 1/2 dozen of excellent ginger beer, which will keep 12 months. Bruise the ginger and sugar, and boil them for 20 or 25 minutes in the water; slice the lemon and put it and the cream of tartar into a large pan, pour the boiling liquor upon them, stir it well round, and when milk warm add the yeast. Cover it over, let it remain 2 or 3 days to work, skimming it frequently; then strain it through a jelly-bag into a cask; add the brandy, bung down very close, and at the end of a fortnight or 3 weeks draw it off and bottle, and cork very tight; tie the cork down with twine or wire. If it does not work well at first, add a little more yeast, but be careful not to add too much, lest it taste of it. Mead.

Take of honey 3 galls., heat to the boiling point, taking great care that it does not boil over, pour this into a barrel half filled with cold water, let it stand 20 or 25 minutes, and add yeast 1 pint, oil nutmeg 1 tablespoonful, oil of lemon or orange 1 ounce. Fill the barrel with water, and let it ferment.

Sarsaparilla Beer, or Lisbon Diet Drink.

Take of compound syrup of sarsaparilla 1 pint, good pale ale 7 pints. Use no yeast.

Cheap Beer.

Pour 10 galls. of boiling water upon 1 peck of malt in a tub, stir it about well with a stick, let it stand about half an hour, and then draw off the wort, pour 10 galls. more of boiling water upon the malt, letting it remain another half hour, stirring it occasionally, then draw it off and put it to the former wort. When this is done, mix 4 oz. of hops with it, and boil it well; then strain the hops from it, and when the wort becomes milk warm put some yeast to it to make it ferment; when the fermentation is nearly over, put the liquor into a cask, and, as soon as the fermentation has perfectly subsided, bung it close down. The beer is then fit for use.

To make Beer and Ale from Pea-shells.

No production of this country abounds so much with vegetable saccharine matter as the shells of green peas. A strong decoction of them so much resembles, in odor and taste, an infusion of malt (termed wort) as to deceive a brewer. This decoction, rendered slightly bitter with the wood sage, and afterwards fermented with yeast, affords a very excellent beverage. The method employed is as follows:

Fill a boiler with the green shells of peas, pour on water till it rises half an inch above the shells, and simmer for three hours. Strain off the liquor, and add a strong decoction of the wood-sage, or the hop, so as to render it pleasantly bitter, then ferment in the usual manner. The woodsage is the host substitute for hops, and, being free from any anodyne property, is entitled to a preference. By boiling a fresh quantity of shells in the decoction before it becomes cold, it may be so thoroughly impregnated with saccharine matter as to afford a liquor, when fermented, as strong as ale.

Required Time for Keeping Beer.

This depends on the temperature at which the beer has been made, thus:

Beer made at 110o will produce beer which may in a fortnight; at 124o, in a month; at 130o, in 2 months; at 134o, in 4 months; at 138o, in 6 months; at 143o, in 8 months; at 145o, in 10 months; at 152o, in 15 months; at 157o, in 20 months; at 162o, in 24 months.

To give any required Brightness or Color to Beer. This depends on the temperature at which the malt has been made, and on its color, thus:

Malt made at 119o produces a white; at 124o a cream color; at 129o, a light yellow; at 134o, an amber color. These, when properly brewed, become spontaneously fine, even as far as 138o. When brewed for amber, by repeated fermentations, they become pellucid. At 138o, a high amber, at 143o, a pale brown.

By precipitation, these grow bright in a short time. At 148o, a brown, at 152o, a high brown.

With precipitation these require 8 or 10 months to be bright. At 157o, a brown, inclining to

black; at 162o, a brown speckled with black.

With precipitation these may be fined, but will never become bright. At 167o, a blackish brown speckled with black; at 171o, a color of burnt coffee, at 176o, a black. These with difficulty can be brewed without setting the goods, and will by no means become bright, not even with the strongest acid menstruum.

To Brew Amber Beer.

