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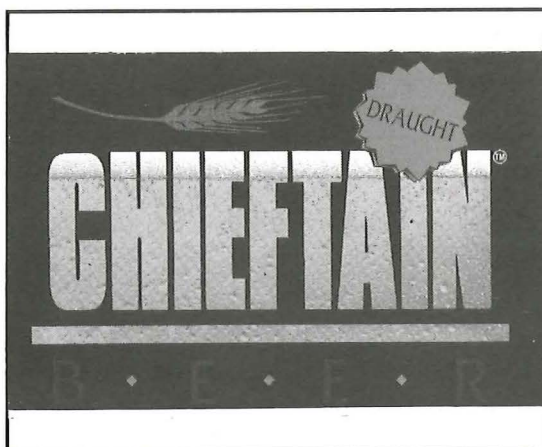
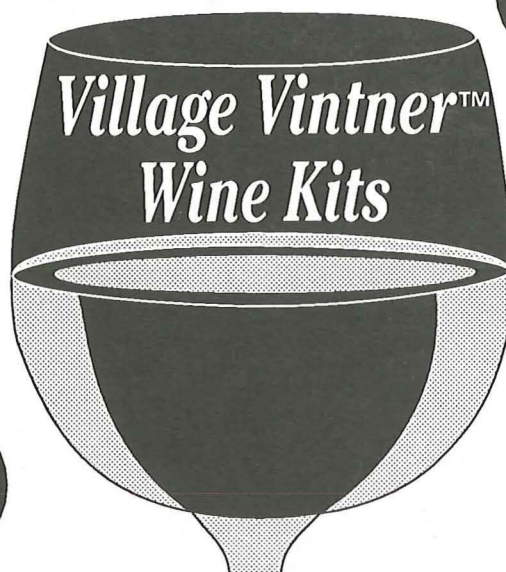
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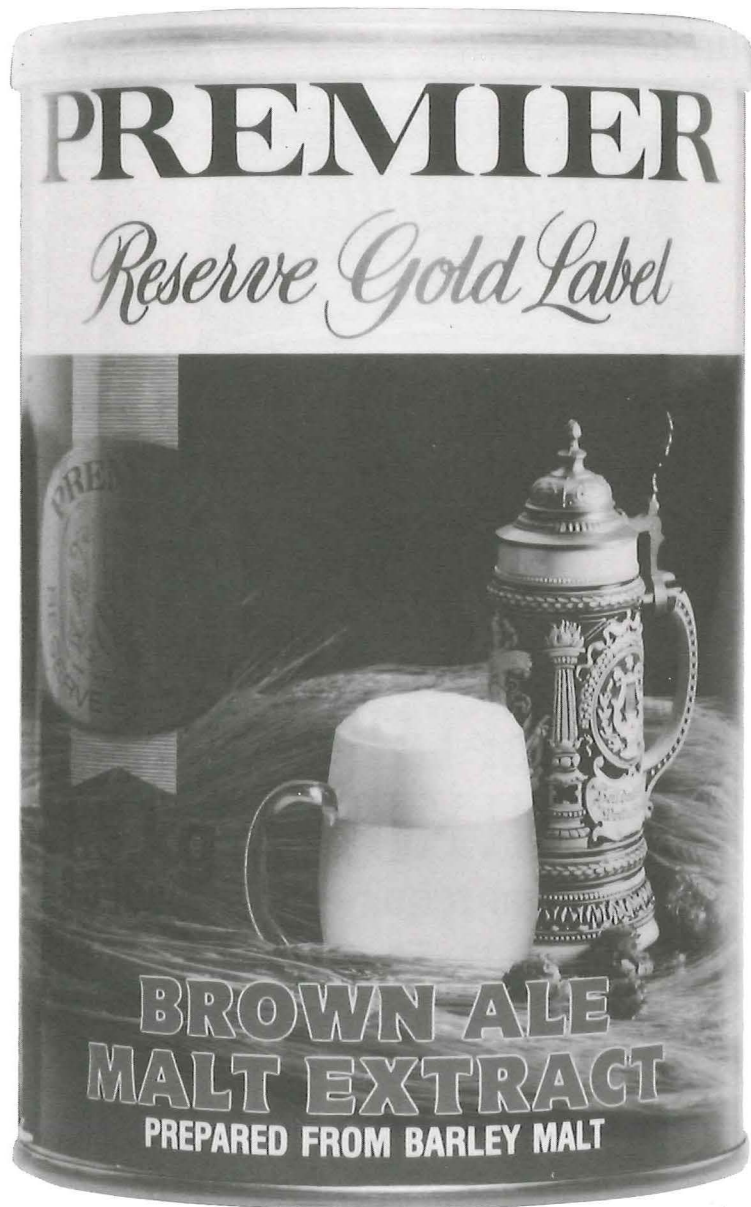
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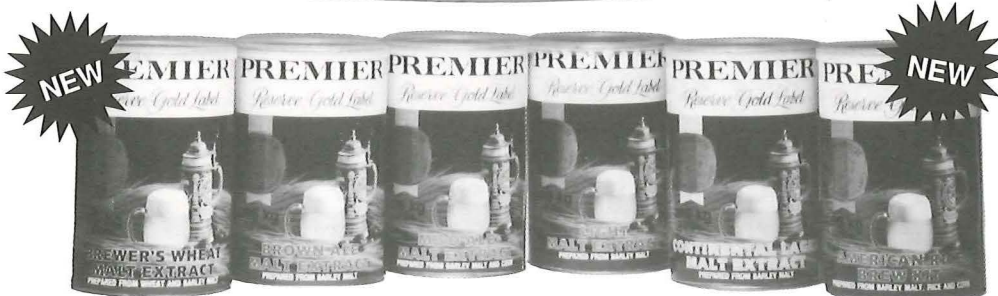
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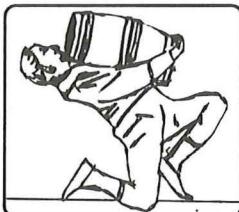
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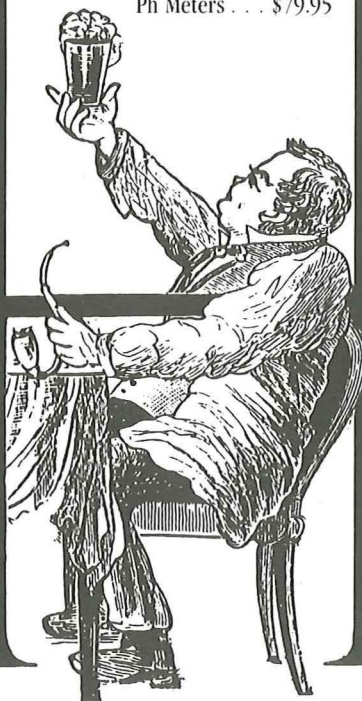
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The American Homebrewers Association is a subsidiary of The Association of Brewers. Membership is open to everyone. *zymurgy* is the journal of the American Homebrewers Association and is published five times a year. Subscription and U.S. memberships are US\$25 per year. Foreign: US\$30 per year. **Changing your address? Let us know in writing, please.**

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ISSN 0196-5921

Printing by EBSCO Media, Birmingham, Alabama. The opinions and views expressed in articles are not necessarily those of the American Homebrewers Association and its magazine, *zymurgy*.

THE AMERICAN HOMEBREWERS ASSOCIATION MISSION STATEMENT

To help maintain quality in the production and distribution of beer; to promote public awareness and appreciation of the quality and variety of beer through education, research and the collection and dissemination of information; to serve as a forum for the technological and cross-cultural aspects of the art of brewing; and to encourage responsible use of beer as an alcohol-containing beverage.

INTRODUCTION

CHARLIE PAPAZIAN

Not “Just Beer”

Just for starters, consider this: There are about 1,000 breweries in Germany, more than 300 in North America, over 100 in the United Kingdom, and each of these breweries probably brews four to eight different kinds of beer. Then there's the rest of the world and a thousand more breweries that we could learn about if we made the effort. If this isn't enough to boggle the mind, let me ask how many breweries don't we know about in the Soviet Union and China?


Twenty thousand different beer styles? Not too farfetched if you think about it. Well, wait a minute, what is a beer style? Is the beer I brew unique to my brewery? Can anyone else brew a similar “style” beer if they want to? What about all those temperature fluctuations affecting fermented flavors? What about all those house flavors I seem to enjoy? How could anyone ever duplicate my beer? These are questions all brewers ask at one point in their endeavors.

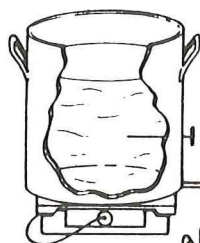
But because we are brewers and beer enthusiasts, we capture something more than brewing, serving or enjoying “just beer.” Now don't misunderstand, there's nothing wrong with the notion “just beer,” but on the other hand, beer is so won-

derfully intertwined with history, tradition, culture and, most of all, the lives of *people*, that it deserves consideration as more than just a standardized commodity. Add to this our own pride as brewers and respect as beer enthusiasts and you have many reasons to ask how, what, where and why.

A discussion of beer styles eloquently captures the essence of beer and brewing. In this 1991 Special Issue of *zymurgy*, our focus is on helping define, in terms of brewing formulations and process, some of the most popular beer styles being brewed and enjoyed in North America. They are presented here as an introduction and as guidelines to the traditional styles brewed throughout the world. References are provided for more detailed information and opinion.

With this issue of *zymurgy* it is our intent to provide the brewing community with a common language so we can communicate better among ourselves and to others our joy of brewing and the respect beer deserves in our lives.

Finally, the staff of *zymurgy* would like to thank each of the writers who have contributed time and expertise to make this 1991 Special Issue the valuable brewer's tool we are sure it will be. 



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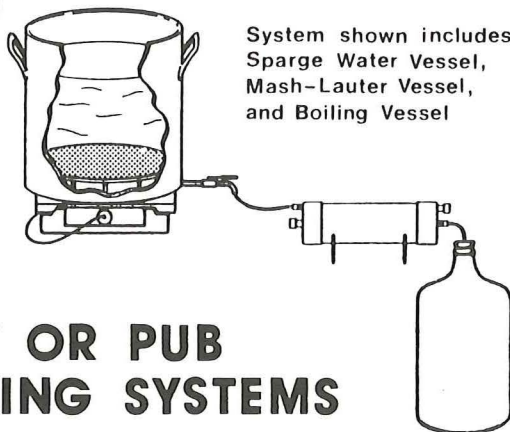
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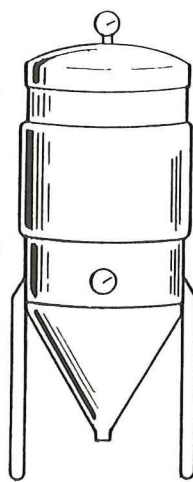
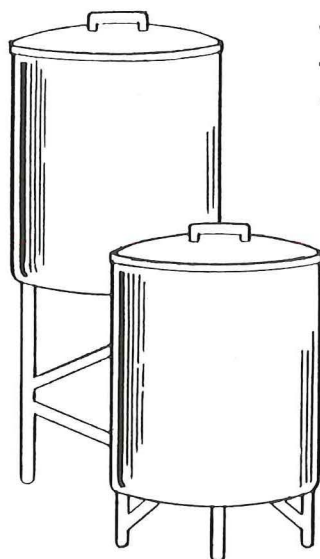


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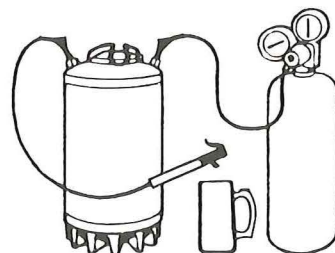
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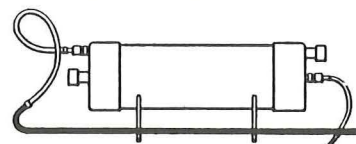
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The Moods of Beer



o one goes into a restaurant and orders: "A plate of food, please." Or even: "A glass of wine." How odd, then, that people propose: "A beer."

I am occasionally criticized for so often using food and, more especially, wine comparisons to make points about beer. Is this, at best, snobbism? Or, at worst, an acceptance that wine sets the rules?

Frankly, I don't give a damphier. Let us deal with the world as it is and not as we believe it could be. In the real world even the drinker who always orders a generic Chablis knows that there is more to the universe of wine. The Chablis drinker has seen wine that is red, and vaguely heard of names like Cabernet and Zinfandel, but knows these products are legitimate wines, not aberrations.

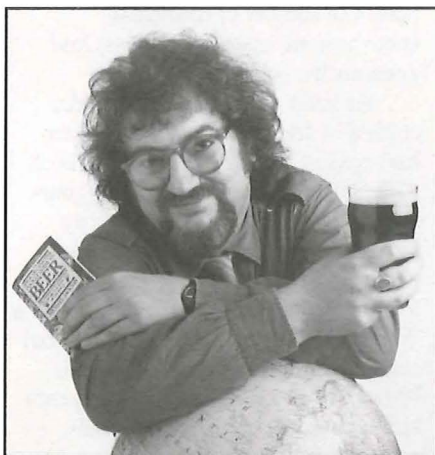
The Chablis drinker often is a woman. If she has a male partner, the odds are he drinks but one style of beer. He is not aware of this, but his tasting experience rarely extends beyond an extremely distant derivation of a Pilsener-style lager.

To the majority of beer drinkers, the choice still is between a price brand, a premium and an import; or a light, a dry and a regular brand.

Those of us with a passion for beer love it in all its moods. We know that they extend far beyond these tiny increments of difference within the range of American-international Pilsener-derived products.

If the developed world truly is democratic, free and consumer led, then we should be able to have anything we want and can afford, so long as it is safe (and the health benefits of moderate drinking are well known). The snag is that the requirements of the majority can drown out the preferences of a minority. To work properly, the primacy of the consumer has to be pluralist.

That is why I have from the beginning sought in my writings about beer to highlight its diversity. The word itself is meaningless; diversity can be demonstrated only by the showcasing of examples of different styles. I try always to explain the different merits of each and to suggest a mood or moment for one or another. A wheat beer on hot days, an English ale while socializing with friends, a Vienna-style lager with spicy foods, a barley wine



with a book at bedtime and so on.

Even the ancient Egyptians made beers of more than one type. Lager beer was mentioned in the 1400s, though Pilsener was not a style until the 1800s. The Belgian town of Lembeek had a brewers' guild in the 1400s, though no one is sure when (or if) its name began to identify a type of beer as lambic. Flemish beer (aromatized with hops) and English ale (then without the magic cone) were distinguished as separate types in the 1400s and 1500s. India pale ale emerged as a style in the early and mid-1800s.

These are, of course, just a handful of styles. Every type of beer made anywhere in the developed world was also made in the United States in the 1800s, but how long could this last? From the industrial revolution in Europe and the birth of mass marketing in the United States, the world was becoming a global village.

As early as 1876, the birth of Budweiser as a branded product led the way toward a single universal type of beer. In the United States that movement was dramatically hastened by Prohibition. It was further accelerated by two world wars and the subsequent desire to minimize national differences.

Not only did nations wish to forget their differences in the late 1940s and 1950s; there also was a blurring of ethnicities. My immigrant grandmother cooked Russian-Jewish food, but in the post-war period my father wanted to assimilate. A generation later, I had enough confidence in my Britishness to restore bagels and borscht to my own kitchen. Today, Italian-Americans may not all eat soul food, but they find other ways to show they value their culture. Not only ethnic minorities but also nations began in the late 1960s and early 1970s to rediscover their heritage.

It was in this spirit that in 1971 the Campaign for Real Ale set out to defend a vital area of British culture. There were other social currents in its favor. Dr. E.F. Schumacher had identified one with his book *Small Is Beautiful*. The whole food movement was perhaps another. The growth of travel was a further influence. The British traveled to France and began to seek books telling them how to drink wine. Vacations, study or military service in Europe sent Americans back to the United States with a desire to homebrew more distinctive beers.

At that time books about beer did not emphasize its

MICHAEL JACKSON

diversity. Most were first and foremost about the culture and history of beer, with a passing mention of different types and typical brands.

I am not sure that I was the first writer to use the term "beer style" but, on reflection, I think I may have

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been. I was certainly the first to make this a central theme of my writing, in the original *World Guide to Beer*, published in 1977. (Was it really that long ago?) Soon afterwards, I discovered that my definitions of beer styles were being used in at least one academic institute dealing with brewing science. Since then, the notion of beer styles has been the subject of countless speeches, papers and articles, and even entire books.

At least one of the styles I discussed in the *World Guide To Beer* had ceased to exist. On the basis of its mention in the book, it was commercially revived. I am thinking here of oatmeal stout, though the argument could also be made of Vienna-style lager. When I wrote the *World Guide*, smoked beers were not made outside Franconia, nor fruit brews beyond Belgium. In the years since, the number of dark lagers, porters and ales has greatly increased.

That book came at the right time for the legislation of homebrewing in the United States, and provided a useful support to the work of Dave Line, Fred Eckhardt, Greg Noonan, Charlie Papazian and others.


The diversity of beer was rediscovered by homebrewers, brew-

pubs and micros. When the *World Guide* was published, New Albion already was making its ale. The only established brewer in the United States with an active and genuine sense of style was Anchor, which had already extended its range to some early batches of barley wine.

In 1980, I was invited to conduct a style-based tasting at a restaurant in San Francisco. In 1981, and for the rest of that decade, I found myself speaking at the annual conference of the AHA. From the beginning of these discussions, there has always been some debate about the wisdom of trying to define styles. All nations value freedom, but the United States was born out of that urge, and mistrusts regulation more than most. Yet, if "ale" or "bock," for example, can mean whatever the individual brewer chooses, the consumer will retire in bewilderment.

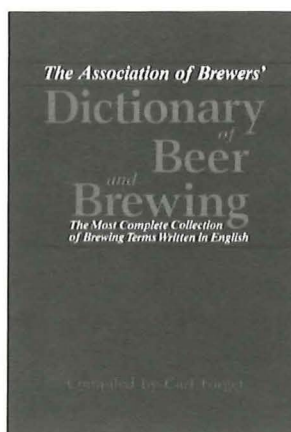
The British also are very resistant to regulations. In a branch of a major British supermarket chain the other day, I saw a product that bore no resemblance to the real thing described as a bagel. It had a soft crust, had clearly not been made by boiling and baking and was presliced. As a keen bagel fancier, I rejected it, but a neophyte could have tried it and been forever put off the world's greatest breakfast bread, and worse still, could have enjoyed it. If enough people enjoy fake bagels, bakers will stop making the real thing. At the very least this product should have been labeled as a roll-with-a-hole. We Brits do have some rules. A product labeled Scotch whiskey, for example, cannot be made in England. Yet Scotch ale can.

There is a lot to be said for continuing these discussions. It never hurt anyone to maintain some standards. Equally, I would not wish to see parameters so narrow that beers within a particular style are all boringly similar. That criticism could, for example, be applied to many German beers.

The French do a terrific job of protecting the integrity and variety of some styles of wine, notably those of Bordeaux and Champagne. If their appellations were not so well protected, I wonder whether we would value the styles as much as we do? 

What the Heck Is a Dog's Nose?

It's a mixed drink of hot beer laced with gin and flavored with sugar. Any other questions? Just consult the *Dictionary of Beer and Brewing*, by Carl Forget. Nowhere else is there such a comprehensive list of beer and brewing terminology—it's for those who really want to know their stuff.



\$19.95 (\$15.95 AHA Members), plus \$3.00 domestic P&H. 6 x 9, 176 pp. 1,929 definitions. Published by Brewers Publications, PO Box 1679, Boulder, CO 80306, (303) 447-0816, FAX (303) 447-2825.

How Can the Beer Judge Certification Program Benefit You?

If you've ever watched a round of judging at a homebrew competition, then you've observed this familiar scene: The judges take a beer in hand and look deeply into it. They take a slow, thoughtful smell. Perhaps they swirl it. Then they take a sip, letting the flavor linger on their palates. Throughout this process, they make incessant notes on the scoring sheets.

Who are these judges, and how do they become recognized experts?

If you are at a competition sanctioned by the American Homebrewers Association or the Home Wine & Beer Trade Association, the judge has earned his or her credentials by completing the requirements of the Beer Judge Certification Program. Begun in 1985 as a joint effort of the AHA and the HWBTA, the program was created to emphasize brewing education and establish a system that fosters constructive, tactful comments, encouragement of the brewer, consistency in scoring and continuity in judging, with the overall goal of improving the quality of homebrew. "The judge program recognizes and certifies beer tasters who can appreciate and describe the quality brews being produced at home in America today," says Pat Baker, co-director and co-founder of the BJCP.

"Before the BJCP was established, there was a lot of inconsistency in judging approaches," says Jim Homer, BJCP co-director. "And some of the judges gave harsh criticism that was not constructive or instructional to brewers. The BJCP encourages judges to make their comments tactful, offering suggestions to help the homebrewer improve the final product." As competitions continued to grow, the need for an established, consistent numerical score became more and more apparent. "And we believe the program is achieving its goals," says Homer.

The number of participants in the BJCP grows annually. Today, more than 680 people are in the program. Because of the wide variation in skill and knowledge of the candidates, the BJCP recognizes five levels of judging mastery: Recognized Judge, Certified Judge, National Judge, Master Judge and Honorary Master Judge. The individual's skill level is determined by both experience points earned through sanctioned competitions and the BJCP exam score.

The requirements for category inclusion are as follows:
Recognized Judge: 60 percent on the exam, no experience points necessary.

Certified Judge: 60 percent on the exam, five experience points, 2.5 of which are judging points.

National Judge: 80 percent on the exam, 20 experience points, 10 of which are judging points.

Master Judge: 90 percent on the exam, 40 experience points, 20 of which are judging points.

Honorary Master Judge:

Temporary designation to recognize a person whose judging skills are widely known.

Experience Points

A candidate can earn experience points by judging in AHA or HWBTA sanctioned competitions or by being involved in the organization of an event. Points are awarded to organizers, assistant organizers, best of show judges, judges and stewards, in amounts relating to the size, scope and responsibility of the event. Competitions are categorized in three groups: national, large regional and small regional.

National competitions include the annual AHA and HWBTA competitions. Large regional refers to sanctioned, open competitions of 75 entries or more. Small regional refers to sanctioned, open competitions attracting less than 75 entries. Thus a best-of-show judge at a national competition will receive five experience points for the session, an organizer of an event of 150 entries will receive five points and an organizer of 350-entry event will earn seven points.

The BJCP Exam

The BJCP three-hour exam is designed to test a candidate's full knowledge of beer, brewing and competitions. The exam tests all levels of beer knowledge and is divided into two parts: an essay section (worth 70 percent of the final score) and a taste section (worth 30 percent). The essay section determines an individual's overall knowledge of beer. Questions cover the technical aspects of homebrewing, including ingredients, the brewing process and potential problems, beer styles and their brewing histories, homebrew competitions and the BJCP itself.

The taste section lets candidates try their hand at judging. Candidates judge up to four beers as if they were judging an actual event, using official scoring sheets. They may be required to review all aspects of the beer and, in some cases, identify beer style. This section tests an individual's beer knowledge and ability to give accurate analysis and tactful, instructional comments to the brewer.

Once judges meet the requirements and are certified by the BJCP Committee, they receive a certificate of achievement and a wallet-size card, each showing the level of recognition and date of award.

The BJCP is headquartered in the AHA offices in Boulder, Colo. For more information on the BJCP program, please contact BJCP Administrator Karen Barela at the American Homebrewers Association, PO Box 1679, Boulder, CO 80306-1679, (303) 447-0816.



AHA STAFF

A Treasury of Beer Styles

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Barley Wine

DON HOAG

Barley wine is a classic English style of very strong ale that has become popular with several small American breweries. Through their

efforts, many Americans who appreciate quality beer have become familiar with and fond of the style. Barley wines feature a huge body and pronounced malty flavor and aroma, and should have a "warm" alcoholic taste due to their strength. Because of their high malt content and the custom of their fans to allow the beer to mellow and mature for a long time in the bottle (in some

cases years), the hop character may not be very evident and may be more pronounced in the aroma than the palate.

In order to achieve the desired original gravity, large amounts of malt are required. The use of only pale malt will produce a deep golden color, although dark malts or sugars may be used, resulting in a darker beer. Extract brewers will want to experiment with products in order to determine fermentability and the amount needed to achieve the desired original gravity range, noted below. Grain brewers have several options to reach the original gravity, including the use of extra malt, use of first runnings only or addition of extract to a "regular" size mash. All brewers may use an extended boil of the entire wort to increase the original gravity, although the effects of this on hopping and beer

color should be considered. Generous amounts of classic English hops such as Fuggles or Kent Goldings are appropriate. Higher alpha varieties

such as Chinook offer a wonderful alternative for bittering while traditional Fuggles or Goldings are most appropriate for aroma.

A recent investigation of several American barley wines found no commercial brewers using Champagne yeast for fermentation, although some may be out there. Breweries instead tend to use ale yeasts and techniques

easily adaptable to homebrewing: pitching of yeasts known to be vigorous, pitching of extra amounts of yeast or repitching before fermentation is complete, thorough oxygenation and physical agitation of the yeast bed to keep it "roused" and active.

Commercial Examples

Anchor Old Foghorn Barleywine Style Ale
BridgePort Old Knucklehead
Eldridge Pope Thomas Hardy Ale
Sierra Nevada Bigfoot Barleywine Style Ale
Young's Old Nick Barleywine

Barley Wine

OG: 1.090–1.120 (22.5–30.0 °P)
Alcohol (by volume): 8.4–12 %
IBUs: 50–100
Color (SRM): 14–22



Labels in this section designed by homebrewers (see credits).

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Belgium-Style Specialty

MICHAEL JACKSON, JEAN-XAVIER GUINARD

Flanders Brown

Historically, Flanders is a nation. Culturally, it embraces parts of northern France, a good half of Belgium and the southern fringes of the Netherlands. Within its modern political boundaries, it is one of the two principal states that make up Belgium.

Flanders has a very rich brewing tradition. Among its four-and-a-half provinces (rather larger than American counties), two, East and West Flanders, are especially associated with very dark, reddish-brown top-fermenting brews. These are very complex in character and are particularly noted for their intentional sourness. This derives from the use of multistrain yeasts and from long periods of maturation.

West Flanders' capital is Bruges, but the province's "sour" beer is most readily associated with the Rodenbach brewery in Roeselare, an inland port on a major canal (the town also is known by its French name, Rouliers). The beers made by Rodenbach have a distinctly burgundy-red tinge and an assertive sourness. Their three products are all based on the same grist.

A proportion of the pale malt is from summer barley. There are then further proportions from two-row and six-row winter barleys. (Some Belgian brewers of top-fermenting styles feel that six-row adds to mouthfeel.) Finally, there is also a reddish, crystal-type malt of the style sometimes known in continental Europe as "Vienna;" this is clearly an influence on the color of the beer.

These malts comprise at least 80 percent of the grist and the rest is corn grits. A double decoction mash is

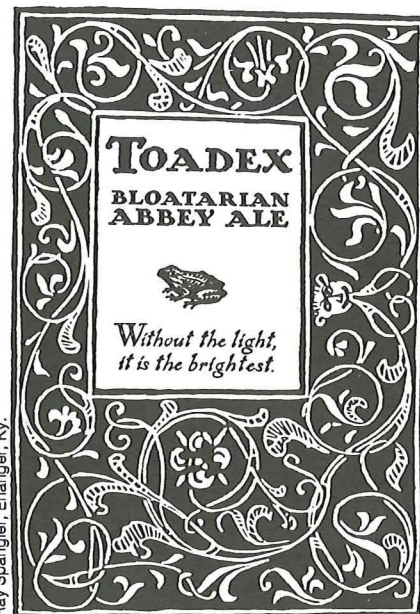
used. The hops are mainly Brewers' Gold, with some Kent Goldings. Like all tart beers, the Rodenbach brews are not intended to be bitter, but perhaps some spicy hop character is sought.