Amber is now out of fashion, but formerly was drunk in great quantities in London, mixed with bitters, and called purl. The proportions of malt were 3 qrs. amber, and 1 qr. pale, with 6 lbs. of hops to the qr. The first liquor is usually tunned at 170o, and the second at 187o. The worts are boiled together for 2 hours. It is tunned at 64o, and after 24 hours roused every 2 hours till the heat is increased to 74o. It is then skimmed every hour for 6 hours and cleansed, and generally used as soon as it has done working in the barrels.

Another Method of Brewing Amber Beer, or Two-penny. For 36 galls.: malt, 1 1/2 bus.; hops, 1 lb., liquorice root, 1 lb. 8 oz.; treacle, 5 lb., Spanish liquorice, 2 oz.; capsicum, 2 drs. Frequently drunk the week after it is brewed; used in cold weather as a stimulant.

To make Molasses Beer.

For small beer, put 9 lbs. of molasses into a barrelcopper of cold water, first mixing it well and boiling it briskly with 1/4 lb. of hops or more 1 hour, so that it may come off 27 galls.

To Fine Beer.

To fine beer, should it be requisite, take an ounce of isinglass, cut small, and boil it in 3 qts. of beer, till completely dissolved; let it stand till quite cold then; put it into a cask, and stir it well with a stick or whisk; the beer so fined should be tapped soon, because the isinglass is apt to make it flat as well as fine.

Another Method.

Take a handful of salt, and the same quantity of chalk scraped fine and well dried; then take some isinglass, and dissolve it in some stale beer till it is about the consistence of syrup; strain it, and add about a quart to the salt and chalk, with 2 qts. of molasses. Mix them all well together with a gallon of the beer, which must be drawn off; then put it into the cask, and take a stick or whisk, and stir it well till it ferments. When it has subsided, stop it up close, and in 2 days it may be tapped. This is sufficient for a butt.

Another. - Take 1 pt. of water, and 1/2 an oz. of unslaked lime, mix them well together, letting the mixture stand for 3 hours, that the lime may settle at the bottom. Then pour off the clear liquor, and mix with it 1/2 oz. of isinglass, cut small and boiled in a little water; pour it into the barrel, and in 5 or 6 hours the beer will become fine. Another. - In general, it will become sufficiently fine by keeping, but fineness may be promoted by putting a handful of scalded hops into the cask. If the beer continues thick, it may then be fined by putting 1 pt. of the following preparation into the barrel:

Put as much isinglass into a vessel as will occupy 1/3; then fill it up with old beer. When dissolved rub it through a sieve, and reduce it to the consistency of treacle with more beer. A pint of this put into the cask and gently stirred with a short stick, will fine the barrel in a few hours.

To Fine Cloudy Beer.

Rack off the cask, and boil 1 lb. of new hops in water, with coarse sugar, and when cold put in at the bunghole. Or, new hops soaked in beer, and squeezed, may be put into the cask.

Or, take 10 lbs. of baked pebblestone powder, with the whites of 6 eggs, and some powdered baysalt, and mix them with 2 galls. of the beer. Pour in the whole into the casks, and in 3 or 4 days it will settle, and the beer be fine and agreeable.

To Recover Thick, Sour Malt Liquor.

Make strong hop tea with boiling water and salt of tartar, and pour it into the cask.

Or; rack the cask into 2 casks of equal size, and fill them up with new beer.

To Vamp Malt Liquors.

Old beer may be renewed by racking 1 cask into 2, and filling them from a new brewing, and in 3 weeks it will be a fine article.

To Restore Musty Beer.

Run it through some hops that have been boiled in strong wort, and afterwards work it with double the quantity of new malt liquor; or if the fault is in the cask, draw it off into a sweet cask, and having boiled 1/2 lb. of brown sugar in 1 qt. of water, add 1 or 2 spoonsful of yeast before it is quite cold, and when the mixture ferments, pour it into the cask.

To Enliven and Restore Dead Beer.

Boil some water and sugar, or water and treacle, together, and when cold add some new yeast; this will restore dead beer, or ripen bottled beer in 24 hours, and it will also make worts work in the tun if they are sluggish. Or, a small teaspoonful of carbonate of soda may be mixed with a quart of it as it is drawn for drinking. Or, boil for every gallon of the liquor 3 oz. of sugar in water; when cold add a little yeast, and put the fermenting mixture into the flat beer, whether it be a full cask or the bottom of the cask.

Or, beer may often be restored which has become flat or stale, by rolling and shaking the casks for a considerable time, which will create such a new fermentation as to render it necessary to open a vent-pipe to prevent the cask from bursting.

A Speedy way of Fining and Preserving a Cask of Ale or Beer.

Take a handful of the hops boiled in the first wort, and dried; 1/2 lb. of loaf sugar dissolved in the beer; 1 lb. of chalk; and 1/2 lb. of calcined oyster-shells. Put the whole in at the bung-hole, stirring them well and then rebunging. This preparation will also suit for racked beer; in putting in the hops it may be advisable to place them in a net with a small stone in the bottom so as to sink them, otherwise they will swim at the top.

To Prevent Beer Becoming Stale or Flat. - First Method. To a quart of French brandy put as much wheat or bean flour as will make it into a dough, and pat it in, in long pieces, at the bung-hole, letting it fall gently to the bottom. This will prevent the beer growing stale, keep it in a mellow state, and increase its strength.

Second Method.

To 1 lb. of treacle or honey add 1 lb. of the powder of dried oyster shells, or of soft mellow chalk; mix these into a stiff paste and put it into the butt. This will preserve the beer in a soft and mellow state for a long time.

Third Method.

Dry a peck of egg-shells in an oven, break and mix them with 2 lbs. of soft mellow chalk, and then add some water wherein 4 lbs. of coarse sugar have been boiled, and put it into the cask. This will be enough for 1 butt.

Fourth Method.

In a cask containing 18 gals. of beer, put a pint of ground malt suspended in a bag, and close the bung perfectly; the beer will be improved during the whole time of drawing it for use.

Make use of any of these receipts most approved of, observing that the paste or dough must be put into the cask when the beer has done working, or soon after, and bunged down. At the end of 9 or 12 months tap it, and you will have a fine, generous, wholesome and agreeable liquor.

When the great quantity of sediment that lies at the bottom of the cask is neglected to be cleaned, this compound of malt, hops and yeast so affects the beer that it renders it prejudicial to health. On this account, during the whole process of brewing do not allow the least sediment to mix with the wort in removing it from one tub or cooler to the other; especially be careful, when tunning it into the cask, not to disturb the bottom of the working tub, which would prevent its ever being clear and fine. Again, by keeping it too long in the working tub, persons who make a profit of the yeast frequently promote an undue fermentation, and keep it constantly in that state for 5 or 6 days, which causes all the spirit that should keep the beer soft and mellow to evaporate; and it certainly will get stale and hard unless it has something

wholesome to feed on.

It is the practice of some persons to beat in the yeast while the beer is working, for several days together, to make it strong and heady and to promote its sale. This is a pernicious custom. Therefore let the wort have a free, natural and light fermentation, and one day in the working tub will be long enough during cold weather, but turn it the second day at the farthest, throw out the whole brewing, and afterwards introduce no improper ingredients.

To Prevent and Cure Foxing in Malt Liquors.

Foxing, sometimes called bucking, is a disease of malt fermentation which taints the beer. It arises from dirty utensils, putting the separate worts together in vessels not deep enough, using bad malt; by turning on the liquors at too great heats, and brewing in too hot weather. It renders the beer ropy and viscid like treacle, and it soon turns sour. When there is danger of foxing, a handful of hops should be thrown into the raw worts while they are drawing off and before they are boiled, as foxing generally takes place when, from a scantiness of utensils, the worts are obliged to be kept some time before they are boiled. When there is a want of shallow coolers, it is a good precaution to put some fresh hops into the worts and work them with the yeast. If the brewing foxes in the tun while working, hops should then be put into it, and they will tend to restore it, and extra care ought to be taken to prevent the lees being transferred to the barrels.