The first time I visited the brewery I was told the yeast was a symbiosis of three strains. By my next visit, five strains had been identified. Since then, work at the University of Leuven (in French, Louvain) has determined that there are 20.

The classic Rodenbach Grand Cru starts with a gravity of 1.052. After primary fermentation, there is a secondary in metal tanks over five or six weeks. The beer is then matured for not less than 18 months, and sometimes well over two years, in uncoated wooden tuns, the smallest containing 120 hectoliters and the largest five times that size. During this time, evaporation, extraction of compounds from the wood and lactic and acetic activity all seem to play a part in creating one of the world's most distinctive beers.

The regular Rodenbach is a blend of Grand Cru and a larger proportion of a 1.045 to 1.046 version that has not been oak-aged. A version called Rodenbach Alexander is Grand Cru sweetened with cherry essence. The beers are centrifuged and pasteurized. Rodenbach has an alcohol content of 3.7 percent by weight, 4.6 percent by volume. The Grand Cru and Alexander have 4.1 percent by weight and 5.2 percent by volume.

The capital of East Flanders is Ghent, but this province's darker (less red than brown) and less assertively sour style is principally brewed around the old tapestry-making town of



Oudenaarde. Its most famous brewery is Liefmans, for many years run by Madame Rose Blancquaert.

When I first visited this brewery, Madame Rose was using six malts, four varieties of hops and fermenting in copper vessels. She, too, blended young and old beers. The old was matured in metal tanks for eight to 10 months, and the blended beer had a further six to 12 months bottle conditioning in the brewery's cellars. The end product has a distinctively sweet-and-sour, sherry character.

—Michael Jackson

Commercial Examples

Rodenbach Gran Cru
Bios Copper Ale
Liefman's Goudenband

Flanders Brown

OG: 1.045–1.056 (11–14 °P)
Alcohol (by volume): 4.6–5.2%
IBUs: 15–25
Color (SRM): 12–18

White

In Belgium, a "white" wheat brew is known as a witbier (in Flemish), or a biere blanche (in French). Historically, this type of beer is associated with the region to the east of Brussels. This region, the northeastern side of the linguistically divided province of Brabant, has several towns and villages that have in the past made wheat beers.

The tradition was dying when

Pierre Celis revived it in 1966. Celis had been a friend and neighbor of the last brewer in the wheat beer town of Hoegaarden. Based on his knowledge of the local style, Celis produced in Hoegaarden a white beer that became immensely popular among young people in Belgium. Unable to fund his own expansion, Celis eventually sold the brewery to Interbrew, the producers of Stella Artois. The brewery still is operating on its original Hoegaarden site. It is constantly being expanded, but in a sympathetic manner.

I consider the original Hoegaarden White still to be a classic, though it has undergone some changes over the years. I do not feel that it is challenged by any of its many, more recent competitors in Belgium, though I have enjoyed several of them. The only one to have been widely available in the United States has been the apple-ish Dentergems (formerly labeled as Wittekop). I shall be interested to taste the Waterloo White that Celis plans to make in Austin, Texas.

Hoegaarden is produced with softened water. It has a conventional gravity of 1.044 to 1.045, with a grist comprising 45 percent unmalted

wheat. Originally there was 5 percent oats, but they have been dropped from the grist, which seems a shame. I believe they imparted a slight oiliness that contributed to the character of the beer. The remainder of the grist is malted barley.

The beer is hopped to a level of about 20 IBU with Kentish and Styrian varieties and spiced with coriander seeds, Curaçao orange peels (dried and milled) and a third "secret" spice (cumin seeds, perhaps?). The use of spices is typical in Belgian brewing. The same spices are used by Hoegaarden's competitors, and this is a distinguishing feature of the style.

The yeast used in primary fermentation is a strain that imparts an aromatic character. New yeast is used for every brew. The product originally had some weeks' tank conditioning in the lower 50 degrees F (10 degrees C), but this period has now been shortened. It is then given a dosage of a different yeast for bottle conditioning. This, too, is an aromatic yeast, and one that stays in suspension. Bottle conditioning lasts for eight to 10 days at 75 degrees F (24 degrees C). Once again, this period

originally was longer.

Although the brew is centrifuged after the boil and again before being re-yeasted, it is not filtered or pasteurized. It has a very white head, the color of which seems to be reflected in the beer itself. The beer is cloudy, a very pale yellow with a greenish tinge. Fresh on draft, it is sharply refreshing. In the bottle after a few weeks' storage, it becomes rounder and softer with hints of orange and honey.

—Michael Jackson

Commercial Examples

Hoegaarden Witbier

White Beers

OG: 1.044–1.050 (11–12.5 °P)

Alcohol (by volume): 4.5–5.2%

IBUs: 15–25

Color (SRM): 2–4

Trappists

Perhaps because they are the strictest of orders, the Trappists have a more cohesive brewing tradition than any other monks. In theory, the appellation "Trappist" indicated simply that a product has been made by

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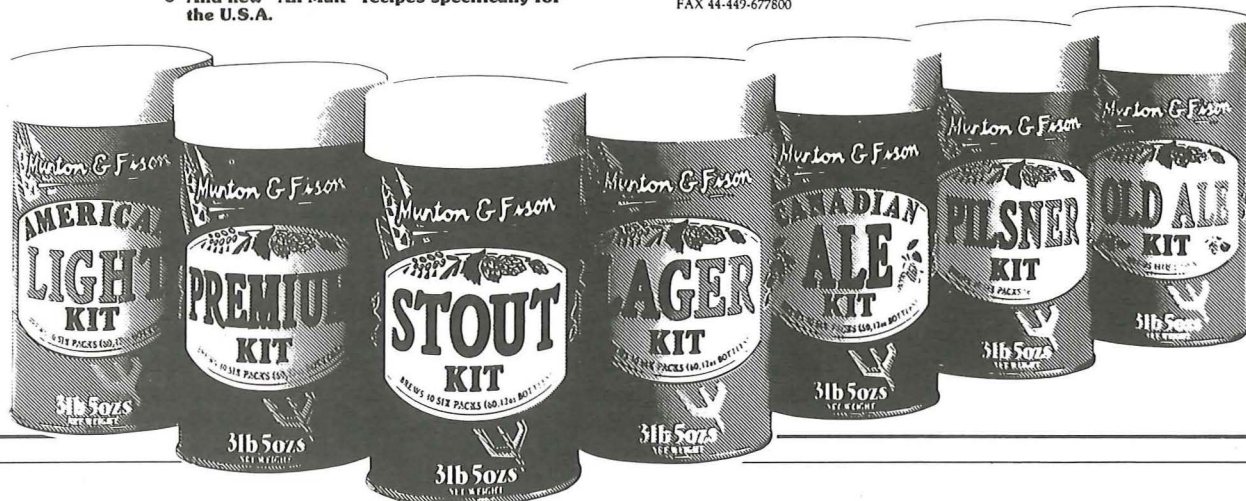
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monks of that order. They could make beer in any style and call it Trappist. In practice, the five Trappist abbeys of Belgium and the sixth across the Dutch border make beers that, though varying in character, do have several common features. If the brewery is not in a Trappist abbey, that appellation cannot be used. These beers are simply identified as abbey brews.

The features they all have in common are high gravities, ranging from the 1.050s to the 1.080s (often boosted by candy sugar in the kettle), top fermentation (at high temperatures, ranging from the mid 60s to upper 80s F (18 to 38 C), sometimes very distinctive yeasts, bottle conditioned at the brewery, some for a matter of days, others for a couple of months. The strongest examples will continue to develop with age.

Some Trappist abbeys make a "single" beer for the monks to enjoy with their meals, a stronger "double" and an extra-potent "trippel." The "single" is never identified as such, and is not generally available outside the abbey. It has become the convention that a "dubbel" (to use the Flemish or Dutch spelling) is a dark ale, while the golden Trippel of Westmalle has inspired many imitators. The term "trippel" is most often identified with this type of beer, though it is also used by some secular breweries working in quite different styles.

High fermentation temperatures are amenable for any "off" characteristics. Homebrewers' choices of style will be governed by the yeast they can extract, so it is easiest to discuss the Trappist beers by brewery.

Orval has an original gravity in the range of 1.054 to 1.056. The brewery uses three malts, produced to its specification, with a 34.21 SRM (90 EBC) crystal making the most significant contribution to color. German Hallertauer and (in larger quantities) Kent Goldings are used. The brewery uses its own single-cell yeast in primary and secondary fermentations. The secondary-cum-maturation lasts for five to seven weeks at 60 degrees F (15.5 degrees C). At an early stage of this conditioning the beer is dry hopped with the same varieties.

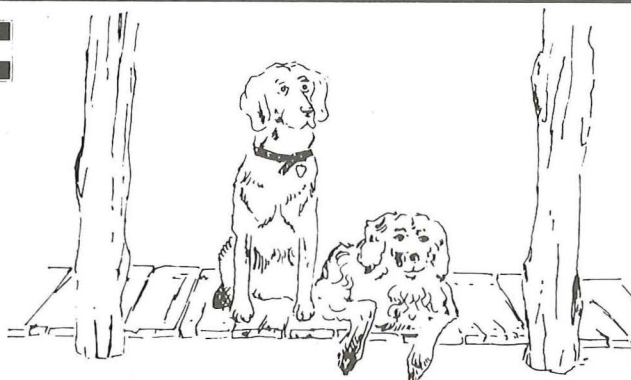
At the end of this period, the beer is centrifuged. It is then primed and bottled with a dosage of four or five

bottom-fermenting cultures. It is then held for as long as two months at warm temperatures before the bottles are released to the market. The finished product has a color of 9.5 SRM (243 BC) and hopping rate of 28 IBU. Alcohol is around 4.5 percent by weight. The beer is very hoppy and dry, with some sour notes.

Chimay's Capsule Blanche (white top) is another dry, hoppy Trappist beer, though less bitter and with a cleaner, crisper palate. The brewery's

red and blue are much richer and sweeter, with notes of black currant and perhaps nutmeg. The stronger blue also gains port characteristics with age.

Chimay lays great emphasis on its water, which contains no calcium and is naturally acidic. The brewery is shy about the specifics of its grist, but I believe it uses two malts plus white candy sugar in the kettle. The Belgians make some very aromatic malts in the range of 17.34–21.09 SRM



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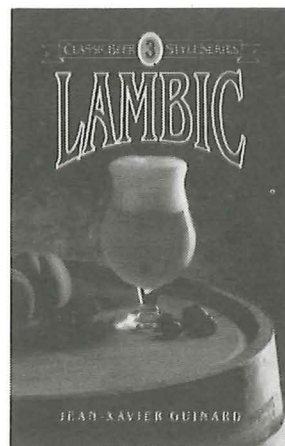
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(45–55 EBC) and a wide range of caramel malts ranging from 11.71–187.96 SRM (30–500 EBC). Candy sugar, similar to the large-crystal type used in coffee, contributes flavor as well as fermentability.

German hops, and—I believe—some Yakima are used. These are not intended to be hoppy beers in either bitterness or aroma. As I understand it the yeast is a very distinctive culture and is used both in primary fermentation (at high temperatures) and bottle conditioning. The yeast seems to me the most important element of the characteristic Chimay aroma and palate.

Westmalle's dark Dubbel has a gravity of around 1.064, and emerges with an alcohol content of 6.6 percent by volume. It has a malty, vanilla palate. The famous Trippel has a gravity of 1.080, emerging with 7.7 percent alcohol by volume. It is brewed from hard water with entirely Pilsener-type malt, all made from summer barley. White candy sugar is added to the kettle. Styrian Goldings, Tettnangers and Saaz are the key hop varieties now, but there are others, too. All are aroma varieties. Once again, the brewer is shy of telling all.

The Trippel is fermented at rela-

tively low temperatures, then has five weeks secondary-cum-maturation, at 45 to 50 degrees F (7 to 10 degrees C). It is then rough-filtered for trub and yeast, primed, given a dosage and bottle conditioned for three weeks at 70 degrees F (21 degrees C). The finished beer has a very dense, white head and a sunny color. Its bouquet and palate offer a wonderfully complex combination of delicate, aromatic hop characteristics and lightly citric fruitiness.

—Michael Jackson

Commercial Examples

Chimay Red
Orval Trappist Ale
St. Sixtus Trappist Ale
Chimay Grande Reserve

House Brew and Double Malt
OG: 1.060–1.070 (15–16°P)
Alcohol (by volume): 6–7.5%
IBUs: 18–23
Color (SRM): 10–25

Triple Malt
OG: 1.070–1.090 (22.5–25°P)
Alcohol (by volume): 7–10%
IBUs: 15–25
Color (SRM): 14–25

Saison

The firmest imperative for seasonal beers was the impossibility of brewing in summer until the development of refrigeration. Perhaps God meant it to be that way. The farmer was busy in summer, tending and harvesting his crops. Once the barley was safely in, he could turn to malting and brewing. Then, in March, he could make a big brew to lay down as a provision for the summer months.

In Belgium, where the farmer-brewer survived best, these beers are known simply as "saisons." The tradition of brewing them survives only in the French-speaking half of the country, especially in the province of Hainaut, in its western stretch.

The method used in making saisons was regarded a distinctly Belgian technique by brewing scientists in the late 1800s and early 1900s. The beer had to be sturdy enough to last for months, but not too high in alcohol to be a summer and harvest quencher. The method, probably arrived at empirically, was to use high mashing temperatures, producing a substantial degree of unfermentable sugars.

Saisons are often made entirely from pale malts, though even the lightest in color have an orange cast. Sometimes Munich or varieties of aromatic crystal are used. Brewers often make a "blonde" and an amber saison. Some have gravities of around 1.048, but 1.055-plus seems to me more traditional, and there are strong versions as high as the 1.080s. British hops, notably Kent Goldings, are used as well as Belgian varieties. All of these beers are top fermenting and in most cases the yeast has undoubtedly habituated itself to its surroundings (none of the breweries is remotely modern). Saisons have a week or two, or even some months, of warm conditioning in metal tanks. They are primed and re-yeasted in the bottle. Traditionally, they were laid down for the summer in the bottle. Most still are presented in 75 cl wine bottles.

Saisons traditionally have a dense head, lively refreshing carbonation and crispness (some are made with quite hard water), a fruity accent, often the slightly tart, citric notes. They are sometimes spiced, and usually well-hopped. Traditionally they often

were dry hopped.

Six or seven breweries still produce saisons, and some have several versions. Saisons Silly and Régál can sometimes be found in the United States. One of the most interesting examples is Saison de Pipaix, made at Brasserie à Vapeur. This brewery was on the point of closure when it was rescued by two young school teachers. Their saison contains no fewer than six spices, including black pepper and a medicinal lichen.

Saisons are not made in the Flemish-speaking part of the country, though the Martens brewery of Limburg has a product with the same allusion. Sezoens is a protected trademark. The beer is a bright (filtered), golden top-fermented brew, dry hopped twice during two to three months' cold lagering. It is a highly distinctive brew, and now has an amber-red counterpart called Sezoens Quattro (the name is intended to indicate the four seasons).

—Jean-Xavier Guinard

Commercial Examples

Saison DuPont
Saison Silly

Saison

OG: 1.044–1.080 (13–20 °P)
Alcohol (by volume): 4–7.5%
IBUs: 20–30
Color (SRM): 3.5–12

Lambic

Lambic and its derivatives (gueuze, faro, framboise and kriek) are the pride of Belgium. Lambic is the oldest beer style in the Western world. It is made by spontaneous fermentation of a wort produced from 40 percent unmalted wheat and 60 percent barley malt, boiled with aged hops that have lost their bittering properties. Today there are about 20 lambic breweries, all located around the city of Brussels because the proper microbial flora is found only in that area. The hot wort is cooled and inoculated overnight with the local flora in a shallow cooling tun. The wort is then pumped into wooden casks where it ferments up to two years to make lambic. The fermentation involves a sequence of yeasts (*Kloeckera*, *Saccharomyces*, *Brettanomyces*) and bac-

teria (enterics, *Pediococcus*). Lambics of different ages are blended and bottled to make gueuze, or refermented with fruit in casks and bottled to make framboise, kriek, etc.

Lambic is golden yellow to light amber, almost flat, very sour (lactic sourness) and acetic, with fruity notes and a strong *Brettanomyces* character (horsy). Alcohol is 4 to 6 percent by volume, color 4 to 8 SRM and bitterness 11–21 IBU. Mashing follows a temperature profile achieved by boiling the wheat (soft variety) with a fraction of the malt (pale) before mixing it into the main mash. Sparge with a lot of water at a high temperature. Boil for one to three hours with old hops (20 to 25 ounces per bbl beer). The original gravity of the wort should be 1.048 to 1.054 (11.8 to 13.4 degrees Plato). Ferment at 64 degrees F (13 to 15.5 degrees C).

Fruit lambics (framboise, kriek, pêché, cassis, muscat) are produced by macerating whole fruits (50 pounds per bbl) with a blend of young lambics in wood (or in glass), fermenting at 65 degrees F (18.5 degrees C) and bottling after six months with a dose of

young lambic for bottle conditioning.

—Jean-Xavier Guinard

Faro

OG: 1.044–1.056 (11–14 °P)
Alcohol (by volume): 5–6%
IBUs: 11–23
Color (SRM): 6–15

Commercial Examples

Brasserie Cantillon Faro

Gueuze

OG: 1.044–1.056 (11–14 °P)
Alcohol: 5–6%
IBUs: 11–23
Color (SRM): 6–13

Commercial Examples

Timmerman's Gueuze

Fruit (Framboise, Kriek, Pêché...)

OG: 1.040–1.072 (10–17.5 °P)
Alcohol (by volume): 5–7%
IBUs: 15–21
Color (SRM): N/A

Commercial Examples

Brasserie Cantillon Kriek
Brasserie Cantillon Framboise
Lindeman's Framboise
Lindeman's Kriek
Lindeman's Peche
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Brown Ale

DARRYL RICHMAN

English Mild

A favorite in the west of England and the coal fields of Wales, English mild is intended for quantity drinking after long hours of heavy work. However, quantity doesn't mitigate quality, and milds present a variety of flavors and balances different from their bigger brothers the brown ales, or their cousins in the pale ale family, the bitters. Even so, the working-class image of this beer and its short cask life are conspiring to reduce the number of brands available. With its home rather far away from the hop fields of Kent, these beers rely on malt character for their interest, in spite of the low original gravity associated with this style.

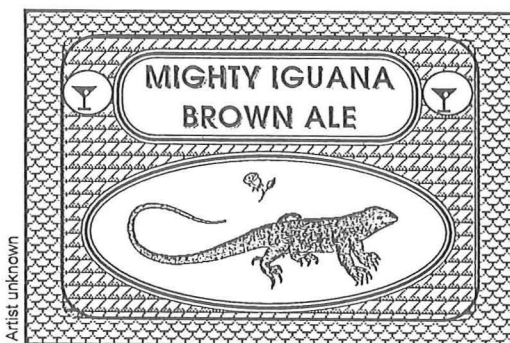
The mild style forms the low end of the brown ale spectrum, comparable to bitter in the pale ale range. As such a low-gravity beer, it is not bottled and usually enjoyed close to the brewery. There are no examples of it imported to the U.S. Grant's (Yakima, Wash.) Celtic Ale is the nearest American beer to the style, but it is too highly carbonated and hoppy for a true English mild.

Milds are of low hop character, often not even comprising a primary constituent in the flavor. Hop aroma likewise is absent or subdued. Whatever hop bitterness is present should come from English hops. A mild of distinction requires quality Goldings or Fuggles for bitterness. You can add aromatics for interest, but only in small quantities—at most 1/4 ounce at the end of the boil.

Mild beer is darker than bitter, starting at deep copper and ranging to dark brown. The flavor profile is as malty as a low-gravity wort will allow and can have a slightly sweet to dry character. A highly dextrinous mash or extract that provides a lot of unfermentable malt sugars is required for the body and mouthfeel. Mild malt is sometimes available and is some-

what darker than the English pale malt that should be used if the mild malt cannot be found.

Appropriate color is achieved with a balance of caramel, chocolate and black patent malts. The caramel provides the sweetness while burnt malts are necessary for their drying qualities—a burden carried by hops in other



styles. Moderately hard water with some carbonate content is useful for mashing with the darker grain. Milds share the fruity-estery qualities of bitters that arise from the warmer fermentation of ales. Slight diacetyl (buttery) notes are not out of bounds either. A low to medium attenuating yeast strain can help to conserve body and sweetness in the finish. The carbonation should be very low, because this style is traditionally only available on draft.

Commercial Examples

A commercial example is not readily available in the United States.

English Mild

OG: 1.032–1.036 (8–9 °P)

Alcohol (by volume): 2.5–3.6%

IBUs: 14–20

Color (SRM): 17–34

English Brown Ales

Brown ales contrast well with their cousins, the pale ales. Browns are malty while the pales are hoppy

and, as their names note, one is darker and the other lighter. This contrast can be continued into their different brewing heritages.

Brown ales traditionally were made where the water was less well suited for pale ales. Whereas Burton became the center for pale ales because of its permanently hard (high gypsum) water, the browns come from diverse areas where the water is more temporarily hard (chalky).

Because this high carbonate content will tend to add harsh notes to the hop bitterness, brown ales traditionally are lightly hopped. This carries over into the flavor and aroma as well, where little evidence will be seen of late hopping. What hops are present are traditional English varieties like Goldings and Fuggles.

Although brown ales usually are a step up in gravity from the milds, they still do not reach the higher gravities of India pale ales. At higher gravities, without the balance of the hops, such a beer would become cloyingly sweet. Within the style there are gradations in maltiness, ranging from dry to sweet. The former tend to be from higher original gravities, perhaps in the low or mid 40s, but mashed at lower temperatures, around 150 degrees F (65.5 degrees C).

The sweeter varieties are often made from lower starting gravities. To achieve the sweeter finish, higher mash temperatures, about 150 degrees F (65.5 degrees C) and a higher percentage of caramel malt are needed. The less sweet beers tend to be lighter in color as well.

Brown ales evidence a variety of flavor and aroma nuances. Some of these can be contributed by the addition of small quantities of brown sugar or molasses to the boil. Other characteristics include a noticeable fruitiness from the yeast, and may include some notes of butter, toffee and even a bit of vanilla.

As they are relatively low-gravity beers, they are quick maturing and may only need a week of fermentation to drop bright. Low carbonation is the rule; use only a 1/2 cup (or even 1/3) of dextrose for priming.

Commercial Examples

Samuel Smith's Nut Brown Ale
Newcastle Brown Ale
CooperSmith's Not Brown Ale
Hood River Full Sail Brown Ale

English Brown Ales

OG: 1.040–1.050 (10–12.5 °P)
Alcohol (by volume): 4–5.5%
IBUs: 15–25
Color (SRM): 15–22

American Brown Ale

As the North American microbrewery movement has done with traditional British pale ale, it is now changing the brown ale category to meet American tastes and materials. While English brown ales are malty and sweet, low in hops and made with highly kilned malts, the American browns have a balance toward a drier palate with noticeable to significant quantities of hops and much of their color derived from dark malts.

This balance reflects the microbrewery customers' tastes. So long deprived of hop aroma and bitterness and malt flavors by the megabreweries, their reaction has been headlong

in the other direction. In this category, the basic parameters remain the same as the original English style—excepting the hopping rate—but the taste profile is strikingly different. American brown has a dry character, its malty nature balanced off the dark malt and hop bitterness and aroma. Although some estery and fruity notes are present, they too are more subdued, and diacetyl is not a companion to this style.

The hops used are traditional North American varieties. Cascade (and its descendant, Centennial) is a particular favorite. The boiling hops may include some of the high-alpha types such as Galena, Eroica or Chinook. Flavor and aromatic hop additions, at 20 and 5 minutes before the end of the boil, will add that distinctly American character.

A malty base is required to keep the appropriate flavor profile of this beer, and a dextrinous mash at 154 to 156 degrees F (67 to 68 degrees C) is needed for this. When brewing with extracts, some dextrin malt or dextrin powder can help. The gravity and alcohol content reflect American tastes, being somewhat higher than the English style. The use of 5 to 10 percent

caramel malt and up to 5 percent chocolate malt adds the color this style requires. The chocolate malt will add interest and a drying quality to the finished product.

As noted above, this beer is typically less marked by the yeast character than an English brown ale. The use of a high quality ale yeast is required. Fermentation temperatures should be in the 60s, and, with a starting gravity in the high 40s or low 50s, a secondary fermentation is recommended. This is a beer that should finish clear and bright. As with most American styles, this one has a higher carbonation rate than its forebears, which can be provided by priming with 3/4 cup dextrose.

Commercial Examples

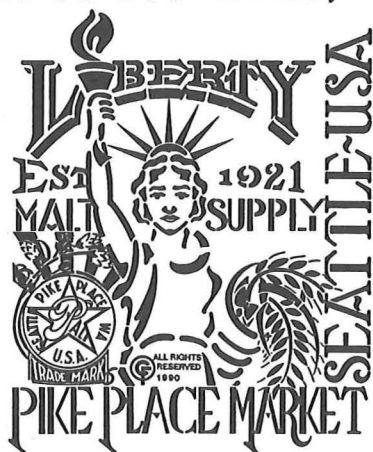
CooperSmith's Dunraven Ale
Hart's Pacific Crest Ale
Northampton's Old Brown Dog Ale

American Brown Ale

OG: 1.040–1.055 (10–14 °P)
Alcohol (by volume): 4–5.5%
IBUs: 25–60
Color (SRM): 15–22

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Pale Ale

STEPHEN FOSTER

Classic English Pale Ale

This great beer style was developed as a "yuppie" beer in the late 1700s because it was brewed with a pale malt difficult to produce in those days. This made it fairly unique and initially expensive, but was the birth of the style. The beer was "light" compared to the standard drinking ale at the time, porter. The style has developed and is now fairly well defined as a pale to copper colored ale with high hop bitterness, flavor and aroma. The beer has a medium body, low to medium maltness with a fruity or estery character dominating and a lingering malt sweetness. In contrast to IPA, alcohol is not as evident.

Hops are the key to developing a good pale ale. They dominate and should be strong in bitterness, which is achieved classically using Goldings but can be done with Northern Brewer, Galena or Brewers Gold. Fresh Goldings, Cascade, Hallertauer or Saaz are excellent and commonly used for aroma, added at the end of the boil or for dry hopping. As with IPA, all the hops used should be fresh. A good rolling boil in lower-gravity worts is essential to increase alpha-acid utilization.

Hard water should be used. This will depend on your water supply, but hardness can be enhanced by adding gypsum (calcium sulfate). The water of Burton-upon-Trent was the original hard water used in beers like Bass Ale that helped found this style. Burton water salts can be used. Hardness helps hop utilization. Classic pale ale is a medium-bodied beer with more maltness than IPA. This can be achieved using English pale ale malt mashed in an infusion mashing at 151 to 153 degrees F (66 to 67 degrees C). Step temperature mashing may also be effective. Crystal malt is used

to add residual sweetness and body. Adjuncts can be used to provide higher alcohol. There are a number of excellent pale ale kits on the market.

The same yeasts can be used for Classic pale ale as for India pale ale. Dried yeasts such as Munton and Fison and Whitbread are good, as are liquid yeasts such as Wyeast No. 1056 (Chico Ale) and Wyeast No. 69 (Chicago Ale). These yeasts attenuate well. Care should be taken to prevent stalling out. Oxygenate the wort well before pitching, then to insure a clean flavor, do not allow oxygen into your brew.

Commercial Examples

Bass Pale Ale
Whitbread Pale Ale
Samuel Smith Pale Ale
Royal Oak Pale Ale
Young's Special London Ale
BridgePort Ale

English Pale Ale

OG: 1.044–1.056 (11–14 °P)
Alcohol (by volume): 4.5–5.5%
IBUs: 20–40
Color (SRM): 4–11

India Pale Ale

As with many distinctive beers, the roots of India pale ale have a story to go with them. In this case, the story comes from British colonialism in India when Hodgson, a brewer in 18th century London, monopolized the export of beer to British troops in India until 1820. Such a long expedition could prove very detrimental to beer, so the antiseptic properties of high alcohol content and hops were used to insure a drinkable product. This history provides a clue to the essential elements of this beer—a high hop bitterness and an evident alcohol

strength. This style also has a medium body with a pale to amber or copper color and can have a fruity or estery flavor. However, diacetyl should be avoided.

One of the original keys to the success of IPA was the Burton-upon-Trent water originally used. Water should be relatively hard with high sulfate (300 to 400 ppm) and calcium levels. This can be achieved by adding Burton salts or gypsum to the strike water. High bicarbonate should be avoided and can be removed by preboiling the water. A good clean hop bite is essential in IPA and a clean hop nose or aroma adds to this beer, but is not essential.

IPA originally was brewed with Goldings hops but many other varieties can be used (and may be preferred in the United States) because British Goldings store only moderately well and may oxidize, imparting an off-flavor. If the hops are fresh, use them. Galena or Brewers Gold are excellent bittering hops, Tettnanger, Fuggles and Cascade are good aroma hops with Goldings, Cascade or Talisman proving excellent for dry hopping. A long rolling boil (one and one-half hours) will help increase alpha-acid conversion and increase the gravity of the wort, through evaporation.

IPA has a pale to copper color that can be achieved by the use of liquid or dried pale ale malt extract, made from pale ale malt with the addition of crystal malt. Pale ale malt mashed with crystal malt will give an appropriate color. For a darker beer, 1 ounce of chocolate malt may add complexity to the flavor. Mashing at 152 degrees F (66.5 degrees C) in a single-step infusion mash is the traditional mashing process and leads to a medium body with an apparent but not overwhelming malt character to complement the hop bitterness. Extract brews should be complemented with crystal malt. Adding mashed pale ale malt (mashed at 152 to 153 degrees F (66.5 to 67.5 degrees C) to the wort from an extract brew adds body and malt character. Both extract and mashed brews can handle up to 15 percent adjuncts, such as corn sugar and flaked maize (in a mash only) to increase the alcohol character of the beer. The alcohol level also is achieved by another tra-

ditional characteristic of this beer: high attenuation.

A number of yeasts can be used to achieve high attenuation and a low fruity or estery flavor. Traditionally brewed with top-fermenting yeasts such as Munton and Fison, Whitbread dried and liquid, Wyeast No. 1056 (Chico Ale) and Wyeast No. 1028 (British Ale). Liquid yeast cultures typically lead to a cleaner beer, but dried yeast given here may be used with good results if handled well. A well-oxygenated wort helps the yeast shorten the lag phase and prevents stalling out. Be careful not to introduce air after fermentation starts because the air leads to oxidation and off-flavors. The optimum fermentation temperature is 65 degrees F (18.5 degrees C). Fermentation with an inferior yeast or at too high temperatures will produce diacetyl.

Many Americans think the addition of oak chips will enhance the flavor of IPA. However, traditional English oak is different from its American counterpart. Oak chips should be used sparingly—too much oak will leave a bitter, woody character to what could otherwise be a great beer.

Commercial Examples

Anchor Liberty Ale
Ballantine Old IPA
Sierra Nevada Celebration Ale
Grant's IPA

India Pale Ale

OG: 1.050–1.060 (12.5–15 °P)
Alcohol (by volume): 5–6%
IBUs: 40–60
Color (SRM): 8–14

American Pale Ale

American brewing of pale ale is at its finest with this beer, which can

hold its own against any ale in the world. Modern pale ale brewing has been sparked by the recent upturn in microbreweries and brewpubs. As with the English brewing industry, a small number of large American breweries engulfed smaller family breweries, and beer tastes slowly descended to the lowest common denominator—resulting in large quantities of light Pilsener beer for mass consumption. The American ale was the principal victim of this trend, but it is bouncing back. Some excellent ales are being produced by American breweries. The style is characterized by a pale to light copper-colored beer with low to medium maltiness

(slightly lighter than its English cousin). The pale ale has a medium hop bitterness and aroma and has a fruity-ester character with no, or only a hint of, diacetyl.

The malt extract used to produce this pale ale should be light or light mixed with pale. Additional malt sweetness can be added with a little crystal malt. Some dextrin powder will help with body and head retention. For the all-grain brewer, American malt (such as Klages) mashed by either a stepwise or decoction method will produce the desired malt quality. An infusion mash at 152 degrees F (66.5 degree C) may be used but should be heated to 19 degrees F (76 degrees C) to terminate enzyme activity. The addition of crystal malt in the mash will help improve residual sweetness. The use of adjuncts in American ales is common and the addition of up to 15 percent flaked maize or rice will help produce alcohol without any adverse effect on the final product.

The hops used are American varieties such as Chinook, Cluster, Eroica and Perle for bittering and

Cascade and Willamette for aroma. Dry hopping this ale adds character.

The water should be similar to that for English pale ales and biters—hard with a reasonably high sulfate content. Burton salts or gypsum may be used. Bicarbonate should be removed by boiling.

Some of the best yeasts to produce American ale are at the bottom of the beer you buy at the local liquor store, if they are cultured correctly. Commercial dried and liquid yeasts also are very effective. Those given for English pale ale are a good selection for this beer and will not produce diacetyl. Alcohol strength should not be evident.

Commercial Examples

Boulder Pale Ale
Sierra Nevada Pale Ale
Hopland Red Tail Ale
Pike Place Pale Ale

American Pale Ale

OG: 1.044–1.056 (11–14 °P)
Alcohol (by volume): 4.5–5.5%
IBUs: 20–40
Color (SRM): 4–11

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English and Scottish Bitter

STEPHEN FOSTER, GREG NOONAN

English Bitter

To capture the true elements of this beer style, it is important to understand the changes that have occurred in the production of the vast number of beers known as "bitter." English bitter is the mainstay of beer drinkers and has been for many years. It is a draft beer served at cellar temperature and pulled to the glass with the hand pumps that decorate English pubs. The beer is primed and fined in the cask. By using different types of pegs in the cask, the level of CO₂ is carefully controlled to insure the carbonation is not too aggressive and does not give an inappropriate "bite" to the beer. The beer is well-attenuated with a good hop character which is not masked by overcarbonation. When many of the small pubs in England were bought by large national breweries, the beer sold by these pubs became more uniform, prefiltered, pasteurized, precarbonated "keg" beers that lacked the complex flavors and bouquet of the more traditional bitter. As time passed, the discerning bitter drinker sought out and demanded a return to the bitters of the past, and with the aid of the Campaign for Real Ale (CAMRA) English bitter returned to the pubs.

The difference between each bitter, ordinary, special and extra special may not be apparent when sliding from one class to another but there is a distinct difference between these beers. The one distinct characteristic is the level of carbonation of this pale to copper-colored beer.

English Ordinary Bitter

English bitter is a gold to copper-colored beer with medium bitterness and low carbonation. It has a light to

medium body and a low to medium residual malt character. The presence of diacetyl and a fruity character are acceptable in all forms of bitter but should not be overpowering, particularly in ordinary bitter.

For extract brewers an appropriate body and malt character can be achieved with either liquid malt extract (5 pounds of dried malt extract (4 1/2 to 4 3/4 pounds). Crystal malt (1 to 6 ounces) may be used to provide residual sweetness and color.

For the all-grain brewer, English pale ale malt (4 1/2 to 5 1/2 pounds) mashed in a single-step infusion mash at 150 to 151 degrees F (65.5 to 66 degrees C) will provide the appropriate body and residual sweetness. Crystal malt may be used at the rate suggested above as may other adjuncts such as flaked maize (4 to 12 ounces) if used with caution. Other adjuncts, such as chocolate malt (1/2 to 1 ounce) may be used to add complexity and color to this bitter. The balance should be no more than 10 percent.

Many different varieties of hops may be used to produce the assertive hop character typical of ordinary bitter. Northern Brewer, Fuggles, Brewers Gold and Chinook (if used with care) are good bittering hops. These hops work particularly well with a fresh aroma hop such as Goldings or Hallertauer. The amount of hops used should provide 20 to 25 IBU. Dry hopping with fresh Goldings adds to the overall hop character of bitter.

The water used to produce bitter is similar in mineral content to that used for pale ale. It should be relatively high in hardness from sulfate. Burton water salts can be added to achieve this.

Liquid yeasts such as Chico Ale yeast (Wyeast No. 1056, M.eV. Research No. 72), Chicago Ale yeast (M.eV. Research yeast, Wyeast No. 1028), and British Ale yeast (Wyeast No. 1098, M.eV. Research No. 9) are all good, as are commercial dried yeasts such as Munton and Fison, Edme and Whitbread. To achieve the clean, drier character of this beer, fermentation should be conducted rapidly at warmer temperatures using a yeast not prone to high diacetyl production. Worts with a high adjunct-to-malt ratio will produce high diacetyl, so adjuncts should be kept within the right ratio.

This is a draft beer so the carbonation level should be kept low.

—Stephen Foster

Ordinary Bitter

OG: 1.035–1.038 (8.5–9.5 °P)

Alcohol (by volume): 3–3.5%

IBUs: 20–25

Color (SRM): 8–12

Special Bitter

Special bitter is a stronger and more robust beer than ordinary bitter with a more evident malt flavor. The increased hop character is used to balance the increased malt. This beer is prepared in a way similar to ordinary bitter with some exceptions.

Increased body and sweetness can be achieved using liquid malt extract

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(5 1/2 to 6 pounds) or dried malt extract (5 to 6 pounds). Dextrin powder may be used in limited quantities to increase body and head retention. For the all-grain brewer, English pale ale malt (5 1/2 to 6 1/2 pounds for 5 gallons) mashed in a single-step infusion mash at 151 to 152 degrees F (66 to 66.5 degrees C) will produce a beer of the appropriate gravity, body and sweetness. Adjuncts like flaked maize (1/2 to 1 pound) may be used in the mash. A rolling boil for 1 to 1 1/2 hours will improve alpha-acid utilization and remove proteins.

Water for this beer is the same as for other bitters and pale ales—hard with about 300 ppm sulfate. Burton salts help achieve this.

To balance the slightly higher residual malt, many good bittering hops like Northern Brewer, Chinook, Brewers Gold and Galena can be used. Good aroma hops are fresh Goldings, Cascade, Fuggles and Hallertauer added at the end of the boil.

The same yeasts used in the bitter are very effective in special bitter.

As with all draft beer, a low final priming rate will produce an authentic draft bitter character.

—Stephen Foster

Special Bitter

OG: 1.038–1.042 (9.5–10.5 °P)

Alcohol (by volume): 3.5–4.5%

IBUs: 25–30

Color (SRM): 12–14

Extra Special Bitter

Top-of-the-line English extra special bitter is a full-bodied, robust copper-colored beer with a maltier, more complex flavor than its more pedestrian counterparts. It is characterized by balanced malt with an assertive hop.

The water used to produce this fine beer is hard with high sulfate (300 ppm). This can be achieved with Burton salts or gypsum. Soft water high in bicarbonate is not good, and bicarbonate can be removed by preboiling the water, cooling and decanting before use.

Many excellent liquid malt extracts will create a fine extra special bitter. Malt extracts should be supplemented with crystal malt for sweetness and body. Other adjuncts such

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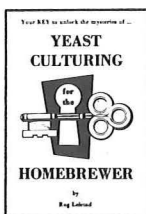
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as barley syrup, brewers caramel, brown sugar or molasses can be added to enhance the malt and add complexity. Mashing a little grain to freshen and round out an extract brew is a good way to add body and sweetness.

For the all-grain brewer, the use of English pale ale malt mashed at 152 to 153 degrees F (66 to 66.5 degrees C) in a single-step infusion mash produces a good balance of fermentable and non-fermentable sugars. Crystal malt (14 ounces to 1 pound) adds residual sweetness and body. Black or chocolate malt adds color and complexity if used at low levels. The addition of adjuncts such as flaked maize adds alcohol without bitterness. Other adjuncts such as molasses, barley syrup and torrefied barley may be used in limited amounts of up to 15 percent. The same type of yeasts used in ordinary bitter may be used for this beer. Liquid yeasts often are cleaner (fewer bacteria) than dried yeast, but dried yeasts can produce a fine beer.

To balance the additional residual sweetness, fresh bittering hops such as Northern Brewer, Fuggles, Galena and Chinook are good. A good hop aroma is appropriate for this style and can be achieved by using Goldings or Cascade. As with other bitters a low carbonation rate is important. This beer should be served at 50 degrees F (10 degrees C) to preserve and draw out the quality and flavor.

—Stephen Foster

Commercial Examples (English Bitters)

Red Hook Ballard Bitter
Red Hook ESB
Young's Ram Rod
Hale's Bitter Draught
Pyramid Pale Ale

Extra Special Bitter

OG: 1042–1.050 (10.5–12.5 °P)
Alcohol (by volume): 4.5–5.5%
IBUs: 30–35
Color (SRM): 12–14

Scottish Ale

Scotsmen have traditionally brewed a range of ales uniquely Caledonian in character. Compared to English ales, they are browner, more malty, softer and chewier. Cooler fermentations produce less esteriness

and lower hop rates contribute to the soft and malty character.

The essential elements of Scottish ales are the use of from 1 to 3 percent roasted barley in the grist and slight caramelization in the kettle, combined with a low hopping rate. For a five-gallon batch, this would be 3/4 to 1 1/4 ounces of a 5 percent alpha-acid hop added 45 minutes before the end of the boil. Relatively soft water (150 ppm permanent hardness, 250 ppm total hardness) provides beneficial amounts of calcium without affecting the flavor intrusively.

Yeast character, including detectable but unobtrusive amounts of diacetyl, sulfuriness and even vinegar, are well within the norm, but the fruitiness or winelike aromas that are characteristic of English ales are noticeably lacking. Flocculant yeasts that tend to enhance maltiness are more appropriate than are powdery and estery strains. Fermentation would usually take six to seven days from pitching to racking at a maximum temperature of 68 degrees F (20 degrees C).

The beer color is always browner than its English ale counterparts because of the use of the roasted barley. Crystal malt also may be used, but rarely exceeds 10 percent of the grist charge. Records of brewing with peat-smoked malts have not survived, although it was probably common enough in preindustrial times among home and cottage brewers. Alcohol levels of the Scottish ales are always moderate, with even export below 5 percent by volume. A low level of carbonation (1 to 1.8 volumes) is absolutely essential so that the softness of this style is not lost.

Scottish light (60 shilling) is a mildly hopped, low-alcohol brew of OG 1.030 to 1.032, finishing at 1.010. Scottish light is still seen in a few Scottish pubs. Addition of up to 10 percent crystal malt will increase its character. "Schilling" probably refers to old tax rates on the beers.

Scottish heavy (70 shilling) is the fullest flavored of the Scottish ales. It too is very mildly hopped. An end gravity of approximately one-third the original gravity (1.034 to 1.040) gives this style a medium body, with a substantial sweetness balanced by the chewiness of the roast barley and

kettle caramelization.

Scottish export (80 shilling) is slightly more hop-bitter than the heavy. It is fermented out to approximately one-quarter gravity from a starting gravity of 1.042 to 1.050, so it is a drier beer overall. It can thus stand up to greater carbonation than the "softer" light and heavy.

Scottish ales are poorly represented in the American market, although they are enjoying a resurgence of popularity on the auld sod, especially as cask-conditioned real ales. Unfortunately, they do not stand up to abuse, and stale bottles can be abominable.

No light or heavy ales are available in the United States or Canada. Belhaven Export is a good example of this style, and one of the maltiest of the Scottish exports.

Scottish: Similar to English bitter, but rounder, maltier and softer in flavor, with less bitterness and esteriness. Slightly browner color than English bitter, although a deep amber color is acceptable. Faint smoky character acceptable.

- Scottish Light—Mildest.
- Scottish Heavy—Moderate strength. Maltiness and roundness predominate.
- Scottish Export—Moderate strength. Drier, slightly more bitter and more carbonation.

—Greg Noonan

Commercial Examples (Scottish Ales)

Vermont Pub & Brewery's Wee Heavy
Wynkoop's Quinn's Scottish
MacAndrews Scotch Ale

Scottish Light

OG: 1.030–1.035 (7.5–9 °P)
Alcohol (by volume): 3–4%
IBUs: 10–15
Color (SRM): 18–17

Scottish Heavy

OG: 1.035–1.040 (9–10 °P)
Alcohol (by volume): 3.5–4%
IBUs: 12–17
Color (SRM): 10–19

Scottish Export

OG: 1.040–1.050 (10–12.5 °P)
Alcohol (by volume): 4.0–4.5%
IBUs: 15–20
Color (SRM): 10–19

Porter

STEPHEN FOSTER

Robust Porter

Robust porter at one time was a very popular beer that passed from favor in England and Ireland before the 1970s. However, porter is slowly making its way back into the brew kettles of smaller American and British breweries. The roots of porter suggest the characteristics of this style. London drinkers ordered several different beers to be mixed into their pot for consumption.

Then a brewer by the name of Harwood brewed a beer he called "entire" to capitalize on this habit. This beer became known as porter, a close relative of stout. In fact, stout was an original form of porter. This beer is dark with a deep red hue but not as opaque as stout. It has a good, but not overpowering, hop flavor balanced by the sweetness of crystal malt. A roast grain flavor is present and adds the grainy characteristic to this beer.

Porter can be made at home using a dark malt extract (dry or liquid) and supplementing the wort with chocolate or black malt (4 to 8 ounces) and crystal malt (1/2 to 1 1/2 pounds). These grains are better extracted before being added to the extract wort before boiling.

For the all-grain brewer, pale ale malt mashed in an infusion mash at 151 to 153 degrees F (66 to 67 degrees C) will produce the right balance of residual body, but use crystal, chocolate or black malts to add color, sweetness and chocolate malt flavors characteristic of this style. Dextrin powder may be added for head retention and body.

The water for porter should be similar in mineral content to that used for a sweet stout—soft with low sulfate and higher in chloride and calcium. Hard waters should be diluted; soft water may be supplemented with

calcium chloride or chalk.

Good bittering hops for robust porter are Northern Brewer, Perle and Chinook with Cascade (15 to 30 minutes) providing a good aroma to the final beer. Dry hopping will benefit the final character of porter. A rolling boil in a dilute wort will improve alpha-acid utilization. Stout yeasts are appropriate for this beer style, such as Guinness and Sierra Nevada cultured from bottles. Leigh-Williams, Muntona ale yeast or Edme dried yeasts are good, as are liquid yeast cultures such as Irish stout yeast (Wyeast No. 1084) and even German ale yeast (Wyeast No. 1007).

Commercial Examples

Anchor Porter
Sierra Nevada Porter
Boulder Porter
Red Hook Black Hook Porter
Rubicon Porter



Ray Spangler, Erlanger, Ky.

Robust Porter

OG: 1.044–1.060 (11–15 °P)

Alcohol (by volume): 5–6.5%

IBUs: 25–40

Color (SRM): 30+

Brown Porter

This beer is less robust than its heavier brother, but has the essential characteristics of a porter: a good deep red color, a residual sweetness with a slight burnt grain character balanced by a residual hop and hop aroma.

A dried or liquid dark malt extract (5 to 7 pounds per 5 gallons) will produce residual sweetness and add body. Balance is the key with this beer because too much crystal malt will result

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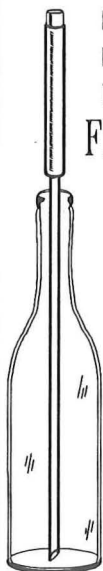
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in a sweet beer and too little will not
balance the hops. Chocolate should be
used (1 to 6 ounces) to produce the
required color and roasted grain taste.
Boiling the grains for the full 1 to 1 1/2
hours with the wort and hops can add
too much grain flavor and disturb the
balance of this beer. Black patent malt
may be used; however, too much will
produce a strong burnt character in-
appropriate for the style.

The water for brown porter is
similar to that described above for
robust porter and should have low
sulfate and high chloride and calcium.
The hop rate for brown porter is
slightly lower than above, as the
slightly lower gravity of the wort will
give a higher alpha-acid utilization.
Fewer hops will give a better balance.
Bittering hops like Northern Brewer,

Perle, Chinook and Brewers Gold are
ideal. Aroma hops like Cascade,
Hallertauer and even Saaz at the end
of the boil and for dry hopping will
complement the dark grains.

The stout and strong ale yeasts
suggested above for robust porter are
excellent for brown porter. But re-
member, allowing oxygen into the beer
after fermentation has started will
produce off-flavors.

Commercial Examples

Samuel Smith Taddy Porter
Young's London Porter

Brown Porter

OG: 1.040–1.050 (10–12.5 °P)

Alcohol (by volume): 4.5–6%

IBUs: 20–30

Color (SRM): 20–35

English and Scottish Strong Ale

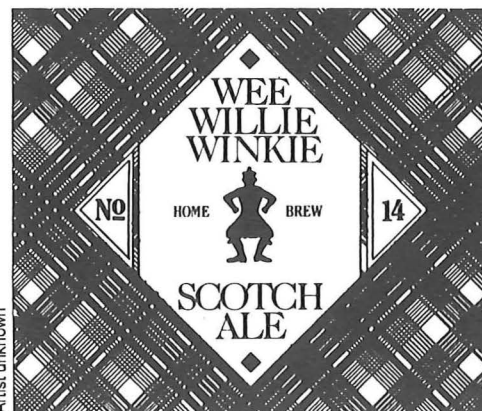
STEPHEN FOSTER, GREG NOONAN

English Old Ale English Strong Ale

English strong ale was the stan-
dard pale drinking beer of the 17th
and 18th centuries. In those days the
acceptable gravity was tested in the
pubs by a man with leather trousers
pouring beer onto a stool and allowing
it to dry before standing up. If the stool
stuck to the trousers, the beer
had an adequate gravity. The
lack of refrigeration and uncon-
trolled storage conditions required
that the beer be robust enough to
prevail against bacteria. This was
achieved by a high hopping rate
and high alcohol content. Because
of the large quantities of grain
and natural yeasts, a full-bodied
beer with a nutty, grainy malty
sweetness was produced but bal-
anced with the very high hop con-
tent. The yeast added a complex,
fruity-estery flavor to make a ro-

bust, complex beer.

An acceptable English strong ale
can be brewed using pale ale malt
extract (dry or liquid). The addition of
crystal malt will give more residual
sweetness and color. Mashing a little
pale ale malt at 152 to 153 degrees F
(66 to 67 degrees C) and adding the
extract to the wort from the extract
will add body, head retention and com-



Artist unknown

plexity to the final beer.

The use of large quantities of grain will give a high residual alcohol content. Some homebrewers have used up to 25 pounds of pale ale malt for 5 gallons of English strong ale, but an adequate gravity beer can be made with 8 to 12 pounds of grain. Adjuncts such as flaked maize or rice can be added to the mash. Chocolate and black malts can be used to add color.

Typically, hard water is used to produce this beer. Sulfates (Burton water salts) should be added to soft water to help hop utilization and malt extract. Water with high bicarbonate should be preboiled and decanted prior to use.

The hop in modern English strong ale is apparent to balance the malt but must not be too aggressive. Many types of hop may be used, but with the high gravity of the wort it must be remembered the alpha-acid utilization will be lower than if the wort has a lower gravity. Northern Brewer, Galena, Brewers Gold and Chinook are good bittering hops; a hop rate of 30 to 40 IBU is appropriate. A hop aroma should be present but not highly evident because of the aging process. To mellow and blend the hop character with the malt and alcohol, this beer must be aged for a few months. This is important but note that it will weaken the hop aroma.

The yeast is very important and must have a number of attributes to achieve the flavor goals of the beer. In the olden days, beer yeast was a mixture of wild yeasts. This mixing of yeast strains is true today and you may need more than one yeast to ferment out this beer if a high alcohol content is to be achieved. The yeast should give an estery-fruity flavor and be able to survive high alcohol. Yeasts that achieve these attributes like Munton and Fison and liquid ale yeast made for higher-alcohol beers are good, but a Champagne yeast may be needed to complete fermentation. Fermentation byproducts created by the initial fermentation are ideal for this style of beer, which should be fruity and estery with complex character. If the yeast fades too early an overly sweet beer will be produced. Even worse, if not allowed to ferment out it may continue to ferment in the bottle with potentially disastrous consequences.

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Kent Keller - Proprietor

Oxidation will significantly damage this beer. Care should be taken to avoid oxidation over the storage time needed to blend the alcohol, hops and esters for an English strong ale.

—Stephen Foster

Commercial Examples

BridgePort Winterbrew Strong Ale
Theakston's Old Peculier
Geary's Hampshire Special Ale
Kalamazoo Third Coast Old Ale

English Old/Strong Ale

OG: 1.060–1.075 (15–19 °P)
Alcohol (by volume): 6.5–8.5%
IBUs: 30–40
Color (SRM): 10–16

Strong "Scotch" Ale

Scots ale, or "wee heavy," variously categorized as 90, 100 or even 120 shilling according to starting gravity, shared the characteristics of Scottish ales of more usual gravity, but to an exaggerated degree. It is overwhelmingly malty, and the stronger versions (OG up to 1.095) are almost syrupy. Fusel alcohols are not so predominant as they are with the barley wines of England; overall the alcohol character is more cleanly ethyl. Fermentations are roused to keep the yeast suspended, so that a wee heavy with an OG of 1.075 may ferment down to 1.018, or from 1.095 to 1.025. Hop rates are likewise subdued, with sweet-

ness tempered by appreciable caramelization during a long kettle boil, and by the slight acidity of the roast barley.

Scots ale is poorly represented in the American market, although it is enjoying a resurgence of popularity on the auld sod, especially as cask-conditioned real ale. Unfortunately, they do not stand up to abuse, and stale bottles can be abominable.

McEwan's Scotch Ale is a reasonable example of the wee heavy style, while McAndrew's is rivaled only by the elusive Traquair House, which has up to now only been sporadically available in U.S. markets.

- Scotch Ale. Deep burnished copper to brown color. Full body. Strong malt character, faint roasty background. Butteriness acceptable. Clean alcohol flavor balances the rich maltiness.