Some persons sift quick-lime into the tun when the brewing appears to be foxed. If care is not taken to cleanse and scald the vessels after foxing subsequent brewings may become tainted.

Other Methods of Curing Foxing.

Cut a handful of hyssop small; mix it with a handful of salt, and put it into the cask. Stir and stop close. Or, infuse a handful of hops and a little salt of tartar in boiling water; when cold strain the liquor off and pour it into the cask, which stop close.

Or, mix 1 oz. of alum with 2 oz. of mustard seed, and 1 oz. of ginger; stir them in the rack and stop close. Or, in a fortnight rack off the foxed beer, and hang 2 lbs. of bruised Malaga raisins in a bag within the cask, and put in a mixture of treacle, bean-flour, mustard-seed, and powdered alum.

To restore a Barrel of Ropy Beer.

Mix a handful of bean-flour with a handful of salt, and stir it in at the bung-hole; or take some well infused hops, and mix them in with some settlings of strong wort, and stir the mixture in at the bung-hole. Or, powder 1/2 oz. of alum very fine, and mix with a handful of bean-flour. To make a Butt of Porter, Stout.

Insert 4 galls. of molasses and some finings; stir it well. In a week draw off the cask by a cock inserted half way down.

To restore Frosted Beer.

Such beer is usually sweet and foul, and will never recover of itself, but to remedy this, make a pailful of fresh wort, into which put a handful of rubbed hops, and boil them half an hour, so that it may be very bitter, and when almost cold, draw a pailful from the cask, and re-fill it with the bitter wort. Fermentation will re-commence, but when this is over bung it up for a month. If it is not then restored, rack it into another cask, and put into it 1/2 a peck of parched wheat, and 1 lb. of good hops, dried and rubbed, and tied up in a net. Bung it down, leaving

the venthole open for a day or two, and in a month it will be fine liquor.

To give New Ale the Flavor of Old.

Take out the bung, and put into the cask a handful of pickled cucumbers; or a sliced Seville orange, and either mode will add an apparent six months to the age of the ale.

To give Beer a Rich Flavor.

Put six sea biscuits into a bag of hops, and put them into the cask.

To preserve Brewing Utensils.

In cleaning them before being put away, avoid the use of soap, or any greasy material, and use only a brush and scalding water, being particularly careful not to leave any yeast or fur on the sides.

To prevent their being tainted, take wood ashes and boil them to a strong lye, which spread over the bottoms of the vessels scalding, and then with the broom scrub the sides and other parts.

Or, take bay-salt, and spread it over the coolers, and strew some on their wet sides, turning in scalding water and scrubbing with a broom.

Or, throw some stone-lime into water in the vessel, and scrub over the bottom and sides, washing afterwards with clean water.

To sweeten Stinking or Musty Casks.

Make a strong lye of ash, beech, or other hard wood ashes, and pour it, boiling hot, into the bung-hole, repeating it as often as there is occasion.

Or, fill the cask with boiling water, and then put into it some pieces of unslaked lime, keeping up the ebullition for half an hour. Then bung it down, and let it remain until almost cold when turn it out.

Or, mix bay-salt with boiling water, and pour it into the cask, which bung down, and leave it to soak.

Or, if the copper be provided with a dome, and a steampipe from its top, pass the steam into the casks. Or, unhead the cask, scrub it out, head it again; put some powdered charcoal into the bung-hole, and two quarts of a mixture of oil of vitriol and cold water. Then bung it tight, and roll and turn the cask for some time. Afterwards wash it well and drain it dry.

Or, take out the head, and brush the inside with oil of vitriol; afterwards wash it, then burn a slip of brown paper steeped in brimstone within the bung-hole, and stop it close for two hours, when it should be well washed with hot water.

Another Method.

Mix half a pint of the sulphuric acid (not the diluted) in an open vessel, with a quart of water, and whilst warm, put it into the cask, and roll it about in such a manner that the whole internal surface may be exposed to its motion. The following day add about 1 lb. of chalk or sal soda, and bung it up for three or four days, when it may be washed out with boiling water. By this process a very musty cask may be rendered sweet.

For sweetening musty bottles, it will be only necessary to rinse the inside with the diluted sulphuric acid in the above-mentioned proportions. The addition of chalk, if it were immediately corked, would burst the bottle, and if the cask be old, it would be advisable to let a little of the gas escape before bunging it.

Another. - If a cask, after the beer is drunk out, be well stopped, to keep out the air, and the lees be suffered to remain in it till used again, scald it well, taking care that the hoops be well driven on, before filling; but should the air get into an empty cask, it will contract an ill scent, notwithstanding the scalding; in which ease a handful of bruised pepper, boiled in the water, will remove it, though the surest way is to take out the head of the cask that it may be shaved, then burn it a little, and scald it for use; if this cannot be conveniently done, get some limestone, put about 3 lbs. into a barrel (and in same proportion for larger or smaller vessels), put to it about 6 gall. of cold water, bung it up, shake it about for some time and afterwards scald it well. Or, in lieu of lime, match it well and scald it. Then the smell will be entirely removed. If the casks be new, dig holes in the earth, and lay them in to about half their depth, with their bungholes downwards, for a week. After which scald them well, and they will be ready for use.

Another. - The process of charring fails only in the fire not being able to penetrate into the chasms or chinks of the cask, into which the coopers (to mend bad work) often insert strips of paper, or other substance, to make it watertight, which in time become rotten and offensive; in order to remedy this, put into a cask containing a quantity of water (say about 2 gall. in a hogshead) $\frac{1}{10}$ th of its weight of sulphuric acid (oil of vitriol), and let this be shaken for some time; this is to be poured out, the cask well washed, and then rinsed with a few gallons of lime-water or sal soda. It is needless to say, that it ought likewise to be washed out.

The theory is, that sulphuric acid has the property, when used alone, of charring wood, and

when diluted has sufficient strength to destroy must, etc., with the additional advantage of entering into every crevice. The lime in solution seizes any particle of acid which the first washing might leave, and converts it into an insoluble, inoffensive, neutral salt, such as, if left in the cask, would not in the least injure the most delicate liquor. London Coopers' mode of Sweetening Casks. It is their system to take out the head, place the cask over a brisk fire, and char the inside completely. The head is then put in again, and the cask, before used, is filled 2 or 3 times with hot liquor, bunged down and well shaken before it is used again.

Method of Seasoning New Casks.

Put the staves just cut and shaped, before they are worked into vessels, loose in a copper of cold water, and let them heat gradually so that they are well boiled, and in boiling take out a handbowl of water at a time, putting in fresh, till all the redness is out of the liquor, and it becomes clear from a scum of filth that will arise from the sap so boiled out; also take care to turn the staves upside down, that all their parts may equally have the benefit of the hot water. Observe also that in a dry, sultry summer the sap is more strongly retained in the wood, than in a cool and moist one, and therefore must have the more boiling. Then, when the vessel is made, scald it twice with water and salt boiled together and it may be readily filled with strong beer without fearing any twang from the wood.

Fermentation by Various Means.

First Substitute for Yeast.

Mix 2 quarts of water with wheat flour to the consistence of thick gruel, boil it gently for half an hour, and when almost cold stir into it 1/2 lb. of sugar and 4 spoonfuls of good yeast. Put

the whole into a large jug or earthen vessel with a narrow top, and place it before the fire, so that it may by a moderate heat ferment. The fermentation will throw up a thin liquor, which pour off and throw away; keep the remainder for use (in a cool place) in a bottle or jug tied over. The same quantity of this, as of common yeast, will suffice to bake or brew with. Four spoonfuls of this yeast will make a fresh quantity as before, and the stock may be always kept up by fermenting the new with the remainder of the former quantity.

Second Substitute.