—Greg Noonan

Commercial Examples

Cambell's Scotch Ale
Douglas Scotch Ale
Mac Andrew's Scotch Ale
McEwans Scotch Ale
Traquair House

Strong "Scotch" Ale

OG: 1.072–1.085 (18–21 °P)
Alcohol (by volume): 6.2–8%
IBUs: 25–35
Color (SRM): 10–47

Stout

BYRON BURCH, PADDY GIFFEN

Dry Stout

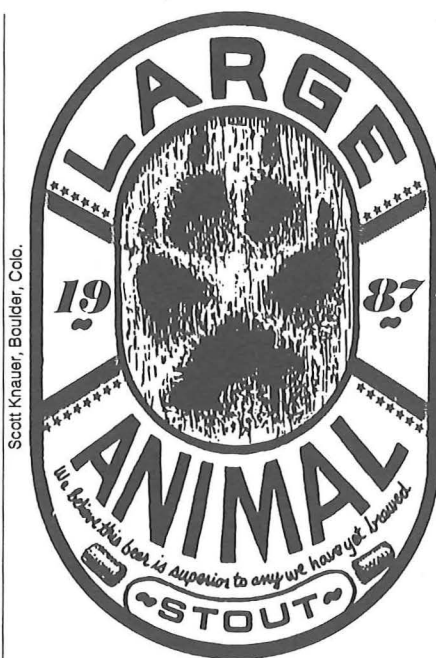
One of the first beers I ever brewed was an extract-based dry stout. My goal was to produce a beer that approached in some fashion the profile of Guinness Extra Stout—a full, rich beer that had a dry, lasting finish.

While dry stout also is referred to as Irish stout and Guinness is the universally recognized standard, its origin can be found in the porter style brewed in 18th-century England. A richer, fuller-bodied version of porter was brewed and called “stout porter.” The Irish version of this stout porter had taken a firm hold as Ireland’s national beer by the mid-19th century.

The principal ingredient that distinguishes dry stout from sweet stout and porter is the use of unmalted roasted barley as the primary source of the dry roasted character associated with dry stouts.

Guinness produces three distinct types of dry stout. The lightest in body is the Draught Guinness (1.040 to 1.046), which is dispensed using both carbon dioxide and nitrogen to give it an exquisite creamy head. A fuller version, Guinness Extra Stout (1.050 to 1.055), is bottled. Guinness licenses various breweries around the world to reproduce their beers. A third style, produced in tropical climates around the world, is called Guinness Foreign Extra Stout. This style of Guinness has alcohol volumes of 7 percent or more with original gravities of 1.065 and higher. While this style is not exported to the United States, ABC Extra Stout from Singapore is a good example and is imported here.

Dry stouts should provide an initial malt and caramel profile with a definite dry-roasted bitterness in the



finish. Traditional English hops should be used primarily to balance the malt character of the beer. The hop aromatic quality of traditional dry stouts should be kept to a minimum. Some American versions provide a definite hop profile; a good example is Sierra Nevada Stout.

An all-grain recipe should use 11 percent of its mash with unmalted barley, 15 percent caramel malts and rely primarily an English two-row pale malt for its fermentables. The extra stout style should have a medium to full body and the use of some dextrin malt (7 percent) or high mash temperatures, 158 degrees F (70 degrees C) can be used. A small percentage of black patent (2 percent) will help achieve the necessary opaque quality of a dry stout. For extract brewers, try using some crystal (1/2 to 1 pound). Crack the grain with a rolling pin, add the cracked grain to about 3/4 gallons of cold water, bring to a boil

gradually, sparge with a pint of 170-degree-F (76.5-degree-C) water and add runoff to the boil.

A pound of unmalted barley can add body to extract beers, but must be mashed to avoid stability problems. Using diastatic malt syrup with a 30-minute stove-top mash will give complete conversion if the extract manufacturer's directions are followed.

Dry stouts should be fermented using an ale yeast. I recommend using the Irish Ale No. 1084 from Wyeast.

Water for brewing stout is similar to porter—it should be soft with low sulfate content, but higher in calcium and chloride.

—Paddy Giffen

Commercial Examples

Sierra Nevada Stout
Guinness Stout
Tooth Stout
Samuel Smith Oatmeal Stout

Classic Dry Stout

OG: 1.038–1.048 (9.5–12 °P)
Alcohol by volume: 3.8–5%
IBUs: 30–40
Color (SRM): 40+

Foreign Style Stout

OG: 1.052–1.072 (13–18 °P)
Alcohol by volume: 6–7.5%
IBUs: 30–66
Color (SRM): 40+

Sweet Stout

I can't say that I have brewed many batches of this particular beer style. If I look for a reason, it's probably because English stouts (sweet, milk, cream) have had to live in the shadow of the more popular Irish dry stout and as a result has been ignored somewhat by homebrewers. I also find it odd that like the dry stouts of Ireland, English stouts share a common origin, the “stout porter” brewed in England of the 18th century. Among homebrewers, porter has always been a popular style to brew.

In contrast to dry stouts, English stouts more closely resemble their predecessor, stout porter, because it derives its roasted character primarily from chocolate malt, as does porter. The other key ingredient is milk sugar,

also known as lactose. Lactose is unfermentable and can be used both in the boil and added at bottling. It's available in a powder form, similar to corn sugar. The English produce two styles of sweet stout. Watney's Cream Stout is a good example of the English standard (1.038 to 1.045). Mackeson produces a sweet stout for export and is a much fuller example of the style (1.055 to 1.059).

Sweet stouts should have a rather pronounced malty, chocolate, caramel profile. Hops are used primarily to balance the sweetness and provide no apparent flavor or aroma—the balance is toward the malt side, not the hops. Traditional English hops should be used with the emphasis on bittering and not on aromatic hop additions.

To achieve a malty, chocolate, caramel profile I suggest using 10 percent of the mash with chocolate malt, 15 percent with crystal malt and rely primarily on English two-row pale malt for the fermentables. You could use high mash temperatures of 158 degrees F (70 degrees C) to produce more dextrins or use some dextrin (7 percent) in the mash. Sweet stouts are rather opaque, so use a small amount of black patent (2 percent). For a five-gallon batch, I suggest a minimum of one pound of lactose, using some in the boil and the remainder at bottling. For extract brewers try using some crystal (1/2 to one pound) and chocolate (one pound) malt. Crack the grain with a rolling pin, add to 3/4 gallon of cold water, bring to a boil gradually, sparge with one pint of 170 degrees F (76.5 degrees C) water, collect runoff and add to boil.

Sweet stouts should be fermented using an ale yeast. I recommend using the Irish Ale No. 1084 from Wyeast.

Water for brewing stout should be soft, with low sulfate content, but higher in calcium and chloride.

—Paddy Giffen

Commercial Examples

Mackeson Stout

Sweet Stout

OG: 1.045–1.056 (11–14 °P)

Alcohol (by volume): 3–6%

IBUs: 15–25

Color (SRM): 40+

Imperial Stout

Czech Budweiser may be the “beer of kings” and U.S. “Budweiser” may call itself the “king of beers,” but both designations might better be applied to a small (but mighty) class of beers known by such exotic names as “Russian stout,” “imperial stout,” or the combined form, “Russian imperial stout.”

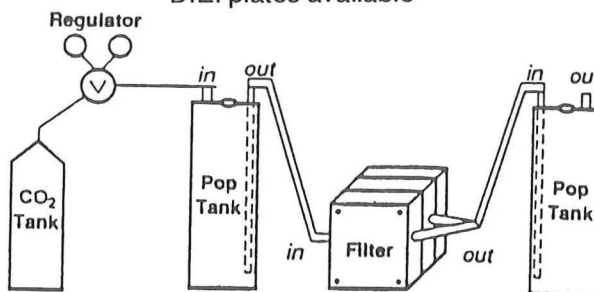
One of the best known styles of

beer brewed in England specifically for export overseas, this style is perhaps best categorized as a very dark to black barley wine. In describing it, the noted beer authority Michael Jackson has used terms like “rich” and “chocolatey,” and with “burnt currant character verging on being tarlike.” As with India pale ales, these beers were designed to condition on the high seas, their considerable strength and high hopping rates

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helping to preserve them until the destination was reached. The name came about after a British shipper was awarded a contract to keep the Russian imperial court adequately supplied.

Currently only two imperial stouts, one from Samuel Smith's and an American interpretation from Grant's, are widely available in North America.

As with other strong, well-aged,

high-gravity beers, homebrewers will most easily make imperial stouts by using malt extracts for a good portion of their fermentables, though an all-grain version is possible by drawing off the relatively concentrated wort after mashing and severely limiting the sparge, stopping as soon as the desired gravity has been reached.

The deep black color and roastiness can be achieved with one or more of the commonly used black grains (choco-

late malt, black patent malt and roasted barley) singly or in combination, or by the use of dark malt extracts.

One or more of the various crystal (caramel) malts is frequently employed to add roundness and depth to the flavor. In addition, such things as licorice, honey or molasses may be employed for particular effects, and more neutral adjuncts will suffice when your intention is just to raise the gravity. If sweetness is desired, lactose may be added to good effect.

Regardless of your approach in terms of these specialty ingredients, and whatever hop varieties you select, one thing is essential. Dark beers, and even some light beers, are best when made with water containing a significant amount of carbonate hardness. Carbonate alkalinity helps neutralize the extra acidity extracted from the roasted (burnt) grains, so the flavor of the beer will be smoothed out and the effect softened. With imperial stouts this can be particularly important, and water with 150 to 200 ppm carbonate hardness is recommended. Note also that sulfates like gypsum have the opposite effect. Excessive amounts (more than 1/2 teaspoon in five gallons) will tend to acidify your water to the point where stouts (and other dark beers) brewed with it become undrinkable.

Most ale and stout yeast strains may be used for these brews, but if you have any doubt about whether a particular strain's maximum alcohol tolerance might be exceeded by your recipe, it would be best to switch to a clean-flavored wine yeast strain such as Pasteur Champagne.

After fermentation at temperatures ranging from 55 to 70 degrees F (13 to 21 degrees C), this type of beer will continue to improve for six to 12 months after fermentation finishes.

—Byron Burch

Commercial Examples

Samuel Smith Russian Imperial Stout
Grant's Imperial Stout

Imperial Stout

OG: 1.075–1.090 (19–22.5 °P)

Alcohol (by volume): 7–9%

IBUs: 50–80

Color (SRM): 20+

Bock

VICTOR ECIMOVICH III

Traditional German Bock

To the average U.S. beer consumer, bock is possibly the best known style of beer after Pilsener, though the products these consumers are familiar with bear little resemblance to the genuine article. Traditional bocks, helles (pale) bocks and doppelbocks have been standards on the continent for hundreds of years now. The brewery at Einbeck, Germany, commonly is credited with originating this style of beer, the name "bock" being a corruption of "Einbeck."

Because Munich seems to be the source of many of the best-known bock breweries, let's use Munich's water as the standard for our bock brewing. Below is an analysis of the mineral content:

ion	CO ₃	Ca	Mg	SO ₄	Cl	Na	NO ₃
ppm	149	75	18	10	2	2	trace

Munich water is considered "carbonate water," not very desirable for pale beers but ideal for the rich amber to dark lagers for which the city is famous. The carbonates' effect of raising the mash pH will produce a wort with the higher dextrin to maltose ratio necessary for palate fullness. Potassium carbonate is probably the best source of carbonate for additions. Sodium carbonate could be used but the sodium ion is not desirable in Munich beers, while the very common calcium carbonate is almost insoluble at elevated temperatures. Take care not to overdo the carbonate, as too high a mash pH will cause extraction of many undesirable substances.

If additional calcium is required, use calcium chloride rather than calcium sulfate. Elevated sulfate levels will produce a drier, harsher character

contradictory to the malty smoothness desired, while the chloride ion tends to cause fermentations to end earlier, promoting malty smoothness.

The traditional Bavarian mash method is triple decoction, though lately double or single is more common. Whether you choose decoction, upward infusion or single infusion, your saccharification temperature should be relatively high, from 158 to 162 degrees F (70 to 72 degrees C) to produce a more dextrinous wort. Extract brewers should try to use a syrup that is known to ferment out to a fairly high apparent extract.

Older brewing books report that it was common to boil the wort until a good break was achieved, about 30 to 60 minutes before the first hopping, and then for an additional 90 to 120 minutes with a second hopping about 30 minutes before knockout and a third hopping at knockout. Remember, in bock beers malt predominates, so hop with restraint. Use just enough to balance the malt sweetness, with no hop aroma. When using few hops, use your best "noble" hops to impart

the finest character. The spicy Hallertauer varieties are used almost exclusively—try to avoid strong flowery or fruity hops, as these would be out of character.

In addition to pale malt, the deep malty character requires generous use of Munich, Vienna and toasted malts, with some caramel for sweetness and roundness. Chocolate and/or black malts in small amounts are required for proper flavor, complexity and color, but remember, we're not making stout here. Treat water, mash, boil, hop and ferment as specified.

Some older books state that traditional fermentation temperatures were higher for darker, stronger beers than for pale ones, about 45 to 50 degrees F (4.5 to 10 degrees C). More recent sources, however, state that the practice now is to ferment as cold as possible, from 32 to 36 degrees F (0 to 2 degrees C) to minimize the production of higher molecular weight alcohols and maximize the production of ethanol.

If your yeast won't ferment at 32 degrees F (0 degrees C), then 45 degrees F (7 degrees C) is recommended. If you have the capacity for long, cold lagering, you may wish to cool the beer before end fermentation until it has cleared some. Then transfer to secondary and lager as close to 32 degrees F (0 degrees C) as possible for a minimum of three weeks. The residual extract carried over to the secondary will promote a secondary fermentation similar in some respects to the effect of kraeusening. Do not attempt this if you can't afford to wait, as incomplete lagering could result in high diacetyl levels.

If you can't lager long and cold, allow the beer to ferment out completely.

Commercial Examples

Einbecker Ur-Bock

Traditional German Bock

OG: 1.066–1.074 (16.5–18.5 °P)

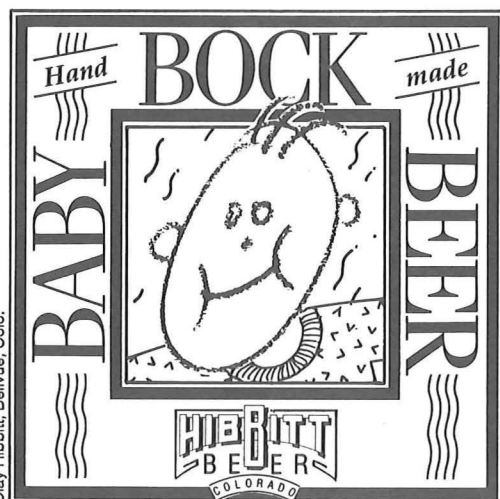
Alcohol by volume: 6–7.5%

IBUs: 20–30

Color (SRM): 20–30

Helles (Pale) Bock

Helles bock possesses the principal elements of bock beer: maltiness,



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strength and palate fullness, but is golden to light amber in color. Though some breweries produce a helles year round, many produce one type, Maibock, only for the month of May. Because only pale malts can be used in quantity, it is possible to achieve a more intense and pure malty character without any caramel or roasted notes to distract us. The challenge is to obtain this character while keeping the color low.

Light-colored Munich, Vienna and toasted malts should achieve the desired result, in addition to pale malt. Munich-style water treatment should be used with the exception that the carbonate levels should be below 50 ppm. Vigorous boiling should eliminate much of the carbonate.

Commercial Examples

Sierra Nevada Pale Bock
Ayinger Maibock

Helles Bock

OG: 1.066–1.068 (16.5–17 °P)
Alcohol by volume: 6.0–7.5%
IBUs: 20–35
Color (SRM): 4.5–6

Doppelbock

Ah, doppelbock, literally "double-bock," Germany's biggest beer, traditionally released on March 19 which is the feast day of the patron saint of the monks of Paula who produced the first doppelbock to sustain them during their Lenten fasts. Named "Salvator" in honor of the Savior it is produced today by the secular Paulaner Brewery of Munich. In honor of this first doppelbock, all others retain the "-ator" suffix in their names. From deep amber to opaque in color, age usually is counted not in weeks but rather in months. These brews are strong, rich and deeply satisfying. Get out your biggest mash-tun for this one!

Once again, in addition to pale malt, Munich, Vienna and toasted malts should come in quite handy, with some chocolate and/or black malt for proper flavor and color. Most doppelbocks are pretty dark. One of my favorites, Ayinger's Celebrator, seems to use some type of dark, intensely flavored Munich malt to achieve its character. Delicious! Remember that the stronger and heavier a brew is, the more you will need to increase the hopping rate to achieve proper balance, not only to compensate for the strong flavor, but because specialty malts tend to lower the wort pH which in turn lowers hop utilization. Remember also, the more alcohol a beer contains, the greater the amount of real extract required in the finished beer to compensate for the alcohol's diluting effect. We want lots of palate fullness, so mash accordingly at high temperatures.

Commercial Examples

Paulaner Salvator
Ayinger Celebrator
Doppelspaten

Doppelbock

OG: 1.074–1.080 (18.5–20 °P)
Alcohol (by volume): 6.5–8%
IBUs: 17–27
Color (SRM): 12–30

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Bavarian Dark

FRED SCHEER

Munich Dunkel

Did you know that "Münchner" and "Oktoberfest" are trademarks of Munich breweries? In Europe, beers with the name Münchner or "type Münchner" can only be brewed in one of the seven Munich breweries. Oktoberfestbier is a Märzen beer (lager category) with 1.050 to 1.060 OG, a deep golden color, very malty flavor and a bitterness up to 30 IBU. The malt used to brew this beer is the typical Münchner malz (Munich malt).

Vienna, Dortmunder and Munich type beers are coming back through the microbrewing and brewpub boom. Until 1928, the Münchner style was dark in color with a very malty sweetness. In 1928, the Paulaner brewery made a "Helles" Munich beer, and that was the end of the original dark (in color). From my grandfather I know that at this time the Munich beer type had a maximum of 25 IBU with an original gravity of 1.046 to 1.055. Some authors wrote that only in Bavaria is it possible to have a dark, very malty Münchner beer. Obviously, they never visited the United States.

As funny as it sounds, the original Münchner dark beer types are brewed in Franken (part of Germany). But they have too high a bitterness. That's how at Frankenmuth Brewery we developed our original Munich-type dark—the Münchner Märzen type brewed before 1928 in Bavaria. The Spaten Brewery in Munich has a Münchner Helles beer, with a touch of malt sweetness and not so highly hopped as other Münchner types. The original Münchner Helles is Paulaner beer, which has a caramel flavor. If you ever visit Germany be sure to visit the Brauerei Aying in the city of Aying. They brew a dunkel (dark) that is the best example of the Münchner type available in Germany.

Another very good example of Münchner dark is the König Ludwig Dunkel (King Ludwig Dark) brewed

by the Schlossbrauerei Kaltenberg.

Commercial Examples

Ayinger Alt-Bayrisches Dunkel
Frankenmuth Bavarian Dark

Munich Dunkel

OG: 1.052–1.056 (13–14 °P)

Alcohol (by volume): 4.5–5%

IBUs: 16–25

Color (SRM): 17–23.

Schwarzbier

There is another beer that in the United States is only brewed by homebrewers, though there are examples in Germany. There, Schwarzbiers are brewed in Kulmbach by the Kulmbacher Mönchshof Brauerei (Schwarzes Pils—Black Pilsener). The monastery's black beer from this brewery (black Pilsener) has a very strong malty aroma and for a Pilsener type, not enough bitterness. The sweetness of the beer indicated that dark roasted malt was used.

In Neumarkt, Oberpfalz, by the Newmarkter Lammsbrau, is a beer called "Schwarze Weisse" (black wheat

Chuck Shultz, Kenmore, N.Y.



beer). This beer is brewed as a draft beer, which means that the original gravity is not so high (1.027 to 1.030) and the malt sweetness comes from large amounts of dark malt. In regions around Kulmbach, these beers are very popular. They are usually not so high in original gravity, have less bitterness but a strong malty aroma.

Commercial Examples

A commercial example is not readily available in the United States.

Schwarzbier

OG: 1.044–1.052 (11–13 °P)

Alcohol (by volume): 3.8–5%

IBUs: 22–30

Color (SRM): 25–30.

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American Dark

DAVE NORTON

Similar to American standard lagers, except for color, these beers usually contain fairly high adjunct (corn and/or rice) ratios and are lightly hopped. Recipes tend to be simplistic in nature and usually include six-row barley, 20 to 40 percent corn with Washington state cluster hops for bittering and some Cascade or Willamette hops for aromatics.

American dark lagers usually are not as dark as their German counterparts, some being just a dark amber color. Like the American standard lagers, these beers have a lower taste profile with minimal hopping and a clean, crisp aroma, lacking in both hops and malt. Any aroma usually is indicative of its high adjunct-grain recipe, i.e., corn. Except for the inclusion of caramel, Munich or black malt (for color) their ingredients are identical to a standard American lager.

It should be noted that some of these beers differ from their light counterparts only in being darkened with brewer's caramel syrup. Fortunately, most examples of "caramel beer" are no longer around. In the Midwest we are lucky to have available two exceptional examples: Berghoff from Huber and Augsburger, once brewed by Huber and now brewed by Stroh's in Minneapolis. August Schell from new Ulm, Minn., brews an excellent example in its Ulmer Brau. From Madison, Wis., comes an all-malt version: Capital's GartenBrau, a dark, rich and malty beer. On a national level Miller's Lowenbräu Dark and Anheuser-

Busch's Michelob Dark fit the category.

Thanks to the rise in microbreweries and brewpubs across our land, "dark" beer lovers are finding it easier to sample this style, although most of these examples are all-malt beers (I'm not complaining!). For a homebrewed American dark, I personally recommend 20 to 30 percent adjunct grain, an OG of 1.040 to 1.048, 10 to 12 Plato and a bitterness level of nine to 15 IBU. Finishing hops are not necessary but add a classy touch. Color



ranges from dark amber all the way to dark—10 to 15 SRM, and alcohol from 4 to 5.5 percent. Pick a clean, fairly high attenuative yeast. Ferment in a cool (52 to 58 degrees F) primary and age at least one month in a 40-degrees-F or colder secondary.

Commercial Examples

Berghoff Dark
 Michelob Dark
 Capital Gartenbrau Dark
 Henry Weinhard Dark

American Dark

OG: 1.040–1.050 (10–12.5 °P)
 Alcohol (by volume): 4–5.5%
 IBUs: 14–20
 Color (SRM): 10–20

Dortmund, Export

DAVE NORTON

Export was first brewed in Dortmund, Germany, an interesting city if only for brewing more beer than any other German or European city. Five breweries currently produce beer there. Some companies share plants. In actuality, nine different brands compete for local and regional markets. Some, like D.A.B. (Dortmunder Actien Brauerei) and D.U.B. (Dortmunder Union Brauerei) began exporting their beers on the international market, hence the name "export."

If the name Dortmund isn't mentioned during a discussion of the great brewing centers of the world, it is perhaps because of its long-favored status by local miners and steelworkers. The style itself may contribute to the problem because an export is typically drier than a Munich pale type, fuller bodied than a Pilsener and a little higher in gravity than either, at around OG 1.052 (13 °P)

Unfortunately, because of the great success of Pils and Munich-style lagers in Germany—even in Dortmund—the export style is on the wane and may someday be hard to find. We as homebrewers have a duty to keep this classic lager, one of the first beer styles, alive! Fortunately there is some leeway as to style, ranging from malty beers with a floral hop dryness to lighter examples, all highly attenuated with low final gravities. Nearly all are pale, though not as pale as a Pilsener.

"Noble" hop varieties such as Hallertauer, Tettnanger and Saaz should be used for bittering, flavor and aroma. Bitterness should be from 23 to 29 IBU.

A word about water. In Dortmund the water is quite hard (over 1,000 ppm) and its effect on the brewing cycle greatly influences the final product. Try gypsum in the mash (for extract

brewers in the boil) to achieve true sharp "export" character.

Kohl's Authentic



Dortmund Bier

Serve at 50° F, with a good head.

Steve Harley, Boulder, Colo.

When brewing all-grain exports, I suggest 20 to 25 percent six-row malt to boost the enzyme content of the mash, because the traditional Dortmund malting process increases the malt's enzymatic power and authentic Dortmund malt is difficult to find in the United States. The remainder of the grain should be two-row lager malt, the lightest in color that you can find. Mash temperatures should be low, near 150 degrees F (65.5 degrees C) to keep the dextrin content low and the body light. I also recommend the use of yeast nutrient for all-grain or extract recipes to maintain a high rate of yeast attenuation. If you don't want to use nutrient, be sure to select a quality, high-attenuating liquid lager yeast and monitor the fermentation temperatures carefully.

Commercial Examples

Dortmunder Actien Brauerei Export
Dortmunder Union Brauerei Export
Altenmünster
Kulmbacher Schweitzerhofbrau

Dortmund/Export

OG: 1.048–1.056 (12–14 °P)
Alcohol (by volume): 5–6%
IBUs: 23–29
Color (SRM): 4–6

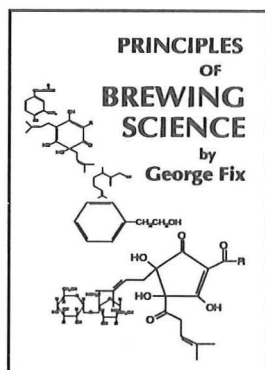
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Munich Helles

CHARLIE PAPAIZIAN

Munich Helles is the mainstay of Bavarian festive beer drinking. Light (*helles*) Munich-style lager is served everywhere throughout Bavaria. Generally lower in alcohol than many of the other celebratory styles, this is a beer for everyday quaffing. Even I have downed two or three liters of the stuff with only a grin to show for it.

Munich Helles is a mildly hopped, malty, pale-colored beer. A common tendency for homebrewers is to overhop this beer. Go easy on the hop bitterness. The art to making this beer is to use the finest "noble" type hops, such as Tettnanger, Saaz, Spalter and Hallertauer. True Munich Helles has a mild hoppy flavor brought about by the addition of hops at various stages 15 to 40 minutes before the end of the

boil. Also, this style may have an extremely subtle hop aroma achieved by very late and minimal hopping in the boil. But go very easy with these aroma hops; 1/4 ounce for a five-gallon batch will achieve the hint you want in order to duplicate the style.

This is a malty, medium-bodied beer that will help soften the bitterness. The medium body and maltiness may be achieved with the use of dextrinous mashes at high temperatures, dextrin malts or light-colored Munich malts. Extract brewers should seek light malt extracts that are not as fermentable and are known for higher terminal gravities.

Fermentation should be done with a quality lager yeast at cool temperatures and lagered cold. Esters and

Old Reinheitsgebot Münchener-Style ~Bier~



IN HIS FAMOUS "REINHEITSGEBOT" PURITY LAW OF 1516, WILLIAM THE ELECTOR OF BAVARIA DECREED THAT BEER MUST NOT CONTAIN "BUGS, STICKS, HAIL, OR ANY OTHER STUFF". THIS BEER HAS BEEN BREWED IN STRICTEST ACCORDANCE WITH HIS STANDARDS, MOSTLY.

Mike Barcalis, Allen Park, Mich.

fruitiness are not desirable, therefore high temperature fermentations must be avoided. Highly attenuative yeasts should be avoided as some residual maltiness is desired. Yeasts that are prone to leaving excessive diacetyl flavor in the finished beer also should be avoided. Fermentation temperatures should be strictly controlled so as to result in only minimal diacetyl in the final beer.

Soft water with a low mineral ion content and low carbonate content is essential to accentuate the malt and hop flavors that are characteristic for this style.