Take 6 quarts of soft water and 2 handfuls of wheaten meal or barley; stir the latter in the water before the mixture is placed over the fire, where it must boil till twothirds are evaporated. When this decoction becomes cool incorporate with it, by means of a whisk, 2 drachms of salt of tartar and 1 drachm of cream of tartar, previously mixed. The whole should be kept in a warm place. Thus a very strong yeast for brewing, distilling and baking may be obtained. For the last-mentioned purpose, however, it ought to be diluted with pure water, and passed through a sieve before it is kneaded with the dough, in order to deprive it of its alkaline taste. In countries where yeast is scarce, it is a common practice to twist hazel twigs so as to be full of chinks, and then steep them in ale-yeast during fermentation. The twigs are then hung up to dry, and at the next brewing they are put into the wort instead of yeast. In Italy the chips are frequently put into turbid wine for the purpose of clearing it; this is effected in about 24 hours.

Third Substitute.

Take 1 lb. of fine flour, make it the thickness of gruel with boiling water, add to it 1/2 a lb. of raw sugar. Mix them well together. Put 3 spoonfuls of well purified yeast into a large vessel, upon which put the above ingredients; they will soon ferment violently. Collect the yeast off

the top and put it into a brown small-neck pot, and cover it up from the air; keep it in a dry and warmish place; when used in part, replace with flour made into a thin paste, and sugar in the former proportions. The above will be fit for use in five months, and no yeast is necessary except the first time.

Fourth Substitute.

Boil flour and water to the consistence of treacle, and when the mixture is cold saturate it with fixed air. Pour the mixture thus saturated into one or more large bottles or narrow-mouthed jars; cover it over loosely with paper, and upon that lay a slate or board with a weight to keep it steady. Place the vessel in a situation where the thermometer will stand from 70o to 80o, and stir up the mixture 2 or 3 times in the course of 24 hours. In about 2 days such a degree of fermentation will have taken place as to give the mixture the appearance of yeast. With the yeast in this state and before it has acquired a thoroughly vinous smell, mix the quantity of flour intended for bread in the proportion of 6 lbs. of flour to a quart of the yeast, and a sufficient portion of warm water. Knead them well together in a proper vessel, and covering it with a cloth, let the dough stand for 12 hours, or till it appears to be sufficiently fermented in the forementioned degree of warmth. It is then to be formed into loaves and baked. The yeast would be more perfect if a decoction of malt were used instead of simple water. Fifth Substitute.

A decoction of malt alone, without any addition, will produce a yeast proper enough for the purpose of brewing. This discovery was made by Joseph Senyor, and he received for it a reward of 20. from the Society for Promoting Arts, Manufactures and Commerce. The process is as follows: Procure 3 earthen or wooden vessels of different sizes and apertures, one capable of holding 2 quarts, The other 3 or 4, and the third 5 or 6; boil 1/4 of a peck of malt for about 8 or 10 minutes in 3 pints of water, and when a quart is poured off from the grains, let it stand

in the first or smaller vessel in a cool place till not quite cold but retaining that degree of heat which the brewers usually find to be proper when they begin to work their liquor. Then remove the vessel into some warm situation near a fire, where the thermometer stands between 70o and 80o, and there let it remain till the fermentation begins, which will be plainly perceived within 30 hours; add then 2 qts. more of a like decoction of malt, when cool as the first was, and mix the whole in the second or larger vessel, and stir it well in, which must be repeated in the usual way, as it rises in a common vat; then add a still greater quantity of the same decoction, to be worked in the largest vessel, which will produce yeast enough for a brewing of 40 gallons.

Sixth Substitute.

Boil 1 lb. of good flour, 1/4 lb. of brown sugar and a little salt in 2 galls. of water for 1 hour. When milk warm bottle it and cork it close. It will be fit for use in 24 hours. One pint of this will make 18 lbs. of bread.

Seventh Substitute.

To 1 lb. of mashed potatoes (mealy ones are best) add 2 oz. of brown sugar and 2 spoonfuls of common yeast; the potatoes first to be pulped through a colander, and mixed with warm water to a proper consistence. Thus a pound of potatoes will make a quart of good yeast. Keep it moderately warm while fermenting.

Eighth Substitute.