Commercial Examples

I know of no brands available in the United States except those brewed for draft at some brewpubs that specialize in German beer styles. Likely brewpubs: Gordon Biersch Brewing Co., Palo Alto and San Jose, Calif.; Clement Brewing Co., Vernon, N.J.; Alpine Village Hofbrau, Torrance, Calif.; Bayern Brewing Co., Missoula, Mont.; Sudwerk Privatbrauerei Hubsch, Davis, Calif.; Montana Beverage Co., Helena, Mont.; and Stoudt Brewing Co., Adamstown, Pa.

Munich Helles

OG: 1.044-1.052 (11-13 °P)

Alcohol (by volume): 4.5-5.5%

IBUs: 18-25

Color (SRM): 3-5



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Classic Pilsener

DAVE MILLER

Bohemian Pilsener

This brew actually was born out of desperation. The old top-fermented beers of Plzeň in western Bohemia were woefully inconsistent. To remedy this situation a new brewery was built in 1842 and a strain of bottom-fermenting Bavarian yeast was imported for use. The result was so successful that it was quickly imitated throughout central Europe and, with varying degrees of fidelity, the rest of the world. Pilsner Urquell, the original, remains the standard by which this style is measured.

Bohemian Pilsener is pale, malty and well-hopped, yet clean and smooth. The aroma is dominated by Saaz hops. A caramel note often is observed in the flavor. A hint of diacetyl sometimes adds to the impression of complexity and sweetness. Unfortunately, the Bohemian Pilsener sent to this country is intensively pasteurized and because of this treatment—and its age—the brew we get

here often lacks the fresh, bright flavor that it shows closer to home.

Pilsner Urquell has 43 IBUs, which translates into about 11.5 AAUs or HBUs for a 5-gallon batch (assuming 25 percent utilization). However, Plzeň water is very soft—less than 50 ppm total dissolved solids—and if your water is hard, you may pick up harshness if you follow this specification. Bittering hops can be any good “noble” strain, such as Tettnanger or Hallertauer, but stay away from high-alpha varieties that generally impart a rough edge to the flavor. The bittering hops can be added in one or two lots, 60 to 30 minutes before the end of the boil.

The hop aroma of Pilsner Urquell comes from late hopping in the kettle (five to 10 minutes before knockout) with a generous amount of Saaz hops. I suggest 1 to 1 1/2 ounces per five-gallon batch.

The malty character of Bohemian Pilsener is best achieved by supplementing the pale malt with a small proportion (3 to 5 percent) of 10 to 20° L caramel malt. For a full mouth feel use 5 to 10 percent dextrin malt; this also will improve the foam. Extract brewers should use a light-colored malt extract that is not very fermentable in order to get the right degree of fullness and sweetness. Better yet, supplement your extract with grains in a partial mash.

Sulfate is not wanted in Pilseners, so do not use gypsum. Add calcium chloride to the mash if a pH adjustment is needed. Decoction mashing is not necessary, but a protein rest makes it easier to achieve clarity. Run the starch conversion rest at 153 to 155 degrees F (67 to 68.5 degrees C).

Many homebrewers have had bad luck with the Bohemian yeast cultures sold in this country. At Plzeň they actually use four different yeast strains and blend the resulting batches to maintain a consistent flavor. I suggest

Srvatski
Amerikanski



Altoona
Lackawanna

Peekskill
Hamburg

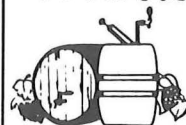
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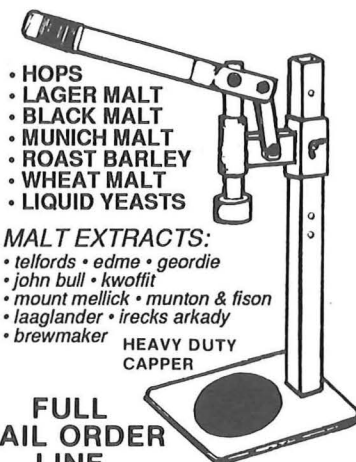
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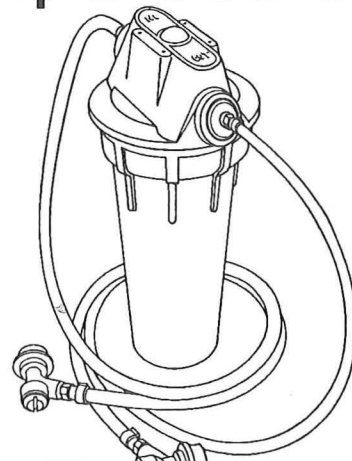
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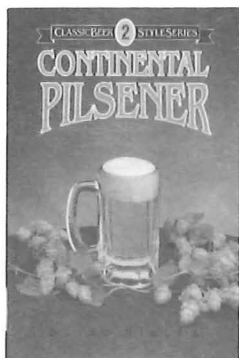
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by David Miller

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using Weihenstephan No. 308 to get that hint of diacetyl so characteristic of Pilsner Urquell. You may even want to adjust the fermentation procedure (i.e., eliminate the diacetyl rest).

In brewing Bohemian Pilsener, aim to reproduce its virtues, not the faults that are a result of pasteurization and oxidation. Be especially careful to avoid aeration at all stages of production, except of course for the cold wort just before or after pitching. Since esters are not wanted, pitch cold—while wort temperatures are 46 to 50 degrees—with a large quantity of fresh, active yeast. Don't neglect to rack the wort off the cold break material (trub) about 12 hours after pitching. This will help avoid the development of stale off-flavors. Store the finished beer in a cool, dark place, preferably a refrigerator.

Specifications for Pilsner Urquell: Original Gravity; 1.049. Terminal Gravity; 1.014. alcohol 4.5 percent (v/v), bitterness 43 IBU (but see text), color 2–5 SRM.

Commercial Examples

Pilsner Urquell
Budvar

Bohemian Pilsener

OG: 1.044–1.056 (11–14 °P)
Alcohol (by volume): 4–5%
IBUs: 35–45
Color (SRM): 3–5

German Pilsener

The Germans are proud of their native beer styles, and with good reason, but they took to Pilsener very quickly, and today almost every brewery in Germany offers a "Pils." These are all-malt beers, as required by the *Reinheitsgebot*, though some big companies take advantage of a legal loophole and use adjuncts in the Pils they export. The German Pilseners generally have simpler, cleaner flavor profile than the Bohemian Pilseners and are lighter in color as well. Body and sweetness are muted. The hop aroma that sets Pilsener apart from other lager beers is very much in evidence, and almost always Saaz hops (imported from Czechoslovakia) are used for the finish.

The hop rate of German Pilseners is usually somewhat lower than for Pilsener Urquell, partly because few German brewers have Plzeň-type water. Nonetheless the beers have a clean, refreshing bitterness. A common specification is 32 to 38 IBUs and this translates into about 8.5 to 10 Homebrew Bitterness Units (assuming 25 percent utilization) per 5-gallon batch. As with Bohemian Pilsener, you can use a higher hop rate if your water is very soft. The best choices for bittering hops are "noble" varieties like Hersbrucker. Hopping should be done 60 to 30

minutes before the end of the boil.

A few German Pilseners are dry hopped, including Warsteiner, but most are finish hopped like Pilsener Urquell. The Germans are just as insistent as the Czechs in their choice of Saaz hops, and they use similar amounts. You should follow their lead.

Grist formulation is similar to Bohemian Pilsener, but the crystal malt may be omitted if you want a drier flavor profile. If you do use it, remember that German Pils is paler than Pilsener Urquell, so only use 10° L crystal malt and don't go over 1/3 pound per 5 gallons. I recommend CaraPils to improve head retention, but go easy (only 1/2 pound per 5 gallons) or the body will be too full for this style.

Most German lager yeasts will make an excellent Pilsener if handled correctly. I have had especially good luck with Weihenstephan 34/70.

The biggest difference between German and Bohemian Pilseners is in their dryness. The German style is fermented out completely and typically has a much lower terminal gravity. To get this, use a low temperature starch conversion rest for your mash, 150 degrees F (65.5 degrees C) or a highly fermentable pale malt extract. Pitch and ferment cool to avoid esters and other fermentation byproducts, but give the beer a few days of rest at 55 to 60 degrees F (13 to 15.5 degrees C) at the end of fermentation to help reduce diacetyl and also to get as complete a fermentation as possible.

Except for these modifications, sound brewing practice for German Pilsener is much the same as for Bohemian, or any other lager beer.

Commercial Examples

Beck's
Aass Pilsner
Pinkus Ur-Pils
Bitburger
Warsteiner
Alpine Village Hofbrau Pilsner
Gordon-Biersch Pils

German Pilsener

OG: 1.044–1.050 (11–12.5 °P)
Alcohol (by volume): 4–5%
IBUs: 30–40
Color (SRM): 2.5–4.0

American Light Lager

DAN FINK

Diet, Light

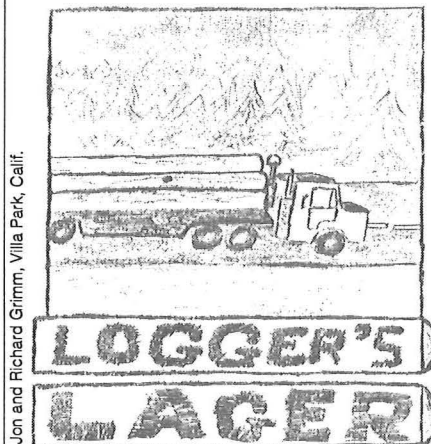
Introduced in 1967, this style is a low calorie, "diet" beer produced only in the United States. It is extremely popular among weight-conscious Americans, though one British writer suggested calories might better be saved by drinking less of a better beer and more honest water.

Diet/light lager is loosely based on (and most would say far removed from) the Czech Pilsener style. It is extremely pale, with no malt flavor or aroma and a very light, watery body. Hop bitterness is below the taste threshold, and no hop flavor or aroma is detectable. Since alcohol contributes 7.1 calories per gram to beer, this style is always low in alcohol, too. It is highly carbonated and served ice-cold.

The biggest problem for homebrewers to duplicate light beer is obtaining the extremely pale color—very close to that of water. When mashing, use lower temperatures to avoid producing unwanted body. Buy the lightest American six-row malt available and exercise extreme caution to avoid oxidation during the runoff and caramelization in the brew kettle, both of which will darken the color. Corn is the usual adjunct, often 50 to 65 percent of the grain. At home, mashing conditions must be carefully controlled to achieve conversion with such a high adjunct ratio.

The usual hop is American Clusters, but keep the level extremely low. After mashing, do as the commercial brewers do—dilute with lots of water down to an original gravity in the low 1.030 range. Or, try high-gravity brewing and dilute after fermentation. Brewing light beer with extract is nearly impossible from a color standpoint. If you must try, get the lightest and lowest-body extract you can find, add lots of water and pray.

Ferment cool with a low-attenuating American lager yeast and lager near freezing temperature. The reduction in body is accomplished by dilution, which can be done before or after fermentation. Either way, use boiled and deaerated water to avoid contamination and oxidation. Higher fermentation temperatures must be avoided, as any ester character is undesirable. The same applies to diacetyl—avoid racking during the



primary ferment and avoid yeasts prone to diacetyl production.

Soft water usually is desirable for this style, especially considering most of the taste is from water! Filtration and counterpressure bottling are called for in this style.

Commercial Examples

Miller Lite
Bud Light
Coors Light

Diet/Light

OG: 1.024–1.040 (6–10 °P)
Alcohol (by volume): 2.9–4.25%
IBUs: 8–15
Color (SRM): 2–4

American Standard

This beer style is truly the "drink of the masses" in America. More than 99 percent of American beer sold is in this style or its cousins, light and premium. Mass produced in mind-boggling quantities by what many craft brewers call "beer factories," different brands of American Standard are similar in flavor profile.

The brews are very pale in color and light in body. Hop bitterness is just at the flavor threshold, as are hop aroma and flavor. Malt aroma and flavor are low. High quantities of adjuncts are used to lighten body, usually corn grits or rice. Use a high-enzyme American six-row malt in the mash, and control mashing temperatures carefully to achieve complete conversion. Low mashing temperatures are desirable to keep the body thin. The adjunct can be as high as 65 percent. Maize, rice or other cereal grains in the flaked form can be dumped right in the mash-tun without cooking. American Clusters hops generally are used in the boil, and a very small amount can be used for flavor and aroma. Avoid oxidation during runoff and caramelization in the kettle—the extremely light color is hard to obtain.

This style also is very difficult to brew from extract. Use the lightest available and avoid caramelization. Get fresh extract syrup because it can darken with age.

Ferment cool with an American lager yeast and lager very cold. No esters or diacetyl are desirable, so choose yeast carefully and watch fermentation temperatures. Soft water is generally used for this style to avoid harsh mineral tastes that would stand out through the bare minimum flavor profile. Filtration and counterpressure bottling are called for to stay true to style.

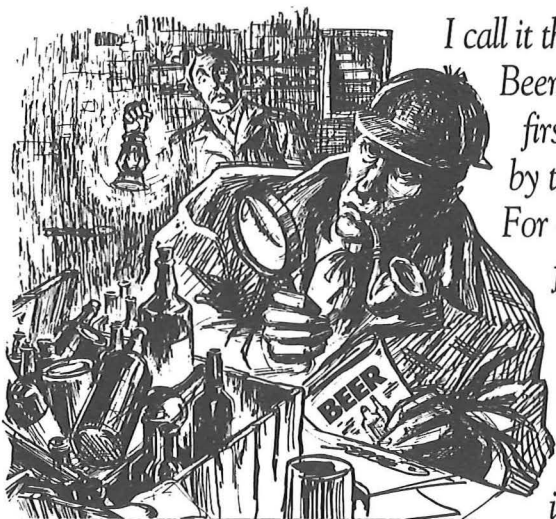
Commercial Examples

Budweiser
Coors
Miller High Life or Genuine Draft
Leinenkugel's
Stroh's

American Standard

OG: 1.040–1.046 (10–11.5 °P)
Alcohol (by volume): 3.8–4.5%
IBUs: 5–17
Color (SRM): 2–4

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American Premium

This style is the best mass-market beer American breweries have to offer. The quality and consistency are truly fine. These beers deserve a great deal more respect than they are often given. Homebrewers would be hard pressed to produce such clean, consistent beer batch after batch, but the big boys do it admirably. The breweries actually call these brands "super premium." The term "premium" was coined in the late 1800s. It did *not* indicate the beers were any better than the usual brands, but referred only to the premium price paid for the privilege of drinking beer produced in another town!

Premium is light in body with low malt flavor and aroma. Hop bitterness is low to medium but usually just above taste threshold. Some hop flavor and aroma are detectable. This very effervescent brew generally is served ice-cold. Many Canadian, Australian and Mexican lagers fall into this category. Some are darker in color with slightly more maltiness and hoppiness than their American counterparts, but still fit the style definition.

This style is usually brewed with a smaller percentage of adjuncts than American standard (25 to 30 percent as opposed to 60 to 65 percent). Sometimes more rice is used than corn or other cereal grains to give the beer a "crisp" taste with no hint of corn in the aroma or flavor, as is often found in standard light lagers. Sometimes more expensive two-row barley is used to supplement standard six-row, and some brewers even use the two-row exclusively in their premium brands. Cluster, Cascade and Willamette hops are the most common in this style, and the hopping rates are often higher than in standard brands. Original gravities also tend to be higher.

"Clean" is the key word when brewing this style. Any problems in mashing, boiling, fermentation or bottling will immediately show in the finished beer—there is very little to hide them! Undesirable characteristics can completely obscure the pure, delicate hop and malt character. Mash at low temperatures to keep the body somewhat thin. Use caution during runoff to avoid oxidizing the hot wort and darkening the color.

Soft water is necessary to avoid mineral harshness. If brewing with extract, use the lightest and freshest available. Go easy on the hops and avoid caramelization during boiling.

Ferment with a high-quality American lager yeast at cool temperatures. Lager and condition very cold. These beers are always crystal clear, so use filtration if you have the equipment. No commercial examples of this style are bottle conditioned, so counterpressure bottling after filtration is true to style.

Commercial Examples

Henry Weinhard's Private Reserve
Michelob
Kirin

American Premium

OG: 1.046–1.050 (11–12.5 °P)
Alcohol (by volume): 4.3–5%
IBUs: 13–23
Color (SRM): 2–4

Dry Beer

A tribute to beer engineering, dry beer was introduced by Asahi Brewing of Japan in 1987 and has been imitated by brewers in Japan and the United States. The alcohol content is at or slightly above the norm for American beers, but early in the production process the beer resembles American malt liquor. Modern genetic engineering techniques are used to produce yeast strains that contain enzymes to change normally unfermentable dextrins to sugar during fermentation. German Diät beer, designed for diabetics, is similar. It is produced without as much manipulation or the addition of enzymes or other chemicals.

Dry beer is very pale in color. It has almost no malt flavor or aroma, low hop flavor or aroma and very little bitterness. There is no malt, hop or bitter aftertaste whatsoever. It is very highly carbonated and crystal clear.

Because this beer must do so much with so little, it is a challenge to brew at home. Standard American six-row malts can be used, along with the usual Clusters hops. Hopping rates are very low. The mash temperature must be extremely low to avoid unfermentable dextrin produc-

tion—between 145 and 150 degrees F (63 to 65.5 degrees C). The addition of enzymes such as alpha-amylase or koji could be attempted at home to reduce dextrins even further, though be careful with dosage if you try this. Too much and you'll end up with something that tastes like carbonated alcoholic water!

As usual for American beers, any mash or kettle procedure that could oxidize the hot wort must be avoided

to keep the color pale.

Ferment cool with the most attenuative lager yeast you can find. Final gravities should hover around 1.003 to 1.005. Filtration and counterpressure bottling are in order. Since the taste and aroma are so sparse, the color and clarity should match. Dilution with water won't work to thin out this style, as the alcohol content should remain fairly high.

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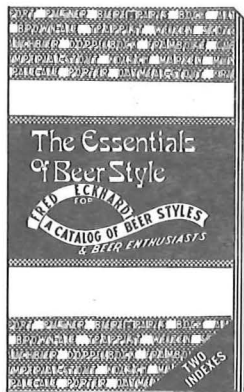


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Commercial Examples

Asahi Dry
Kirin Dry
Michelob Dry

Dry Beer

OG: 1.040–1.050 (10–12.5 °P)
Alcohol (by volume): 4–5%
IBUs: 15–23
Color (SRM): 2–4

American Wheat

This style originated with U.S. microbreweries and brewpubs. They wanted a wheat beer lighter than normal pale ales, but lacking the pun-

gent phenolic, clove flavors and aromas associated with traditional German Weizens. The result is American wheat, recently recognized as a style of its own.

Because the style is so new, interpretations by different brewmasters vary. Certain brewers want *some* clove character, others minimize it, while a very few induce some lactobacillus action to give the beer a tart, acidic character reminiscent of Berliner Weisse. Still others like lots of fruity esters but try to minimize the previous characteristics. Because there is no historical precedent, it's impossible to give specific recommendations for brewing the style.

Generally, only minimal clove-phenolic character is called for, along with substantial fruitiness. To achieve this, wheat malt is used in smaller

amounts than the German styles (20 to 40 percent as opposed to 50 to 75 percent in Germany). Yeast choice makes a big difference. Use a standard ale or lager yeast instead of a weizen yeast to minimize clove character and cooler fermentation temperatures. Contrary to popular belief, the use of wheat malt without a weizen yeast will *not* give clove-phenolic character—it will simply add fruitiness to the taste and aroma.

However, an authentic Weizen yeast at cooler temperatures will give only moderate clove-phenolic character, while an ale yeast at warmer temperatures *won't* do the same, even if the wheat content of the mash is high. Some clove character will carry through, but the phenolic character of a European Weizen will not. The choice is up to the brewer, who must decide how much clove and phenolic character is desired.

Hopping rates are generally very low, but again this varies with the brewmaster's intentions. Hop choice, completely up to the brewer, can be anything from Hallertau Mittelfrüh to Fuggles because hop character is barely detectable in this style.

Protein from wheat malt can be problematic in the finished beer and during runoff, causing haze and stuck mashes. Decoction mashes often are employed, though step infusion techniques can be used if caution is taken to avoid stuck runoffs. This style, unlike its other American counterparts, is relatively simple to produce using malt extract. Various brands of wheat malt extract are available to add to your usual barley malt extract, while other products are preblended with various percentages of wheat. Your choice will depend on the final character you desire in the beer.

Commercial Examples

Anchor Wheat
Millstream Wheat
Pyramid Wheat Ale

American Wheat

OG: 1.030–1.050 (7.5–12.5 °P)
Alcohol (by volume): 4.3–5.5%
IBUs: 5–17
Color (SRM): 2–4

Vienna, Oktoberfest and Märzen

GEORGE J. FIX

Vienna

Vienna is an amber-colored, bottom-fermented beer with special characteristics. It emerged from the 19th century as a major beer style closely associated with Anton Dreher, who had breweries in 20th century Europe. The style did find favor in pre-Prohibition brewing in the Southwest (mainly Texas and Mexico). Some traces of the tradition still exist; however, the style's future primarily lies in the hands of homebrewers and microbrewers who have effectively rescued it from obscurity.

The malt character of this beer is the most important component of its overall flavor profile. It reflects both elegance and softness as well as a measure of complexity. This can be best achieved through use of the finest two-row base and color malts. The former consists of about 75 percent of the grain bill. Top-of-the-line Pilsener malts (the Irek Pils malt) are highly recommended. A variety of colored malts from high-quality, two-row barley is available. Use of "Vienna" or "Munich" malts that come from inferior high-nitrogen barley are not recommended.

Brewhouse procedure also is very important to this style of beer. Rough treatment of wort when it is hot can lead to various flavor instabilities in the finished beer. On the other hand, a well-brewed Vienna can have remarkable flavor stability.

The color of Vienna beer is normally in the range of 8 to 10° L; however, there is a version still brewed by some Mexican breweries where the color is in the 10 to 12° L range. This is achieved with a very small amount of black malt.

Enough malt should be used to give a full body, but one that is not overly satiating nor syrupy. A good starting gravity would be in the range of 1.050 to 1.055 (12.5 to 13.5° Plato). This should yield an alcohol level in the range of 4.1 to 4.5 percent by weight.

Best results are obtained from the exclusive use of aroma hops like Saaz, Styrian Golding and Tettnanger. Generally, a balance of malt and hops is preferred, and this is usually obtained with a bitterness value in the mid-20s. Some versions are hopped at a lower rate, which tends to impart some sweetness to the beer's finish, but this is generally kept to a minimum.

Viennas, like most lagers, should be fermented at cool temperatures and lagered at even lower temperatures. High diacetyl levels are undesirable, so quality lager yeasts should be used that are capable of proper diacetyl reduction. There is a big difference. The malt-derived flavor tends to be stable, while diacetyl carried over after the fermentation often becomes raunchy.

Some versions of the Vienna style have had a pronounced fruity aroma, which is imparted by the use of certain Bohemian yeast strains. They produce high ester levels even in a cold fermentation. This effect has always been controversial, and most

brewers of beers in this style—past and present—try to avoid this effect.

Water with a high sulfate content does not produce the best Vienna beer. Carbonate hardness is welcome. The extra acidity of the colored malts blends well with alkaline materials in such water.

Commercial Examples

Ambier

Vienna

OG: 1.048–1.055 (12–13.5 °P)

Alcohol (by volume): 4.4–6%

IBUs: 22–28

Color: 8–12

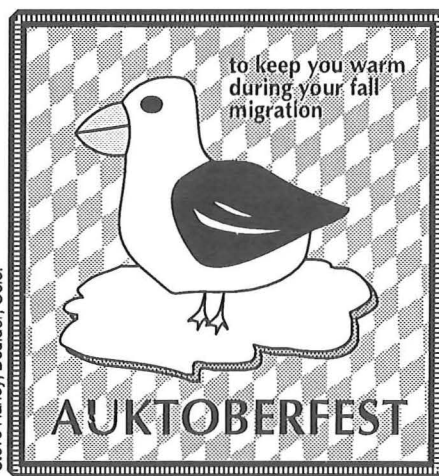
Märzen and Oktoberfest

The term Märzen or Oktoberfest originally referred to a brewing process, not a beer style. In this process, beer was brewed in March, stored in caves during the summer months and served in October when cooler weather

returned. Prior to the introduction of refrigeration, it was the method of choice for any lager beer.

It emerged as a distinct style in the latter part of the 19th century, a time when the popularity of Pilsener beers was exploding. The essential formulation was developed by

Anton Dreher in Vienna. Munich brewers, primarily because of their highly alkaline water, found that Dreher's formulation came out much better than the other "Austro-Hungarian" style brewed in Plzeň, and quickly adopted it. When refrigeration became widely used, lager brewing became possible year round. Nevertheless, the traditional Märzen/Oktoberfest process was retained in Bavaria for their Viennas, and for the large part this is true today. The style tends to do well with extended aging, and it soon was named after this process. The October festival tradition owes its origin to celebrations for the arrival each season of



Steve Harey, Boulder, Colo.

beers in this style.

Comments found in the section on Vienna beer about malt, beer color, hops, water and wort production apply to this style. The starting gravity of the Märzen/Oktoberfest beers were traditionally higher, 1.059 to 1.063 (14 to 16° Plato), as compared to 1.050 to 1.055 (12.5 to 13.5). However, in the post-World War II era they have dropped into the lower range, making the modern Märzen/Oktoberfest a Vienna brewed with the extended aging process. The other comments apply without change. Most notable are the desirability of Pilsener quality pale malts, good color malts from low-nitrogen barley and the preference for aroma hops. The need for gentle treatment of hot wort is even more important for high-gravity ambers than it is for standard Viennas.

The softness and complexity as well as the elegance of flavors that one expects in a good Vienna are enhanced

by the extended aging period. Shorter aging (even up to three to four months) will not do this, and generally the results are not all that different from beers aged for only a few weeks.

Yeast selection is important and most of the lager yeast in the Weihenstephan collection are well suited to the extended aging process, and as a consequence, almost universally used.

In the Märzen/Oktoberfest process, it is traditional to transfer the beer to storage tanks before the fermentation is complete. The fermentation continues, very slowly, over the extended aging period. This leads to beautiful foam even at modest CO₂ levels.

The effects of fermentation byproducts should be completely reduced by the extended fermentation. In fact, off-flavors from high diacetyl levels, high ester levels, and/or phenolic tones can occur only when seri-

ous technical errors have been made in brewing, such as high levels of bacterial infection and/or defective pitching yeast. A striking advantage of the extended aging period is that it gives the yeast an ample opportunity to correct the mistakes it made in the initial fermentation. This will happen only if high-quality pitching yeast is used.