Infuse malt, and boil it as for beer, in the mean time soak isinglass, separated to fibres, in

small-beer. Proportion the quantity of each, 1 oz. of isinglass to 2 qts. of beer. This would suffice for a hogshead of boiling wort, and the proportion may be diminished or increased accordingly. After soaking 5 minutes, set the beer and isinglass on the fire, stirring till it nearly boils; then turn it into a dish that will allow beating it up with a syllabub whisk to the consistence of yeast, and when almost cold put it to the wort.

Ninth Substitute.

Make a wort of the consistence of water-gruel with either rye or malt, ground very fine; put 5 galls. of it into a vessel capable of holding a few gallons more; dissolve 1 lb. of leaven in a small portion of the wort, and add it to the remainder with 2 1/4 lbs. of fine ground malt; mix the whole by agitation for some minutes, and in half an hour add 2 large spoonfuls of good yeast; incorporate it thoroughly with the mass, cover it close, and let it remain undisturbed for 48 hours in a moderate temperature. At the end of that period it will be found to be wholly converted into good yeast. It is requisite that the rye and malt should be fine and the leaven completely dissolved before being put to the remaining wort, which, previous to the yeast being added, should be at about 100o.

To Preserve Yeast.

Common ale yeast may be kept fresh and fit for use several months by the following method: Put a quantity of it into a close canvas bag, and gently squeeze out the moisture in a screw-press till the remaining matter be as firm and stiff as clay. In this state it may be close-packed up in a tight cask, for securing it from the air, and will keep fresh, sound, and fit for use for a long time.

Another Method.

Stir a quantity of yeast and work it well with a whisk, till it seems liquid and thin; then get a large wooden dish or tub, clean and dry, and with a soft brush lay a thin layer of yeast thereon turning the mouth downwards, to prevent its getting dusty, but so that the air may come to it to dry it. When that coat or crust is sufficiently dried, lay on another, which serve in the same manner and continue putting on others as they dry till 2 or 3 inches thick, which will be useful on many occasions; but be sure the yeast in the vessel be dry before more be laid on. When wanted for use, cut a piece out, lay it in warm water, stir it together, and it will be fit for use. If for brewing, take a handful of birch tied together, dip it into the yeast, and hang it to dry taking care to keep it free from dust. When the beer is fit to set to work, throw in one of these and it will work as well as fresh yeast. Whip it about in the wort and then let it lie. When the beer works well take out the broom, dry it again, and it will do for the next brewing.

To make Purl Bitters.

Take of Roman wormwood 2 doz. lbs., gentian root 6 lbs., calamus aromaticus (or the sweet-flag root) 2 pounds, snake-root 1 lb., horse-radish 1 bunch, orangepeel dried and juniper-berries, each 2 lbs., seeds or kernels of Seville oranges cleaned and dried 2 lbs. Cut these and bruise them, and put them into a clean butt, and start some mild brown or pale beer upon them, so as to fill up the vessel, about the beginning of November, which let stand till the next season. If a pound or two of galanga root is added to it the composition will be better. Cautions in the Use of Foreign Ingredients.

In general, the beer should be racked off first, because the sediments and lees will not accord with the foreign substances. Salt and alum in too large quantities induce staleness. The powder of soft stone, unburnt, should be avoided; too many whites of eggs are apt to make the beer ropy. The introduction of cocculus indicus confers a pernicious strength or headiness, which gratifies drunkards, but destroys the nervous system, and produces palsies and premature old

age. It has been well remarked, that the brewer that uses this slow but certain poison, as a substitute for a due quantity of malt, ought to be boiled in his own copper.

Bitters are in like manner pernicious in many states of the stomach. When oyster-shells are used the bung should be left out to avoid bursting.

Use of Sugar in Brewing.

Families brewing their own malt liquor may use 32 lbs. of brown sugar with 2 bushels of malt, which will produce 50 galls. of ale, as good in every respect as if made from 6 bushels of malt. The sugar is mixed with the wort as it runs from the mash-tub.

To Close Casks without Bungs.

Some persons cover the bung-hole simply with brown paper, fastened at the sides, and covered with clay; others have found a single piece of bladder, well fixed at the edges, a complete and efficacious substitute for a bung. These methods at least prevent the bursting of the cask from changes of air.

To Bottle Porter, Ale, etc.

In the first place the bottles should be clean, sweet and dry, the corks sound and good, and the porter or ale fine. When the bottles are filled, if for home consumption, they should not be corked till the day following, and if for exportation to a hot climate, they must stand 3 days or more; if the liquor is new, it should be well corked and wired, but for a private family they may do without wiring, only they should be well packed in sawdust, and stand upright. But if some ripe are wanted, keep a few packed on their sides, so that the liquor may touch the corks, and

this will soon ripen, and make it fit for drinking.

To Remove Tartness.

Put a teaspoonful of carbonate of soda into a quart of tart beer, and it will be pleasant and wholesome. To Bottle Malt Liquor.

It should be ripe, and not too young. Cork loose at first, and afterwards firm. For a day or two, keep the bottles in cold water, or in a cold place, or throw some cold water over them. Steep the corks in scalding water, to make them more elastic. Lay the bottles on their sides. When it is desired that the liquor should ripen soon, keep the bottles in a warmer place. October beer should not be bottled till midsummer; nor March beer till Christmas. If the ale is flat, or stale, put 3 horse-beans, or 3 raisins into each bottle, and to prevent the bottles' bursting, make a hole in the middle of the cork with an awl, or put into each bottle 1 or 2 peppercorns. If it is desired to ripen it quick, boil some coarse sugar in water and when cold ferment it with yeast. Then put in 3 or 4 spoonsful of it, with 2 cloves, and if kept in a warm place it will be ripe the next day. When the ale is sour, put into it a little syrup of capillaire, and ferment it with yeast; when settled bottle it, and put a clove or two with a small lump of sugar into each bottle. It is also useful to put 2 or 3 pieces of chalk, or some powdered chalk into the barrel before bottling.

To Bottle Table Beer.

As soon as a cask of table beer is received into the house, it is drawn off into quart stone bottles with a lump of white sugar in each, and securely corked. In three days it becomes brisk, is equal in strength to table ale, remarkably pleasant, very wholesome, and will keep many months.

To render Bottled Beer Ripe.

The following method is employed in Paris by some venders of bottled beer, to render it what they term ripe. It is merely by adding to each bottle 3 or 4 drops of yeast and a lump of sugar of the size of a large nutmeg. In the course of 24 hours, by this addition, stale or flat beer is rendered most agreeably brisk. In consequence of the fermentative process that takes place in it, a small deposit follows, and on this account the bottles should be kept in an erect position. By this means white wine may likewise be rendered brisk.

To manage Ale in the Cellar.

In general nothing is more necessary than to keep it well stopped in a cool cellar, looking occasionally to see that there is no leakage, and to open the vent holes, if any oozings appear between the staves of the stacks; but connoisseurs in malt liquor may adopt some of the following means: Leave the cock-hole of an upright cask or the venthole of an horizontal one, open for 2 or 3 months; then rack off into another cask with 1 or 2 lbs. of new hops, and closely bung and stop down. Or, leave the vent-holes open a month, then stop, and about a month before tapping draw off a little and mix it with 1 or 2 lbs. of new hops, which, having poured into the cask, it is again closely stopped. Or, salt may be used with the hops, as it always gives beer the flavor of age.

To Keep Hops for Future Use.

Hops lose all their fine flavor by exposure to the air and damp. They should be kept in a dry, close place, and lightly packed.

External links

wikipedia:Beer

Retrieved from "http://www.appropedia.org/Beer"

Categories: Environmental impact of products and services | Food and agriculture | Green living | Household Cyclopedia

- [2 watching users]
 - Page was last modified 07:00, 22 December 2009. Based on work by Chriswaterguy's bot, Stele Ely and Appropedia anonymous user 65.38.42.251.
 - Text is available under CC-BY-SA
-