Commercial Examples

Wurzbürger Oktoberfest
Paulaner Oktoberfest
Gosser
Dixie Oktoberfest Draft
Aass Jül Øl
Ayinger Ur-Märzen
Stoudt Oktoberfest

Märzen and Oktoberfest

OG: 1.052–1.064 (13–16 °P)

Alcohol (by volume): 4.8–6.5%

IBUs: 22–28

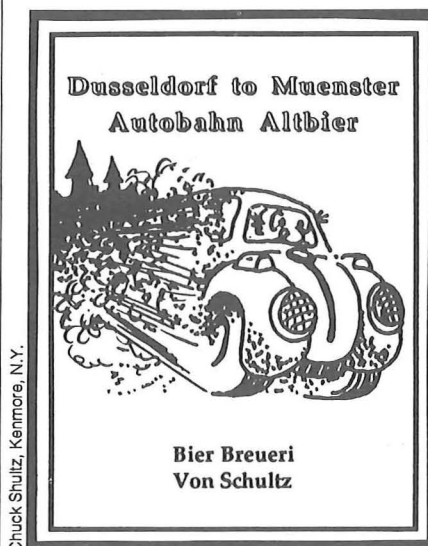
Color: 7–14

German Style Ale

FRED ECKHARDT

Düsseldorf-Style Altbier

The Düsseldorf (North Rhine-Westphalia) style of altbier is among the most popular with American altbier lovers. These top-fermented beers are deep amber to copper in color, light to medium bodied, with an assertive palate and almost aggressive hop levels. Düsseldorf alts are brewed with excessively clean, almost antiseptic yeast strains. None of your Belgian or British yeasts will do for this beer, but Wyeast offers a liquid alt yeast. Color is around 10 to 19 SRM from aromatic Munich and Vienna (gerstenmalz) or amber malt and 15 percent caramel malts (plus about 1 percent black malt) in their makeup, along with regular pale malt. Alt simply means "old," that is, beer fermented in the old style, or top fermented. These beers are fermented warm in the fashion of ales and then aged cold almost as lager



Chuck Shultz, Kenmore, N.Y.

beers. Altbier may, and frequently does, have a portion of wheat in its makeup. This is usually in the neighborhood of 10 to 15 percent (Düsseldorf),

but Pinkus Alt (Münster) has about 40 percent wheat malt. Dortmund alt does not have wheat. The alt styles of Rheinland-Pfalz, and North Rhine-Westphalia are similar to those of Düsseldorf.

Professor Narziss (*Abariss Der Bierbrauerei*) gives an upward step infusion mash sequence: 122 degrees F (50 degrees C), hold for 45 minutes; up to 144 degrees F (62 degrees C) at one degree C per minute, hold 20 minutes; up to 158 degrees F (70 degrees C) at one degree C per minute; hold for conversion and raise to 169 degrees F (76 degrees C) for mash-off over a 2 1/2 hour stretch, with a 1 1/2 to two-hour boil. The German malts used are used in relatively soft water (250 to 300ppm hardness), hence the upward step infusion, but our local brewer here in Portland, Ore., Kurt Widmer, makes a credible altbier in the style of Düsseldorf's Zum Uerige using an upward step infusion on American malts to make his delicious Widmer Alt.

The hop mix is complex and differs with the brewery, but Widmer uses Oregon Perle (10 percent alpha—50gm/20 liter) and Oregon Tettnanger (4 percent alpha—35gm/20 liter) in the following sequence: half the Perle at 15 minutes and the rest after an

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hours' boil. The Tettnangers are added half at five minutes before strike and the balance on strike. Let stand 1/2 hour, rack and cool. You can substitute Northern Brewer or Brewers Gold for the Perle, and Hallertauer, Saaz or Savinja Golding for the Tettnangers.

Narziss recommends a ferment at 60 to 65 degrees F (16 to 18 degrees C) followed by lager storage at 41 degrees F (5 degrees C) under 12 psi pressure for 14 days.

Commercial Examples

St. Stan's Amber
Alaskan Amber
Rubicon Amber Ale
Devil Mountain Iron Horse Alt
Widmer Alt

Düsseldorf-Style Altbier

OG: 1.044-48 (11-12 °P)

Alcohol (by volume): 4.3-5%

IBUs: 25-35

Color (SRM): 10-19

Kölschbier

Kölsch is blond altbier from Köln (Cologne), NordRhein-Westfalen,

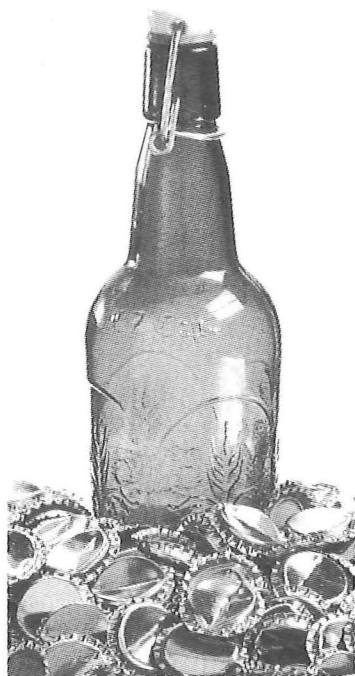
very pale in color with a noticeable but not intense taste profile. Kölsch is an appellation whose parameters are carefully defined by German law: original gravity 1.045 to 1.047; color 3.2 to 5.7 SRM, 16 to 34 bitterness (IBU) from German type hops (Hallertauer, Perle or Spalt); water hardness 450 ppm; primary ferment about three days at 64 to 72 degrees F (18 to 22 degrees C); secondary ferment, four to seven days at 57 to 64 degrees F (14 to 18 degrees C); cold lager another 14 to 40 days. The product must be filtered (but a German court held this was not an absolute requirement if the beer was labeled as unfiltered). Kölschbier has Vienna malt, and up to 20 percent wheat malt plus the usual Pilsen-type along with darker Bavarian and caramel malts in its makeup.

As near as I can tell the proper yeast strain is not available in the United States. It may be purchased from Weihenstephan in Germany (over \$300), and it is possible that the University of California, Davis has such a strain in their yeast bank, but the rest of us will probably have to make do with alt yeast.

Review the notes under the previous section (altbier) for some ideas, but remember this is a pale beer, so pale two-row is the major ingredient along with some Vienna malt (now available from some suppliers), perhaps a bit of caramel malt and possibly some wheat malt too. If you use wheat malt to any extent, the mash sequence followed by Widmer would seem to work: mash-in at 122 degrees F (50 degrees C), hold one hour; raise at one degree C per minute to 158 degrees F (70 degrees C), hold for conversion and mash-off at around 171 degrees F (77 degrees C). Widmer uses two-row and wheat malt in equal parts, but the wheat could be reduced for a Kölsch try. He also uses about 5 percent Munich malt and 2 percent 40°L crystal malt. Hops are 60 g Tettnangers per 20 liters, and 2 g Cascades (4 percent and 7 percent alpha) in a similar hopping system as explained in the altbier section.

The malt extract recipe might include German pale malt extract, up to two pounds Vienna malt (crushed and run through a simple infusion mash starting at 122 degrees F (50 degrees C) and up to 155 degrees F

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(68 degrees C) and hold there for about two hours—don't worry, have a homebrew and relax, nothing is imperative about this, add a dollop of caramel malt (20° L, 4 ounces), and perhaps some wheat syrup. This is not a hoppy beer, remember. Follow the temperature guidelines for the ferment as suggested in the altbier section.

Commercial Examples
Küpfer's Kölsch
Widmer Weizen (Kölsch)

Kölsch
OG: 1.042–1.046 (10.5–11.5 °P)
Alcohol (by volume): 4.4–5%
IBUs: 20–30
Color (SRM): 3.5–5

Cream Ale

FRED ECKHARDT

Cream ale, American lager and lager ale were brewed originally as ale versions of the newly popular, very pale Bohemian (Czechoslovakian) style beer. American brewers invented lager ale, a warm top-fermented ale in the usual 58 to 70 degrees F (15 to 21 degrees C) way, followed by a long, cold lagering period [two to four months at 33 degrees F (0.5 degrees C)] as was done to the Bohemian-style beer. This was during the time when the fragile bottom-fermenting yeast was not yet available all over the country, 1840 to 1865 or so.

The new lager ale style (originally called "lively ale" or "sparkling lager ale") soon was very popular, so popular in fact that later on lager brewers in turn began to imitate this new style of beer by using their bottom-fermenting yeast as an ale yeast for a warm ferment, followed by a cold lager. This new style was also called lager ale, but the brewing industry, recognizing the illegitimate nature of this new "ale," called them "bastard ales."

In order to make these distinctions clear I call this second ale "American ale" because it is an indigenous and unique American

style invented in this country. Both types of beer soon came to be known as "cream ale." The original cream ale was itself a distinctly different style, as blond pale ale, top fermented and brewed with the new very pale malts copied from the style of Bohemia. This new ale type was served rather young in the manner of cask-conditioned brews of the time. This beer was in turn superseded by the new sparkling lager ales, and the name has stuck ever since.

Various commercial breweries have brewed, and continue to brew, this style of beer, and they usually call their beer by one or the other of these names, but without any systematic rhyme or reason. Some of these commercial beers are even combinations of top-fermented and bottom-fermented brews.

By our definition, these are called

Tennessee
Cream Ale

Shake it up and you get butter!

Steve Harley, Boulder, Colo.

either American ale: very pale, warm bottom-fermented beer, cold lagered or, alternately, cream ale: the same beer warm top fermented and cold lagered. Alcohol content is medium, (4.4 to 5.6 percent), and the beer is almost identical to American standard lagers: minimal taste profile, minimal hopping and lacking in hop bouquet, although most examples of this class have slightly higher hop levels and a little more palate fullness than the American standard lager. They use similar adjunct ratios, although it originally was proper to incorporate up to 25 percent dextrose, which was called "grape" sugar in the 19th century, and "corn" sugar during Prohibition.

I don't recommend homebrewers use more than 20 percent dextrose, especially in beers whose major constituent is malt extract. Malt extract beers tend to produce lower pH (more acidic) levels and, when combined with more than 20 percent sugar, results in beers with cidery overtones. American hops such as Cluster are normal, and water hardness usually is over 400 ppm.

Mashing, brewing and fermentation should be similar to that used to make American-style lager beer. The only difference is that a warm ferment of 58 to 70 degrees F (15 to 21 degrees C) should precede the lager aging.

The Brewer's Manual by Nugy, published in 1948, tells us to mash-in at 118 degrees F (48 degrees C) and rest one hour and 15 minutes, then add corn or rice flakes and raise to 149 degrees F (65 degrees C) and expect conversion in 12 minutes. Then mash-off at 167 degrees F (75 degrees C). Boil for 2 1/2 hours and add hops after one hour. Add invert sugar an hour before strike.

Commercial Examples

Genesee Cream Ale
Little Kings Cream Ale
Molson Ale
Labatt's 50 Ale
Weinhard's Light American Ale

Cream Ale

OG: 1.044–1.055 (11–14 °P)
Alcohol (by volume): 4.5–7%
IBUs: 10–22
Color (SRM): 2–4

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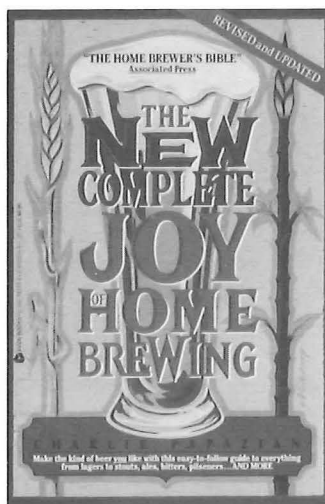
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Fruit Beer

RUSSELL SCHEHRER

This category is fairly non-existent in commercial examples, but I know of few homebrewers who haven't tasted a fruit beer or attempted to make one. This category does not include fruit lambics, the Belgian-style beers, but is somewhat limited to the United States and Canada. The majority of commercial fruit beers in the states are produced by brewpubs, although the micros have made a few.

What fruit to use? A better question is what fruit do you have access to? I haven't met a berry that I haven't tried (or known of someone who has) with mixed results, but that's what a hobby is all about and why people homebrew. Cherries are good because of their wide availability. In this category include the fruit of cactus and the pepper plant (dried peppers I treat as a spice rather than a dried fruit).

In my opinion, any fruit is a candidate for inclusion in a batch of homebrew (including strawberries, kiwi fruit, passion fruit, crabapple, elderberries, gooseberries, even oranges and lemons), although I would use the tart fruits for starters because the sweeter ones tend to ferment out further (with regard to residual fruit flavor after fermentation). The key here is to experiment—there are few styles that allow one such creative license because it is a relatively new style and not highly defined.

What base beer should be used? I lean toward the lighter beers so the character of the fruit (that you just spent good money for) comes forward. Fruit stouts, although they sound great, are usually a waste of fruit. It

might be better to concentrate on making a good stout and making a good fruit beer, which is overpowered by the roasted barleys. Underhop your normal beers if you're using them as a base, because you want the fruit to come through and make a statement without conflict.

When to add the fruit is another good topic. If added to the hot, or

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Mike Carrol, Chicago, Ill.

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boiling, wort you will sterilize the fruit but run the risk of cloudy beer from the pectin it releases and of losing fruit character to the atmosphere. Clean fruit can be added to the fermenter if a vigorous yeast is used, although some of the fruit character will remain with the yeast. Adding to the beer during aging is tricky unless you are positive about freshness and sterility, which is next to impossible with fruit.

There is something to be said

regarding kegging and fruit beers. Kegging allows the beer to not be seen; this is important because fruit beers more readily develop a surface infection that shows up in bottles as a slight white ring at the neck.

Whether making an ale or a lager, use a vigorous yeast. With fruit the risk of infection always is present, so you want an alcohol/CO₂ environment as soon as possible. When adding fruit directly to the fermenter you may want to wait until fermentation is apparent.

To prepare the fruit, pit and crush it whenever possible. If not easily pitted, be sure the pits remain intact, not cut or nicked because these are usually bitter and may change the flavor of the finished product. If an open fermenter is used or the fruit is added to the boiling kettle, then put the fruit into a nylon bag to decrease transfer times. Once the fruit has been fermented it usually is white or pale in color, having had all its juice fermented out. At this point it is wise to remove it or rack to a clean vessel.

Commercial Examples

Emery Pub Raspberry Wheat Ale
Lakefront Klisch Cherry Beer
Marin Raspberry Trail Ale
Rouge Brewing Roguenberry Fruit Ale
San Andreas Apricot Ale
Zelé Lemon Dry

Fruit Beer

OG: 1.030–1.110 (7.5–27.5 °P)
Alcohol (by volume): 2.5–12%
IBUs: 5–70
Color (SRM): 5–50

Herb Beer

RUSSELL SCHEHRER

Herb or spiced beers have been around since the discovery of beer because humans have always played with “additives” to make a better product. Hops did not make an entry into beer making until some time in the 1400s. Both Henry VI and Henry VIII (a lover of spiced beer) outlawed the use of hops in England because they were seen as an adulterant, and the “wicked weed” not only “spoil” the taste of the drink but endangered the lives of people.

Bayberries, ivy berries, ground ivy, customary, strawberry leaves, borage, sweet marjoram, violets, agrimony, coriander, caraway seed, ginger, cinnamon, cloves, ling, mace, sweet-briar leaves, thyme, rosemary and heath all were added at one point or another to make a better and longer-lasting product. In Brunswick there existed a drink called “mum,” a strong ale brewed from wheat malt and flavored with fir, birch, burnet, betony, marjoram, avens, pennyroyal, wild thyme, elder flowers, cardamom seed and barberries.

“Wes hall,” or “Be hale!,” or more loosely, “Health be to you!” was the origin of wassail, which became a style of beer, a spiced beer. “Here we go a wassailing,” that line from the Christmas carol, evolved from the custom of filling the wassail bowl with spiced ale and carrying it from house to house

by young women. After singing appropriate songs outside the house, the master would come out and help himself to a mug of wassail and give the women a small gratuity.

More recently in the United States, spruce beer was popular during the American Revolution and into the mid-1800s. Typically it was made at home (or by soldiers at far stations) when there were no commercial beers



Artist unknown

available, and it had a reputation for preventing scurvy.

Current herb beers usually contain one or all of the following: ginger,

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Brew Free or Die
Beer and Brewing Volume 11



Papers from 13 presentations at the 13th annual National Conference on Quality Beer and Brewing

Edited by Tracy Luyten

cinnamon, cloves, cardamom, orange peel, allspice, anise and nutmeg. I've heard of using dried peppers but have no experience with these; I have always used fresh peppers and the fruit-beer method. All herbs should be ground or chopped. The beer should be underhopped to let the character of the spices come through. The spices will be more noticeable in a lighter beer than a stout, where they will fight with the dark grains for attention. I also suggest using mild versus stronger hops: Cascade, Willamette, Tettnanger or Hallertauer (depending on if you're making ale or lager).

The amount of herbs to use depends on when they are added, the potency of the herbs and the character of the "base" beer. If added to the

boil, some flavor will be boiled away. If there is any "oil" character to the spice then it shouldn't be added at aging because the oils will diminish the head in the final product. If added during fermentation some of the character will be left behind with the yeast, although an oily spice at this point will not influence the head of the final product because the oil will adhere to and flocculate with the yeast.

Perhaps a medium could be struck by throwing part of the herbs at the end of the boil and part into the fermenter. Check the beer and use more upon aging if necessary. If making a lager, use softer water and a good yeast that will take off well; likewise with an ale, although a hard water is beneficial. Ferment at the appropri-

ate temperature for that yeast as the herbs and spices rarely are strong enough to mask warm ferment "off-flavor." I would keep alcohol content lower (1.040 to 1.050 OG) because you don't want the herbs to compete with an alcoholic nose; leave these for the barley wines.

Commercial Examples

Anchor Our Special Ale (on occasional years)

Grant's Spiced Ale

Hale's Christmas Ale

Herb Beer

OG: 1.030–1.110 (7.5–27.5 °P)

Alcohol (by volume): 2.5–12%

IBUs: 5–70

Color (SRM): 5–50

Specialty Beer

QUENTIN B. SMITH

This category undoubtedly gives competition homebrewers the greatest latitude in defining their own beer styles and recipes. The use of special brewing techniques such as sour mashing, white-hot rocks introduced into the wort, special temperature mashes that allow for low-alcohol beers plus other methods can only be left to the imagination. Likewise, special brewing fermentables that add a characteristic note to the beer are especially popular in this group category. Maple sap, molasses, treacle, brown sugar, sorghum, honey, brewers caramel, chocolate and other easily fermentable sugars are some of the more popular ones, but not the only ones, with brewers.

Special grains introduced into the

mash or wort can be oatmeal, rye, triticale, wheat, corn and rice. Nuts of various types such as peanuts, walnuts, hickory and so forth as well as starchy vegetables such as pumpkin, potatoes, yams or sweet potatoes can be turned into fermentable additives with some effort on the part of the homebrewer. An age-old recipe even includes a rooster in the brew!

Specialty beers can be either ales or lagers with the general characteristics of each being well defined in other categories. Ales are fruity, estery and sometimes hoppy. Lagers are clean, crisp and without many fruity overtones. An oatmeal stout, for instance, would have all the aspects of a stout as well as the contribution of the oatmeal (Sam-

uel Smith's Oatmeal Stout, England). An oatmeal beer, on the other hand, would not be subject to any strict style measurements like the stout would be.

A steinbier, one with hot rocks in the wort, would meet the commercial examples of a smoky, burnt butter-scotch-type lager (Rauchenfels Steinbier, Germany). Where commercial examples are produced, the homebrewer might be expected to match the bulk of the unusual traits these beers exhibit. Otherwise no criteria for non-commercial example beers would be established, the sky being the limit. Beer colors, gravities and hop rates are all variable and no requisite guideline prevails.

Fruit and herbs are permissible as incidental accents though not as the primary specialty ingredient, as they have classes of their own. Whatever the primary or specialty ingredient or process is, it will be indicated on the label so the judges can evaluate the beer appropriately.

Commercial Examples

Buffalo Bill's Pumpkin Ale

Capital Gartenbrau Wild Rice Beer

Rauchenfels Steinbier

Stevens Point "Spuds" Beer

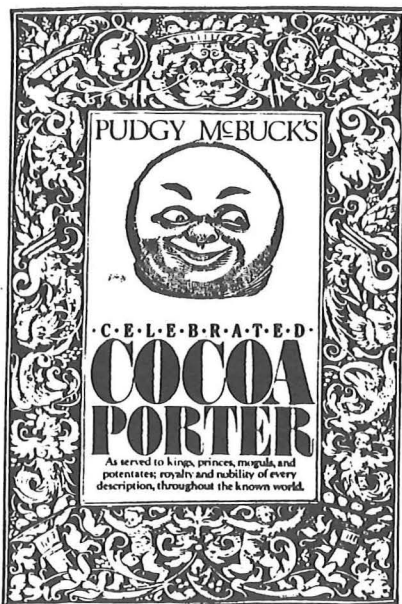
Specialty Beer

OG: 1.030–1.110 (7.5–27.5 °P)

Alcohol (by volume): 2.5–12%

IBUs: 0–100

Color (SRM): 1–100



Smoked

DAN FINK

Bamberg-style Rauchbier

Rauchbier is a truly unique style. Brewed primarily around the Franconian city of Bamberg, the malt is kilned over burning beechwood logs



before mashing. Smoke is prevalent in both the aroma and flavor, and the beer is not to everyone's liking. Locals insist a few liters must be drunk before the taste is acquired. Others swear that nothing goes better with smoked cheddar and smoked sausage than Bamberger Rauchbier.

The brew is similar to the Oktoberfest style, but the orange color can be darker than the smoked malt. The taste is generally sweet and malty with a thick body and low to medium bitterness. Smoke flavor and aroma vary between brewers, but are sometimes assertive and always noticeable. Some hop and malt aroma should show through the smokiness—the key here is balance.

To be true to style, the beer should use German ingredients. This calls for two-row German malt, plus Vienna, Munich or toasted malt for color and toasty flavor. Use "noble" hops (eg., Hallertauer, Tettnanger,

Saaz), hop bitterness low to medium and hop flavor and aroma both low. A malty, toasted sweetness predominates.

The trick comes in imparting just the right amount of smoke aroma and flavor. If overdone, homebrewed examples can taste like charred plywood. Some homebrewers have reported success with liquid smoke extract, but be sure to avoid brands that contain vinegar, preservatives or other additives. The recommended dosage is about two teaspoons liquid smoke to five gallons of beer, added in the kettle. The resulting character is smoky, but is a far cry from the natural beechwood smoke in authentic Bamberger beers.

Some homebrew shops sell imported smoked German malt. Follow their recommendations for the amount to use because the degree of smokiness can vary greatly. This is far and away the best method to get authentic Rauchbier taste in a homebrewed version.

Alternately, malt can be smoked at home. A smoker with a few layers of screen is fastest, though a standard barbecue fitted with a brass screen will serve the purpose. Smoking times and the percentage of smoked to unsmoked grain vary with your tastes and the amount of smoke character you desire. Less smoked malt is needed if it is heavily smoked, while with lightly smoked malts a larger percentage will be needed. A good starting point is to use one pound of heavily smoked homemade malt along with other malt ingredients per 5 gallons of beer. After a test run, adjust the smoke level to suit your tastes. Stick with hardwoods (beechwood if you can find it) when trying to reproduce Bamberg Rauchbier to obtain true, authentic German character.

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Commercial Examples

Kaiserdom Rauchbier
Schlenktra Rauchbier

Bamberg-Style Rauchbier

OG: 1.048–1.052 (12–13 °P)
Alcohol (by volume): 4.3–4.8
IBUs: 20–30
Color (SRM): 10–20

Other Smoked Styles

This style could only have been invented in America! An adventurous few commercial brewers wondered why only German styles could be smoked—and beers like smoked porters were born. Interesting smoking woods like alder also have been used instead of the traditional beechwood.

The commercial beers brewed in this style could be counted on one hand. The American public has yet to develop a real taste for it, so sales generally are slow. But nothing can stop the true connoisseur of smoked beer—the key is to make it at home.

Any style could be smoked, but some would be better suited than others. Beer flavor should always show through the smoke. A smoked Pilsener just wouldn't make it, but a smoked barley wine or old ale might have some potential. A smoked jalapeño raspberry ale? Well, maybe not.

As with Bamberg Rauchbier, a liquid smoke extract could be used, but the character would be much improved by smoking fresh barley malt. A smoker or a barbecue with brass screen can be used, and a variety of woods could be used to impart different flavors. Mesquite, alder, hickory, apple and others present interesting taste possibilities.

Again, the amount of smoked grain used will depend on how highly smoked it is and how much smoke character the brewer desires. Experimentation is the only way to nail down a recipe that works every time.

Commercial Examples

Alaskan Smoked Porter

California Common Beer

FRITZ MAYTAG

Anchor Steam* Look-a-Like

The character of Anchor Steam has changed and developed gradually over the years. For example, we know that in the 1950s Anchor Steam Beer was made with corn syrup as an adjunct, and without caramel malt. Northern Brewer hops have contributed their unique character since the late 1960s. Prior to that, we have no records, but no doubt Anchor Steam Beer varied considerably.

* Note: The term "Steam" beer is trademarked by the Anchor Brewing Co. and may not be used by other breweries for commercial purposes.

In the 1960s and '70s we began to refine and define Anchor Steam Beer as it is today. We added temperature control throughout the process, as well as modern sanitation and other brewing technologies. We picked specific hop varieties and hop-character standards, and selected malt varieties and types to achieve our amber color and malty taste. A homebrewer attempting to duplicate our beer will benefit from some of the following clues:

Anchor Steam Beer has been "all malt" since the late 1960s,

first all six-row, then a blend of mostly six-row with some two-row, and all two-row malt for the last 15 years or so. Our original gravity is about 1.049, and our final apparent gravity is about 1.013. In the mid-1960s we began using some caramel malts in our mash because we believe they added a special malty character. We have used an "upward infusion" mashing process since the end of Prohibition, but over the years it has varied considerably to match the malt varieties.

Brewed in Cincinnati, Ohio by Special to Brewing
V. Harman (Doc) Pado, Cincinnati, N.Y. 1964

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No
AUTHENTIC
Ohio River
STEAM BEER
*A gentle yet brutish
brew, eminently suited to
indiscreet consumption.*

*the beer name
twain would have drunk*

Since the late 1960s or early 1970s we have been using a significant amount of Northern Brewer hops, a modern variety that is a complex cross of American and English hop varieties. We selected Northern Brewer for Anchor Steam Beer because it was almost unknown in this country at that time and would contribute a very distinctive character. We have maintained a bitterness level of about 33 IBU for many years.

We krausen Anchor Steam Beer in a cellar that is maintained in the low 50s (F), and achieve a carbonation level of about 2.8 volumes. On our label you can read that the word "steam" may have referred to the wildness of early beers. No one knows, but if so, this would almost certainly have been due to the inevitable occasional tapping of very warm kegs, because it is unlikely that any brewer would purposely brew beer with a high CO₂ level, for it would be hard to serve and hard to sell!

We pitch at about 60 degrees F (15.5 degrees C), limiting the peak fermentation temperature very carefully and using a bottom-fermenting yeast. For many years we got fresh yeast from a lager brewery for each brew, but with modern techniques of yeast handling we now are able to maintain our own strain.

Commercial Examples

Anchor Steam

Anchor Steam* Look-a-Like

OG: 1.050 (12.4 °P)

Alcohol (by volume): 4.7%

IBUs: 33

Color (SRM): 11-13

California Common Beer

California American brewing tradition is relatively recent, but in general we can say it began with British traditions, then shifted toward the German. Does America have any "types" of beer of its own? Not in the true sense. But several nicknames for beer are known from around the turn of the century. Among these are "swankey," "common beer" and "small beer." No doubt other terms have faded from memory.

We know very little about these names, and we cannot speak of them

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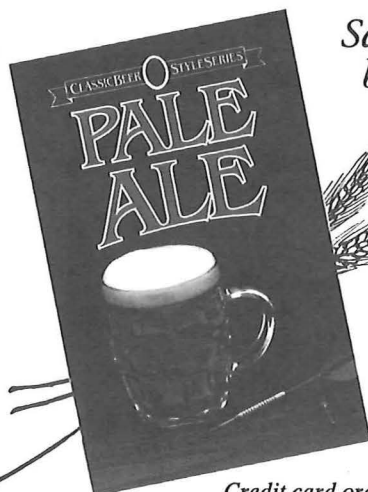
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as types of beer in the usual sense the way we speak of a Pilsener or a stout. A modern equivalent might be "dry" or "cream ale." What will people 100 years from now think these terms meant? "Steam beer"* is another nickname that has had several meanings. One was a nickname for some beers brewed on the West Coast in the late 19th century under widely varying conditions. In modern times "steam beer"* has become the registered

trademark of the Anchor Brewing Co. and has come to mean a particular and distinctive beer that has evolved exclusively at that company for at least 60 years.

These "common beers" were not specific "types" that can be clearly defined, because what scant evidence exists indicates a very wide range of brewing methods and materials, just as we would expect under pioneering and rapidly changing conditions.

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Brewers in those days did not follow textbooks; each would do their best to make and sell beer quickly and cheaply in the absence of modern technology.

It is interesting to note that most evidence of these "common beers" dates from that relatively brief period when lager brewing methods were spreading rapidly. Small local brewers were competing with lager technology and coexisting with it, often in the same brewery. Possibly these curious nicknames were the competing brewers' way of trying to distinguish earlier, more primitive beers—of whatever style—from the more homogeneous and consistent style of lager. This may reflect a merging of the British and German brewing traditions, and the effect of mechanical refrigeration and the other revolutionary brewing technologies of the late 19th century.

A homebrewer wishing to experiment in the "common beer" tradition will have wide brewing latitude and plenty of opportunity for creativity, because it is impossible to describe with any real accuracy beers made so long ago. The brewer can apply common sense and intuition while recalling the position of brewers 100 to 150 years ago. This can provide the satisfaction of mentally recreating a brief period during the transition from the British brewing tradition to the lager tradition, just when modern techniques were

being applied to brewing.

Yeast: "Common beer" may be either top or bottom fermented, for there is no clear guideline. The important thing for authenticity is that the yeast strain be one proven in brewing and not a bread or wine strain. At first all "common beers" would have been made with top-fermenting yeast strains, but it is probable that brewers of various pre-lager beers would have grown more and more likely to replenish their yeast with bottom-fermenting yeast as lager brewing began to thrive in the late 19th century. Bottom-fermenting yeasts would not survive for more than a few batches in a pure form, except with the cool temperature fermentations of lager brewers. But lager yeast appealed to any brewer, because it would have been less contaminated with spoilage bacteria.

Temperature: "Common beer" should probably be fermented at a warmer temperature than a traditional lager. Exact temperature was beyond the control of early brewers, but cool weather was essential because these beers would spoil extremely rapidly if fermented or stored much above 75 degrees F (24 degrees C). Winter beers would have differed significantly from summer beers for this reason, and in many regions brewing probably ceased with the onset of warm weather. A range between 50

degrees to 75 degrees F (10 to 24 degrees C) would seem to be a reasonable estimate. The higher temperatures will tend to yield a more estery character.

Malt Adjuncts: What evidence we have indicates that brewers of "common beers" used all sorts of malts and adjuncts. All-malt beers were by no means standard, so any sugar or grain typical of your area would be highly suitable and give a "common beer" relatively low in alcohol, but it is reasonable to assume that amber or darker versions with slightly higher alcohol also existed. A reasonable standard might be:

Pale Common OG: 1.040–1.045

Amber Common OG: 1.045–1.055

Hops: "Common beers," like all beers of the 19th century, certainly would have had very high hop rates per barrel to help delay spoilage and mask its unpleasant effects. Therefore, an authentic "common beer" should show extremely high bitterness and hop aroma.

Hop varieties play a very important role in determining a beer's character, so for authenticity don't use such modern cultivars as Cascade, Galena or Northern Brewer. Fuggles or Late Cluster would be very good examples of traditional 19th century "European" or "American" hop varieties respectively. They are direct descendants of the field-selected varieties grown in America in the 19th century. Another excellent choice would be Styrians, which are identical to the original Fuggles found by Henry Fuggle in a Golding yard in 1861.

Conditioning: Common sense tells us that a "common beer" should not be filtered, although it might be fined, and it would certainly not be "chill proofed" with any method. "Common beer" probably would have been moderately carbonated by fermentation in each barrel after priming or kraeusening.

Commercial Examples

Atlantic Amber

California Common Beer

OG: 1.040–1.055 (10–14 °P)

Alcohol (by volume): 3.6–5%

IBUs: 35–45

Color: 18–17

German Wheat Beer

ERIC WARNER

Berliner Weisse

Dubbed the Champagne of beers by Napoleon and his troops, this dry and tart, effervescent beer is reminis-

cent of the bubbly stuff in both body and taste. Though Pils is the beer of choice today in Berlin, the style continues to persevere as one of the most unique specialty beers in Europe. Though similar styles of beer may be found in other parts of the world, the name "Berliner Weisse" is protected

by law and only Weissbier produced in Berlin may be sold under this name.

Berliner Weisse has a pronounced sour taste, which isn't surprising as the lactic acid content ranges from 0.25 to 0.8 percent. A light fruity-estery note also is prominent. These flavor elements, combined with the high CO₂ content (3.08–4.12 percent by volume (0.6–0.8 percent by weight) and low starting gravity (1.028–1.032 OG) result in an overall impression of a light-bodied, quenching beer that is very refreshing. The flavor profile of Berliner Weisse is more readily understood when its characteristics are examined. The pH of approximately 3.3 is one of the lowest of any beer. Berliner Weisse is a highly attenuated beer, with final degrees of apparent attenuation sometimes exceeding 100 percent. Because it fits into the category of "Schankbier" and, under German law must have a starting gravity between 1.028 and 1.032 OG, the alcohol content comes in low at 2.8 to 3.4 percent by volume (2.5 to 3.0

percent by weight) Hopping is extremely low; units of bitterness rarely exceed 8. The finished product often is enjoyed "mit schuss," a shot of raspberry or woodruff syrup, as the sharp

acidity of the beer can be a bit much for the uninitiated.

All-grain brewers should use 60 to 75 percent wheat malt and the rest pale barley malt. Hard water is typically used with a high carbonate hardness. This tends to darken the color, so to achieve the "white" tone, efforts should be

made to avoid unnecessary oxygen uptake during the brewing process



(i.e., when the mash or wort is hot). Beta amylase mashing should be observed to yield a highly fermentable wort that is low in dextrins. Crushing the grains too finely could result in lautering problems if high proportions of wheat malt are used. Both grain and extract brewers should boil the wort for two hours to achieve sufficient protein coagulation.

A certain percentage of lactic acid bacteria is added to the culture yeast to obtain the acidity, or in some cases a house yeast containing lactobacillus bacteria also is used. The temperature of the fermentation runs parallel to the production of lactic acid, and if increased acidity is desired, a higher temperature should be chosen. The green beer should be bottled with extract or kraeusen and subjected at first to warmer temperatures, then lagered at cellar temperatures for a few weeks. Try laying a few bottles down for a couple of years. The results will be worth the wait.

Commercial Examples

Berliner Kindl Weisse
Schultheiss Berliner Weisse

Berliner Weisse

OG: 1.028–1.032 (7–8 °P)
Alcohol (by volume): 2.8–3.4%
IBUs: 3–6
Color (SRM): 2–4



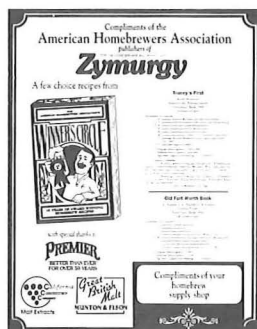
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German-Style Weizen/Weissbier

A beer style that almost completely died out in the 19th century, Hefe-weizen is enjoying a renaissance in Germany and is becoming popular among homebrewers here in North America as well. Weizenbier is brewed almost exclusively in the states of Bavaria and Baden-Württemberg, with the area around Munich being the epicenter of wheat beer brewing. The unique character of Weissbier makes for a love or hate relationship with the drinker, but suffice it to say that many Bavarians and Swabians drink no other beer style.

Weizenbier is pale to golden colored (3 to 9 SRM units), malty, low hopped, very bubbly 3.1 to 5.1 percent by volume (0.6 to 1.0 percent CO₂ by weight) and in some cases slightly sour. The starting gravity of Weizenbiers ranges from 11.0 to 13.5 percent and the alcohol content is somewhere around 5 percent by volume. Weissbiers often are characterized by varying degrees of esterlike fruitiness. The beers are as different

as the words that have been used to describe these flavor notes, but here are a few: cloves, bananas, apples, spicy, tart and rosy. Another characteristic of Weissbier is its phenolic aroma and flavor.

By law, at least 50 percent of the grist must be malted wheat and the rest malted barley. Pale malts help achieve a light color, but many breweries use a proportion of dark or caramel malts to increase flavor and body. Soft to medium-hard water should be used and the most common mash-in temperature is 98.5 degrees F (37 degrees C). Single or double decoction mashes usually are employed to improve the body of the beer, and to help break down troublesome protein fractions present in wheat malt. In any case protein and maltose rests should be observed. A saccharification temperature of 158 to 161.5 degrees F (70 to 72 degrees C) is usually used. Lautering can be troublesome if too much wheat is used. The wort should be boiled for two hours and lightly hopped. There is no point in wasting good aroma hops on a beer that should have a maximum of 18 IBU.

The yeast used for the fermentation is critical in creating the aroma and flavor profile of Weissbier. English or American ale yeast should be avoided, and efforts made to obtain a true Weissbier yeast will be rewarded. There is an old farmer's rule in Bavaria that says the pitching temperature and the fermentation temperature should total 86 degrees F (30 degrees C). The warmer the fermentation, the more fruity and estery character the beer will have. The green beer is bottled after it has reached terminal gravity, with krausen or an extract-yeast mixture. Saving some of the wort for bottling works well, and many breweries add lager yeast to the priming because it clears the beer better. One or two spoonfuls of thick yeast is plenty.

The bottles should be subjected to a warm phase (four to seven days) to make sure the secondary fermentation starts well and then lagered cold, 41 to 46.5 degrees F (5 to 8 degrees C), for about four weeks. The finished beer can be poured with or without the yeast sediment. A German would shudder to see a Weizen served with a lemon slice.

Commercial Examples

Samuel Adams Wheat Beer
Ayinger Export Weissbier
Paulaner Hefe-Weizen
Spaten Club-Weisse
Pinkus Weizen
Wilmer Hefe-Weizen
August Schell Weiss

Weizen/Weissbier

OG: 1.048–1.056 (12–14 °P)
Alcohol (by volume): 4.8–5.4%
IBUs: 10–15
Color (SRM): 3–9

German-style Dunkelweizen

Simply put, this is a dark version of the Weissbier, and indeed, there are many similarities between the two. Unlike its lighter counterpart, the dunkelweizen is brewed almost exclusively in Bavaria, most notably in Lower Bavaria near the Czech border. Dunkelweizen usually is made with pale wheat malt and dark barley malt. Although dark wheat malts do exist, the chances of obtaining such a malt are slim.

Again, the dunkelweizen must contain at least 50 percent wheat malt. A typical grist composition is 50 percent pale wheat malt and 50 percent Munich dark barley malt. Because half of the grist is pale malt, the color usually is a brownish copper or rust brown. The body of this beer is medium to full, and caramel malts can be used to increase this. The CO₂ content of the dunkelweizen is similar to that of the Weissbier. The name "dark" Weizen correctly implies that this is a malt-emphasized beer and hop bitterness should never exceed 15 IBU. Hard water can be used to make this style, but the beer will benefit from the use of soft brewing water. To obtain deeper color and fuller body a two- or three-decoction mash should be employed, with rests at similar temperatures as for Weissbier.

To achieve many of the fruity-estery fermentation byproducts that are desirable in a dunkelweizen, Weissbier yeast should be used along with a warm fermentation of 59 to 68 degrees F (15 to 20 degrees C). If this is done, to quote Michael Jackson, "a delicious complex of fruitiness and maltiness" will be achieved. Bottling and conditioning should be done in similar fashion to Weissbier. Where putting a

lemon slice in Weissbier is a mistake, doing this to dunkelweizen is a sin.

Commercial Examples

Big Time Slam Dunkelweizen
Otto Brothers Dunkel Weizen

Dunkelweizen

OG: 1.048–1.056 (12–14 °P)
Alcohol (by volume): 4.8–5.4%
IBUs: 10–15
Color (SRM): 17–22

Weizenbock

Bock beer refers to any style of German brew that has a starting gravity of at least 16 °Plato, and Weizenbock is no exception. Weizenbock usually impacts the beer world during the holiday season, when many breweries in southern Germany offer this potent beer as a gift to loyal customers. Both blond and dark versions can be found, with many having a color tone that is

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somewhere in between. As is the case with bottom-fermented bocks, the emphasis is placed on the malt character of the beer with the role of the hop being secondary. The sweetness of the Weizenbock, combined with its high alcohol content and ester-fruityness make it the kind of beer best enjoyed in moderate amounts on a cold winter's night.

Weizenbock can be made with pale or light malts. Like other Weizen beers, it must contain at least 50 percent wheat malt by German law. If pale malts are used, the fruity, estery character will come to the fore. Dark malts will yield a rich, malty beer. Whether a dunkelweizen or a dark Weizenbock is being brewed, the use of black, roasted or chocolate malts should be held to a minimum. The brewing wa-

ter can be moderately hard, but the softer the better, as this will benefit the smoothness of the finished beer. A triple decoction mash will yield the richest beer if a darker interpretation of this style is brewed, otherwise select a mash program that is similar to that of a Weissbier or a dunkelweizen. A two-hour boil works best and hop rates should be low (IBU in the finished beer should be less than 18).

A warmer fermentation at 68 degrees F (20 degrees C) will yield a beer that is fruitier and more estery, and if a maltier character is desired a colder fermentation at 59 degrees F (15 degrees C) will work better. Yeast pitching rates should be higher than normal to accommodate for the higher gravity of the wort. Weizenbock is traditionally bottle conditioned in the same

manner that other Weizen beers are, and it will benefit from a long (six to eight weeks) maturation period.

The finished beer should have an alcohol content of at least 6.5 percent by volume and a CO₂ content of around 0.7 percent. This is a beer that is best enjoyed with a full meal, or at least some sausage and bread.

Commercial Examples

Anderson Valley Whamberg Weizenbock
CooperSmith's Wheat Bock
Maritime Pacific Navigator Dark Ale
Marin MYWOK Weizenbock

Weizenbock

OG: 1.064–1.072 (16–18 °P)

Alcohol (by volume): 6.5–7.5%

IBUs: 10–15

Color (SRM): 7–30

Traditional Mead

CHARLIE PAPAIZIAN

The original ale! Yes, the original ale was none other than honey mead. Ancient references to ale predated human knowledge of brewing from grains and with hops. Mead, known in cultures on all inhabited continents, was our first relationship with fermented sugars, alcohol and the gods. Today, using the simplest of techniques and recipes, one can duplicate the traditional pleasures people enjoyed thousands of years ago and continue to enjoy to this day.

Traditional mead in the simplest sense is a naturally fermented alcoholic beverage made from honey, water and yeast. Its character will vary depending primarily on the type of

honey, the ratio of honey to water and the strain of yeast. It can be very dry, medium or sweet, still or naturally carbonated like Champagne or beer. The table gives some idea of the ratio of honey to water necessary to achieve different types of traditional mead using wine or Champagne yeasts.

A variety of wine and Champagne yeasts are suitable for making meads. Generally, strains such as Champagne yeasts more tolerant of alcohol should be used for higher gravity and alcoholic meads. If a sweeter but less alcoholic mead is desirable, beer and ale yeasts can be used because they will stop fermenting as the alcohol content increases, leaving residual



sweetness at relatively low alcohol levels of 9 to 12 percent.

Use filtered or unfiltered unadulterated (some cheap "generic" honey may be dosed with glucose or sucrose syrups) honey and boil with water for 15 minutes to coagulate albuminlike protein and aid in clarification after fermentation. A concentrated honeywort can be boiled and cold water added after boiling to simplify the chilling process. Unboiled honey will retain more of the delicate blossom aroma, but clarification may be more difficult.

Soft water is best for meads. Sanitation is imperative during the fermentation process. Warm fermentations between 70 to 80 degrees F (21 to 26.5 degrees C) are

Honey and Water pounds/total volume of water		original gravity	final gravity
Sparkling:	2 pound/gallon	1.070 – 1.075	0.996
Dry:	2 – 2.5 pound/gallon	up to 1.100 – 1.110	<1.000
Medium:	2.5 – 3 pound/gallon	1.110 – 1.120	1.010 – 1.015
Sweet:	3 – 4 pound/gallon	1.120 – 1.035	1.020 – 1.050
		(more desirable: 1.020 – 1.030)	

desirable. The number one spoiler of fine meads is oxidation. Take extraordinary care not to introduce air/oxygen to the mead after or during fermentation. This requires care when siphoning and bottling.

Still mead may take several weeks to a year to complete the ferment and to prevent undesirable secondary fermentation in the bottle. Five teaspoons of yeast nutrient or one-half teaspoon of yeast extract per 5 gallons can be added to aid fermentation. A general rule with warm fermentation is that when the mead is crystal clear in the fermenter and there is no sign of fermentation to wait another month before bottling. If carbonation is desired prime with one-half cup of sugar as you would beer.

The final product should express the character of honey in the aroma and flavor to some degree. The flavor is generally simple and elegant without any other flavors except for fruity esters produced by yeasts. Some prefer to add acidity in the form of acid blend (a combination of tartaric, citric and malic acid available at wine making supply stores) at an approximate dose of three-quarters to one teaspoon per gallon. This may give the impression of a slightly fruitier, more drinkable mead. Acidity also tends to mask the flavor and "heat" of alcohol. Aging in or with oak for a period of time can enhance the character of traditional mead, especially the medium and sweet styles.

Generally, with traditional unflavored mead, it is totally drinkable and a fine mead indeed as soon as it has cleared. Dark honeys if used are best reserved for medium to sweet-flavored meads.

Commercial Examples

Traditional meads are available on a very limited basis, often sitting on the shelves of your beverage store for ages, thus suffering from oxidation and other spoilage. Beware of wet paper/cardboard, rotten vegetable or sherrylike aromas, signs of old, oxidized mead.

Some good bets when found are:

Havill's Mazer Mead produced in New Zealand and available in

the United States on a limited basis.

Tej, marketed as an "Ethiopian honey wine" found in some Ethiopian restaurants. One good medium sweet *tej* is produced (or was five years ago) in London, Ontario, Canada.

Polish specialty stores selling wines are likely to carry Polish

meads, of which I've had some very good ones.

I am sorry to say that I cannot recommend any traditional meads made in the United States, as all of the ones I have tasted have been either oxidized, excessively acidic or high in sulfur dioxide. But the situation should change for the better by the end of 1991 when several new meaderies are scheduled to open.

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Melomel

CHARLIE PAPAZIAN

Having been popular for centuries, flavored mead is nothing new, except that brewers are discovering its pleasures and variety with increasing enthusiasm. In some ways, it is easier to make a good flavored mead because the flavor offsets any negative nuances produced by fermentation or handling.

Flavored meads, like traditional meads, can be dry, medium, sweet, still or sparkling. The guidelines for strength and sweetness are similar to those outlined in the section on traditional meads.

Melomel is the name given to fruit-flavored meads. *Cyser* is a melomel made with apple juice and honey. *Clarre* or *pymment* are a melomel made with grapes or grape juice.

Metheglin is a traditional or fruit-flavored mead that is flavored with spices or herbs.

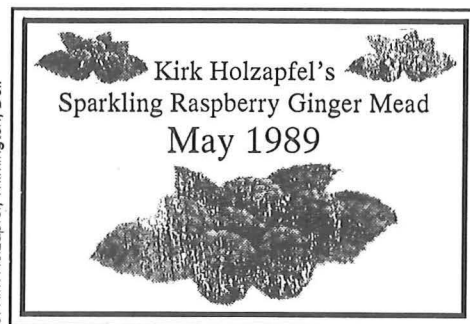
Braggat is a beer-mead or ale-mead made with malted barley, hops and a generous dose of honey.

Melomels can be made with whole fruit, juice or concentrated syrups, which usually are added after the initial boiling of the honey-wort, but not brought back to a boil. If fruit is boiled pectin is *set*. This means your mead may have a pectin haze that will take years to clear naturally. Clarification can be aided by adding pectin enzyme during fermentation. It is desirable to pasteurize whole fruit and juice to eliminate unwanted bacteria and wild yeasts. This can be accomplished by holding the honey-wort and crushed fruit at a temperature of about 160 degrees F (71 degrees C) for about 20 to 30 minutes.

Whole fruit should be fermented in a vessel with plenty of head room. After primary fermentation of about one to two weeks the flavored mead can be transferred to a second fermenter. Take care to minimize the addition of air.

Some examples of herbs and spices popular with meadmakers are: ginger, easy on the hops, cinnamon, nutmeg, clove, orange peel, allspice, anise, coriander and lemon grass. Sweet chocolate mead anyone?

Examples of fruit are apples, pears, red or black raspberries, blueberries (use enough), cherries, prickly pear (exception: boil to reduce mucilaginousness), plums, strawberries, peaches, mangoes and passion fruit. I hope no one dares to make mead from the dreaded tropical durian



fruit! (Even though I like durian.) Fruit-flavored meads are best expressed when they are medium to sweet in flavor. An extremely dry fruit mead often does not express the ingredients to advantage.

Flavored meads should echo the character of the added ingredients. An exception to this notion could be when a combination of ingredients blends synergistically to produce a flavor not related to the herbs or fruits added. In most cases flavored meads also should express a character of honey in the aroma and flavor.

Spoilage character must be avoided as discussed in the section on traditional meads.

Because the complexity and tannin content lent by the herbs, spices or fruits, flavored meads often improve with aging, which will reduce the harsh, astringent tannic character.

Anyone for a lambic kriek mead?

Commercial fruit-flavored meads are almost non-existent. Beware of imitations. Read the labels of so-called cysers and melomels carefully. Sometimes honey is simply added to a cider or fruit-flavored wine and called mead.

Commercial Examples

None known

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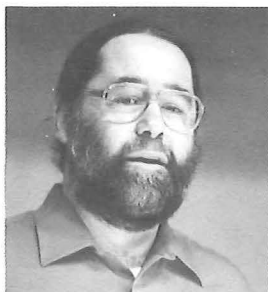
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About the Authors

Byron Burch

Byron Burch, an internationally recognized expert in homebrewing and winemaking, has been teaching since 1972. He owns Great Fermentations of Santa Rosa and is a member of the five-time national champion Sonoma Beerocrats Homebrewing Society. Burch's first book, *Quality Brewing*, was a major influence in the growth of the American homebrew movement during the 1970s and early 1980s. Together with *Brewing Quality Beers* (1986), it sold more than 140,000 copies. Burch has addressed AHA and Home Wine and Beer Trade Association national conferences and is a frequent contributor to *zymurgy*. He has served on the Beer Judge Certification Committee for the past five years.



Victor Ecimovich III

Victor Ecimovich III started his education as an engineering student and homebrewer in Chicago. He studied brewing technology at Siebel Institute. For two years he was brewer at Millstream Brewing Co., Amana, Iowa, then was head brewer for nearly two years at Goose Island Brewing Co., Chicago. He now is an independent consultant for the brewing industry.



Fred Eckhardt

Fred Eckhardt is a Portland, Ore., beer historian, homebrewer and beer enthusiast. He has been brewing and writing about beer since 1969. Eckhardt is one of America's most knowledgeable beer writers, with columns in the *Portland Oregonian* and *All About Beer*. He contributes regularly to *zymurgy* and *American Brewer*.



Dan Fink

Dan Fink is *zymurgy* news editor and staff writer. He has been brewing for six years, concocting large batches of bizarre beers and meads at his mountain cabin high in the Colorado Rockies.



Dr. George Fix

George Fix, Ph.D., Arlington, Texas, has served as brewing consultant to Straub Brewing Co., and Hirsch Brauerei in Germany. He is the author of *Principles of Brewing Science* and co-author of *Vienna, Märzen, Oktoberfest*, published by Brewers Publications.



Stephen Foster

Stephen Foster was born in England on a hop farm. He lives in Fort Collins, Colo., with his wife and two children, Fiona and Hamilton, who aren't old enough to brew but help out whenever they get close enough!



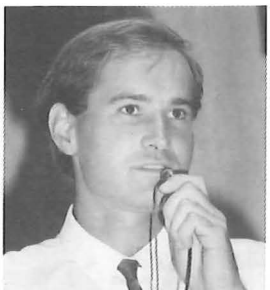
Paddy Giffen

Padraic Giffen has won numerous prizes in homebrew competitions nationwide. A homebrewer since 1983, he is a certified judge in the BJCP and is employed at Great Fermentations of Santa Rosa. Giffen has a bachelor's degree in computer science from Sonoma State University. He is the assistant brewer for Marin Brewing Co. in Larkspur, Calif.



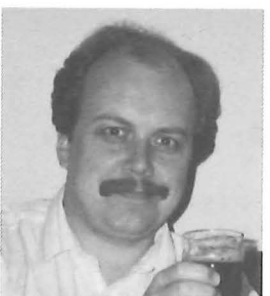
Jean-Xavier Guinard, M.S., Ph.D.

Jean-Xavier Guinard is a native of France, where he earned his food engineering degree. He has worked for both the wine and beer industries in Europe. Guinard earned his Ph.D. in microbiology at the University of California, Davis, where he teaches sensory science and brewing science. He is the author of many scientific publications on sensory science, brewing, enology and microbiology, as well as the book, *Lambic*, from Brewers Publications.



Don Hoag

Don Hoag, a homebrewer since 1982, is a founding member of the Northern Ale Stars homebrew club in Minnesota. A member of the AHA Board of Advisers, he has won many ribbons in national competitions. He is a frequent contributor to *zymurgy* and has taught since 1984.



Michael Jackson

Michael Jackson's 1977 book, *The World Guide to Beer*, was the first major study of the world's brewing styles. This book, which has been described as "the Bible of beer," was published in revised edition in 1988 by Running Press of Philadelphia. Jackson's *Simon and Schuster Pocket Guide to Beer* is in its fourth edition. Both books are heavily used by homebrewers. Jackson's TV documentary series, "The Beer Hunter," is scheduled for rebroadcast on the Discovery Channel later this year. The series won the 1991 Glenfiddich Award for the best television program dealing with food or drink. A few years earlier Jackson was the first winner of the Institute for Brewing Studies Recognition Award. He lives in London and travels internationally.



Fritz Maytag

Fritz Maytag is the president and Brewmaster of Anchor Brewing Co. in San Francisco. His other business activities include owner, York Creek Vineyards, St. Helena, Calif.; chairman of the board, Maytag Dairy Farms, Newton, Iowa; director of the Brewers' Association of America and director of the Beer Institute. He serves on several civic and educational boards, including Grinnell College.



Dave Miller

Dave Miller is the author of *Continental Pilsener* (Brewers Publications, 1990) and *The Complete Handbook of Home Brewing* (Storey Communications, 1988). He recently was appointed Brewmaster of the St. Louis Brewing Co., scheduled to open in September.



Greg Noonan

Greg Noonan is the Brewmaster at the Vermont Pub and Brewery in Burlington, Vt., where he can be found washing glasses, plunging toilets and avoiding salespeople. A homebrewer turned microbrewer, Greg is the author of *Brewing Lager Beer* (Brewers Publications, 1986) and numerous articles for *zymurgy*, *The New Brewer*, and *American Brewer*. An expert on beer styles and proven practice, he still maintains a homebrewer's interest in creative brewing and experimentation.



David Norton

David Norton has been brewing beer at home for eight and one-half years. He has been a nationally certified master beer judge for two years and is on the AHA Board of Advisers. He is employed as a firefighter for the city of Kenosha, Wis., and owns Nort's Worts homebrew shop.



Charlie Papazian

Charlie Papazian is the founding president of the Association of Brewers, which includes the American Homebrewers Association, Brewers Publications, the Institute for Brewing Studies and the Great American Beer Festival. He is also the publisher of *zymurgy* and *The New Brewer* magazines. Author of *The New Complete Joy of Home Brewing* (Avon, 1991), he is an active member of the American Society of Brewing Chemists and an allied member of the Master Brewers Association of the Americas.



Darryl Richman

Darryl Richman has been brewing for six years, with time out to check up on what others are doing. He is the newsletter editor of the world's oldest homebrew club—the Maltose Falcons. He spends his time working as a "techno-weenie" and running his garage brewery (*Ye Olde Craftie Foxxe* or *Der Schlaue Fuchs Altbrauerei*, depending on the style.)



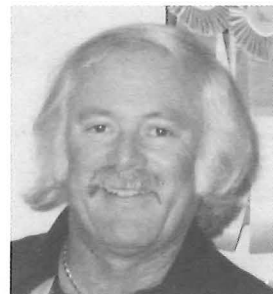
Russell S. Schehrer

Russ Schehrer's brewing career started in Charlie Papazian's kitchen during a 1981 homebrewing course taught through the Boulder Free School. In 1984 Schehrer started winning awards at the AHA competition and in 1985 was named Homebrewer of the Year. In 1987 he joined a couple of unemployed geologists in starting Colorado's first brewpub, the Wynkoop Brewing Co. in Denver. Schehrer has designed brewpubs in Fort Collins and Vail, Colo., and has given training assistance at a micro in Fort Collins and Nebraska's first brewpub.



Quentin B. Smith

Quentin B. Smith is an accountant working toward a Ph.D. in business management. He has won an award in every brewing competition entered with his all-grain beers.



Eric Warner

Eric Warner, Diplom-Brau-meister, recently graduated from the Technical University of Munich in Weihenstephan, where he studied brewing science. A fan of Weissbier, he has worked in wheat-beer breweries in Germany, homebrewed his own Weissbiers and is writing a book, *German Wheat Beers*, for the Brewers Publications Classic Beer Style Series. Warner is head consultant for Blue River Brewing Consultants and lives in Lafayette, Colo.



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* Note: The term "steam" beer is trademarked by the Anchor Brewing Co. and may not be used by other breweries for commercial purposes.

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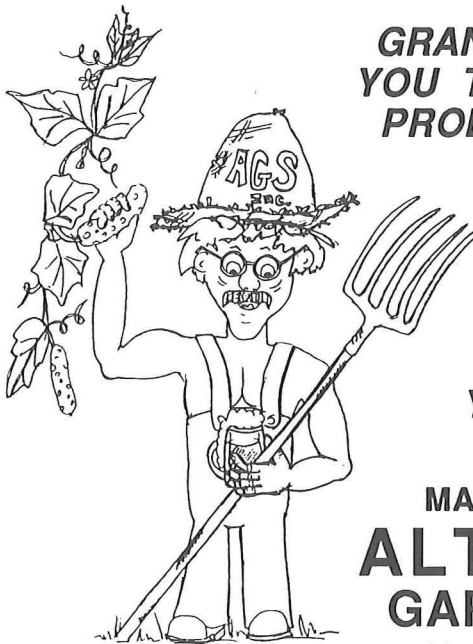
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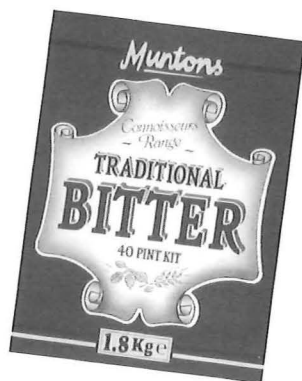
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Matching Kits to Beer Styles

This table lists commercial brewing kits by beer style. Using the kits is a way to brew specific categories outlined in *zymurgy's* "Treasury of Beer Styles" section. Happy brewing!



ALES

Barley wine

Barley Wine

John Bull

Brown ale

Old Bruin (Old Brown-Bear)

Brewferm

Shire Mild

Brewmaker

Northumberland Brown Ale

Brewmaker

True Brew Continental Dark

Crosby & Baker

True Brew Brown Ale

Crosby & Baker

Mild

Geordie

Northern Brown Ale

Ironmaster

Kwoffit Club Mild

Itona

Kwoffit Traditional

Itona

Tyneside Brown

John Bull

Brown Ale

Mountmellick

Classic Pilsener

Bavarian Pilsner

Glenbrew

Dry stout

Irish Type Stout

Brewmaker

Stout

Coopers

True Brew Irish Stout

Crosby & Baker

Stout

John Bull

Famous Irish Stout

Mountmellick

Export Stout

Munton & Fison

Stout

Munton & Fison

English and Scottish bitter

Traditional Bitter

Brewmaker

Yorkshire Bitter

Brewmaker

Extra Strong Bitter

Brewmaker

Victorian Bitter

Brewmaker

Strong Export Bitter

Brewmaker

Scottish Heavy

Brewmaker

Bitter Draught

Coopers

True Brew Bitter Ale

Crosby & Baker

Brewcraft Traditional Bitter

Edme

Arkell's Strong Bitter

Edme

Dog Bolter

Edme

Bruce's Bitter

Edme

Tom Caxton Supersystem

Edme

Yorkshire Bitter

Edme

Tom Caxton Supersystem

Edme

Best Bitter

Edme

Tom Caxton Supersystem

Edme

Export Bitter

Edme

Superbrew English Bitter

Edme

Superbrew Export Bitter

Edme

Bitter

Geordie

Scottish Export

Geordie

Yorkshire Bitter

Geordie

Scottish Bitter

Glenbrew

Scottish Heavy Ale 80%

Glenbrew

Scottish Export

Glenbrew

Special Ale 70%

Glenbrew

Bitter Ale

Glenbrew

Kwoffit Bitter

Itona

Kwoffit Traditional

Itona

Master Class Bitter

John Bull

Traditional Bitter

John Bull

IPA Bitter

Munton & Fison

Traditional Bitter

Munton & Fison

Yorkshire Bitter

Munton & Fison

Australian Draught Ale

Munton & Fison

Premium English Ale

Munton & Fison

English and Scottish strong ale

Superbrew Strong Ale

Edme

Original Extra Strong

Geordie

Traditional Strong Ale

Laaglander

Old Ale

Munton & Fison

India pale ale

True Brew India Pale Ale

Crosby & Baker



Pale ale

India Pale Ale (IPA)
Northern Original Export Ale
Real Ale
True Brew Continental Light
True Brew Amber
Superbrew Canadian Ale
Imperial Pale Ale
British Special Ale
Canadian Ale
American Light
Kwoffit Mixed
Canadian Beer
English Ale
Australian Beer
Canadian Recipe
Irish Ale
Export Ale
Premium
Premium Canadian Ale
Amber

Brewmaker
Brewmaker
Coopers
Crosby & Baker
Crosby & Baker
Edme
Ironmaster
Ironmaster
Ironmaster
Ironmaster
Itona
John Bull
John Bull
John Bull
John Bull
Laaglander
Mountmellick
Munton & Fison
Munton & Fison
SPI

Porter

True Brew Porter
Porter

Crosby & Baker
Ironmaster

Stout

Coopers Stout
Superbrew Stout
Irish Stout
Kwoffit Irish Stout
Kwoffit Traditional
Stout
Irish Stout

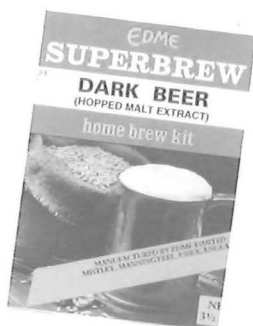
Coopers
Edme
Glenbrew
Itona
Itona
John Bull
Laaglander

LAGERS

American dark

Superbrew Dark Malt Extract
Dutch Dark Beer
Dark

Edme
Laaglander
SPI



American light lager

Australian Style Lager
Dry
Lager
American Beer
American Lite
Dry Lager
American Light
Premium Canadian Lager
Premium Canadian Light
Superbrau-Canadian Lager

Brewmart
Brewmart
Coopers
John Bull
John Bull
John Bull
John Bull
Munton & Fison
Munton & Fison
Munton & Fison
SPI

American light lager (dry)

Superbrew Pale Lager

Edme

American light lager (premium)

Superbrew Canadian Pale Lager
Kwoffit Kangabrew
Australian Lager

Edme
Itona
Munton & Fison

Bock

True Brew Bock
Bock

Crosby & Baker
Munton & Fison

Classic Pilsener

Pilsner
American Style
Pilsner Lager
Special Pilsner Brew
Danish Style Pils
True Brew Pilsner
Brewcraft Pilsner Lager
Arkell's Keller Pilsner Lager
Superbrew Canadian
Pilsner Lager
Tom Caxton Supersystem
Pilsner Lager
Scottish Pilsner Lager
European Pale Pilsner
Master Class Pilsner
Export Pilsner
Export Pilsner
Pilsner
Premium Pilsner

Brewferm
Brewmaker
Brewmaker
Brewmart
Brewmart
Crosby & Baker
Edme
Edme
Edme
Edme
Edme
Glenbrew
Ironmaster
John Bull
John Bull
Munton & Fison
Munton & Fison
Munton & Fison



Dortmund/export

Original Lager	Brewmaker
Dutch Style Lager	Brewmart
Danish Lager	Doric International
Superbrew Export Lager	Edme
Lager	Geordie
Scottish Lager	Glenbrew
British Special Lager	Ironmaster
Kwoffit Hofstar Lager	Itona
Kwoffit Traditional	Itona
Master Class Lager	John Bull
Lager	John Bull
Dutch Light Beer	Laaglander
Lager	Munton & Fison
Continental Lager	Munton & Fison

Munich helles

Tom Caxton Supersystem	
Pilsner Lager	Edme
Extra Pale Lager	Ironmaster
Lager	John Bull
Light Lager	Mountmellick
Blonde	Munton & Fison

MIXED STYLE (LAGER-ALE)

German wheat beer

Wheat Beer	Munton & Fison
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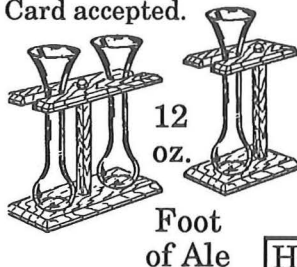
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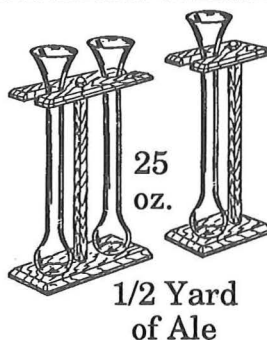
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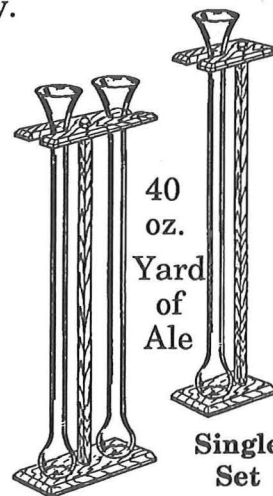
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WINNERS CIRCLE

DAN FINK

America's Best, 1991



ere they are—the recipes that won first-place prizes in the 1991 American Homebrewers Association National Homebrew Competition. The competition drew 1,626 entries, showing continued growth from last year. First-round judging took place in Boulder, Colo.; Boston, Mass.; and San Francisco, Calif. The second and best-of-show rounds were judged at the AHA National Conference in Manchester, N.H. Entries rolled in from Canada, Germany, Japan and Sweden.

This year the six brewers who won prize trips for their first-place entries will travel to England, Norway, Vermont, Washington state, Milwaukee and Chicago. In addition, Jim Post, Homebrewer of the Year, won a trip to the Great American Beer Festival Oct. 4 and 5 in Denver. His name will be added to the copper mash-tun Homebrewer of the Year trophy sponsored by Munton & Fison.

Pale ale again was the most popular category, drawing 176 entries. Last year pale ale was split into three groups, old ale, India pale ale and bitter. This year the category included classic pale ale, India pale ale and American pale ale. Bitter and old ale were judged separately. Stout drew the second most entries, 142, up from 131 in 1990. Bock brought in 97 entries, down from 109 last year.

The Sonoma Beerocrats once again won the Club High Point trophy sponsored by DeFalco's Wine & House Beer in Dallas, Texas, by amassing 22 points. The Maltose Falcons took second with 11 points, the Boston Wort Processors had 10, and the Foam Rangers and Unfermentables tied for fourth with nine. Clubs receive points for each member who places first, second or third in the AHA Nationals and in AHA club competitions.

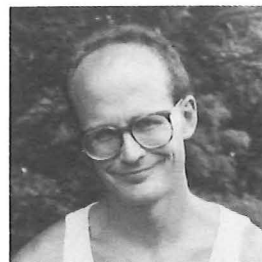
The recipes for first-place brown ale, bitter and pale ale were not available at press time and will appear in *zymurgy* (Winter 1991, Vol. 14, No. 5).

BAVARIAN DARK

Dave Line Memorial Bavarian Dark Trophy
Crosby & Baker, Westport, Massachusetts

Round-trip travel and accommodations were awarded to Homebrewer of the Year Jim Post to visit the Great American Beer Festival, Denver, Oct. 4 and 5. He will enjoy two nights of fine beer tasting as the guest of the Great American Beer Festival X.

Homebrewer of the Year Award
1991 Best of Show
Miniature Copper Mash-Tun Trophy
Munton & Fison, England



"Jamie Beer"
(Munich Dunkel)
First Place
Jim Post
Newtown, Connecticut

Ingredients for 5 gallons

- 12 1/2 pounds Munton and Fison pale two-row malt
- 2 pounds William's caramel malt
- 3 ounces William's dark dry Australian malt extract
- 3 ounces Mount Hood hops (60 minutes)
- 2 tablespoons calcium carbonate
- 2 tablespoons Irish moss
- New England Brewing Co. lager yeast culture

- Original specific gravity: 1.052
- Terminal specific gravity: 1.012
- Boiling time: 60 minutes
- Primary fermentation: 24 days at 55 degrees F (13 degrees C) in glass
- Age when judged (since bottling): two months

Brewer's specifics

All grains mashed in a single-step infusion at 158 degrees F (70 degrees C) until conversion was complete.

Judges' comments

"Malty with chocolate flavor coming through. Well-balanced, a little watery. Very good brew, nice balance with malt."

"Aroma is nutty, malty, clean, balanced and interesting—perfect! Well-balanced, full flavor, a little vegetal. Good nutty flavors, appropriate bitterness. A well-crafted beer, clean and almost perfect for style. A touch watery, and maybe needs a touch more chocolate malt."

BARLEY WINE

Edme Centenary Barley Wine Trophy
Edme Ltd., Mistley, Manningtree, England

Round-trip travel and accommodations were awarded to Robert Grossman to visit the prize sponsor, Young & Co.'s Ramrod Brewery in London.

"Old Kortholt"

First Place

Robert Grossman and John Hood
Haddon Heights, New Jersey

Ingredients for 5 gallons

- 8 pounds Alexander's malt extract syrup
 - 5 pounds Great Fermentations light dry malt extract
 - 3 1/2 pounds English malt
 - 2 1/2 pounds wheat malt
 - 1 pound Munich malt
 - 6 ounces dextrin malt
 - 5 ounces chocolate malt
 - 5 ounces crystal malt
 - 2 ounces Eroica hops (60 minutes)
 - 1 1/2 ounces Tettnanger hops (30 minutes)
 - 1/2 ounce Tettnanger hops (after boil)
 - 1 1/4 ounces Cascade hops (after boil)
 - Red Star Champagne yeast (dry)
 - 1 cup light malt extract to prime
- Original specific gravity: 1.120
 - Terminal specific gravity: 1.040
 - Boiling time: 60 minutes

- Primary fermentation: 12 days at 65 degrees F (18.5 degrees C) in glass
- Secondary fermentation: four weeks at 65 degrees F (18.5 degrees C) in glass
- Age when judged (since bottling): 14 months

Brewers' specifics

Mashed grains in an upward infusion mash. Held at 122 degrees F (50 degrees C) for 30 minutes. Raised temperature to 150 degrees F (65.5 degrees C) and held for 15 minutes. Raised temperature to 158 degrees F (70 degrees C) and held for 15 minutes, then sparged.

Judges' comments

"Malty, alcoholic aroma—very nice. Nice amber-red color, small head but long-lasting. Nice lingering after-taste. Body could be fuller. Nice effort!"

"Very nice, complex nose. Excellent clarity, good head, very nice color. Well-balanced throughout—nice malt up front dissolves into smooth middle and finish. Very nice mouthfeel, very appropriate. Excellent job, great beer!"

BELGIAN-STYLE SPECIALTY

Chimay Award by Manneken-Brussel Imports
Manneken-Brussel Imports Inc., Austin, Texas



"She Will"
(Trappist ale)
First Place
Mark Richmond
Springfield, Ohio

Ingredients for 5 gallons

- 8 pounds Munton and Fison light dry malt extract
 - 2 pounds two-row malt
 - 1/2 pound Munich malt
 - 1/2 pound wheat malt
 - 7 ounces candy sugar
 - 3 ounces Hallertauer hops, 4 percent alpha acid (60 minutes)
 - 1 ounce Tettnanger hops, 3.8 percent alpha acid (60 minutes)
 - 1 ounce Saaz hops, 3 percent alpha acid (30 minutes)
 - 1/2 ounce Centennial hops, 12 percent alpha acid (two minutes)
 - cultured Chimay yeast in a 1-quart starter
 - 3/4 cup corn sugar to prime
- Original specific gravity: 1.084
 - Terminal specific gravity: not taken
 - Boiling time: 90 minutes
 - Primary fermentation: 17 days at 60 degrees F (15.5 degrees C) in glass
 - Age when judged (since bottling): four months

Jim Post

1991 Homebrewer of the Year

Jim Post of Newtown, Conn., was named 1991 Homebrewer of the Year at the AHA National Competition in Manchester, N.H. Post's "Jamie Beer," a Munich Dunkel, was awarded best of show, beating out 24 other contenders. Post is a member of the Beer Brewers of Central Connecticut.

Though 1991 marked Post's first year in the Nationals, he has won numerous awards at competitions nationwide, including first in stout at the 1990 New England Regionals and first in bock at the 1990 Northern New England Regionals. He has been entering competitions since 1984, when he was a member of the Maltose Falcons in Southern California.

Post called his winning beer an experimental batch. A local microbrewery was making a steam-style* beer using two-row pale and caramel malt. As they dumped one bag into the grist mill they noticed it was too dark—obviously some unknown blend of pale and caramel, an error by the maltster.

"They were going to chuck it, so they gave it to



Jim Post with year-old son Jamie.

me instead. We guessed it was about 80 percent pale and 20 percent caramel, but of course had no way of knowing," Post said. "I figured to make some sort of lager, and had some roasted Australian dark dry extract around. I wanted to darken whatever it was I was making."

"Yes, I was making a Munich Dunkel," he continued, "and if you believe that, I've got some land in Florida to sell you!"

During the best-of-show round, judges commented on the beer's "sophistication," but Post chuckled as he related mishaps that occurred during brewing and fermentation.

"On the fourth day, when the ferment was going well, I came home from work and found the carboy open," Post said. "The beer had blown the stopper and hose right out of the carboy. I lost a

gallon of beer, and who knows how long the fermenter sat open!"

Fortunately, the stopper and clogged hose blew out instead of sticking, and there was no explosion, he added. Then, over the course of fermentation the temperature varied considerably, ending 10 degrees higher than it started.

"You won't find that recommendation in any brewing book," Post chuckled.

Despite the temperature problem, the beer picked up no fruity, estery notes common from such a change. It also stayed well in style.


The batch was dubbed "Jamie Beer" after Post's year-old son. He planned to attend the 1990 Homebrewers Conference in California, and purchased non-refundable tickets nine months in advance. A week later, he found out

his wife was pregnant . . . and the rest is simple mathematics. He made Manchester a year later and named the beer after his son.

Though Post brews mostly all grain, his brewing system isn't a big facility. He mashes using single-step infusion procedures in a six-gallon ice chest. The wort is boiled on the kitchen stove and chilled with an immersion chiller.

He learned all-grain brewing from demonstrations the Maltose Falcons held in California. He started brewing with extract but had limited success, primarily because of poor quality dry yeast and repeating the same mistakes over and over, he said.

Post's advice for aspiring best-of-show winners is to learn by observing advanced homebrewers in action. "Learn from their mistakes," he said, "so you don't make your own. A club is absolutely the best way to do this."

Post urges clubs to heed this advice, too. "It's most beneficial for clubs to have brewing demonstrations at their meetings, not simply tastings. You can be a nationally certified beer judge, but if you don't witness beer-making it's difficult to become a nationally recognized brewer." 

* Note: The term "Steam" beer is trademarked by the Anchor Brewing Co. and may not be used by other breweries for commercial purposes.

DAN FINK

Brewer's specifics

All water was preboiled to remove chlorine. The mash was a step infusion. Grains were held in a protein rest at 120 degrees F (49 degrees C) for 30 minutes. Temperature was raised to 140 degrees F (60 degrees C) and held for 10 minutes. The next step was to 158 degrees F (70 degrees C), held for 90 minutes and sparged with 165-degree-F (74-degree-C) water. Candy sugar and malt extract were added 30 minutes into the 90-minute boil.

Judges' comments

"Estery, malty character in aroma. Alcohol in background, some diacetyl. Strongly alcoholic, very sweet up front. Hops a bit assertive, some astringency. Very rich body. Interesting beer, with a good fit for the tripple style. Needs a little tuning (or maybe a year's aging)."

"Spicy, citrus aroma. Some 'root beer' esters—not unpleasant. Very drinkable, has appropriate residual sweetness with good hop balance."

"Clean, powerful taste. Perfect balance! Nice lingering aftertaste. An exceptionally fine beer. True to style, very refined. Don't change anything!"

BROWN ALE

Premier Malt Brown Ale Trophy

Premier Malt Products, Grosse Pointe, Michigan



"Arther Pithicus Brown"
First Place
Kevin Johnson
Pacifica, California

Ingredients for 6 1/2 gallons

- 5 pounds English two-row malt
- 4 pounds English mild two-row malt
- 2 pounds English crystal malt
- 1 2/3 pounds John Bull amber unhopped malt extract
- 1/4 pound chocolate malt
- 1 ounce Northern Brewer hops, 7 percent alpha acid (75 minutes)
- 1/2 ounce Northern Brewer hops (35 minutes)
- 1/2 ounce Goldings hops (35 minutes)
- 1 1/4 ounces Goldings hops (finish)
- 3/4 teaspoon gypsum (half in mash, half in sparge)
- Wyeast No. 1056 Chico liquid ale yeast
- 3/4 cup corn sugar to prime

- Original specific gravity: 1.062
- Terminal specific gravity: 1.021
- Boiling time: 75 minutes
- Age when judged (since bottling): two and one-half months

Brewer's specifics

Mashed all grains at 152 to 156 degrees F (66.5 to 69

degrees C) until conversion complete. Sparged with water at 170 degrees F (76.5 degrees C).

Judges' comments

"Super grain malt nose very evident. A little fruitiness, not much hops. Nice malt sweetness in flavor, were it not so gassy. Beautiful malt character with hops balanced properly. A great brown ale were it not overconditioned. Malt taste and balance are excellent."

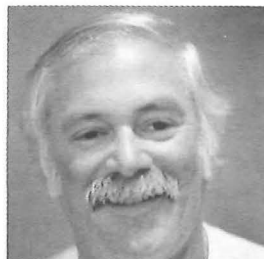
"Malty nose with hints of grain—no hop (but that's OK for style). Good malt character throughout flavor. I like the balance of hops and malt, with malt definitely winning. When the head faded, there was a very good beer to be found. Love the malt!"

PALE ALE

Wynkoop Brewery Pale Ale Trophy

Wynkoop Brewing Co., Denver, Colorado

Round-trip travel will be awarded to the first-place winner to visit Vermont area breweries. Winner will be hosted and sponsored by The Vermont Pub and Brewery (Burlington), The Mountain Brewers Inc. (Bridgewater), Otter Creek Brewing Co. (Middlebury) and Dewey's Ale House (Brattleboro).



"Hospital Palor"
(India pale ale)
First Place
Quentin Smith
Rohnert Park, California

Ingredients for 5 gallons

- 14 pounds Klages malt
- 4 ounces 40° L crystal malt
- 4 ounces 90° L crystal malt
- 1/2 ounce Nugget hops, 11.1 percent alpha acid (60 minutes)
- 1 ounce Perle hops, 6.3 percent alpha acid (30 minutes)
- 1 ounce Cascade hops, 4.9 percent alpha acid (30 minutes)
- 1 ounce Perle hops, 6.3 percent alpha acid (finish)
- 1 ounce Cascade hops, 4.9 percent alpha acid (finish)
- 2 teaspoons gypsum (in sparge)
- 1/2 teaspoon calcium carbonate (in sparge)
- 1/4 teaspoon non-iodized salt (in sparge)
- 2 teaspoons Irish moss (45 minutes)
- Wyeast No. 1056 liquid ale yeast
- 3/4 cup corn sugar to prime

- Original specific gravity: 1.062
- Terminal specific gravity: 1.010
- Boiling time: 60 minutes
- Age when judged (since bottling): three months

Brewer's specifics

All grains mashed for 90 minutes at 150 degrees F (65.5 degrees C). Mashed off at 170 degrees F (76.5 degrees C), sparged with water at 170 degrees F (76.5 degrees C).

Judges' comments

"Alcoholic, estery and fruity aroma. Slight diacetyl, good balance, nice finish. Good body, needs to be dry hopped."

"Nice malt, slightly alcoholic aroma. Good color and clarity. Nice hop-malt balance. Good body. Nice beer! Alcoholic and warming in the finish."

ENGLISH AND SCOTTISH BITTER

Jasper's Home Brew Supply

English and Scottish Bitter Trophy

Jasper's Home Brew Supply, Litchfield, New Hampshire

"Bridge House Bitter"

(English special)

First Place

Andy Leith

St. Louis, Missouri

Ingredients for 5 gallons

- 9 pounds pale ale malt
- 8 ounces 60 °L crystal malt
- 1 3/4 ounce Willamette hops (90 minutes)
- 1/2 ounce Fuggles hops (90 minutes)
- 1 ounce Goldings hops (finish)
- Wyeast Irish ale liquid yeast

- Original specific gravity: 1.042
- Terminal specific gravity: 1.010
- Boiling time: 90 minutes
- Primary fermentation: four days
- Secondary fermentation: 10 days

Brewer's specifics

Grains were mashed with 12 quarts water for 30 minutes at 125 degrees F (51.5 degrees C). Temperature was raised to 154 degrees F (68 degrees F) and held for 90 minutes. The sparge was conducted very quickly, hence the large amount of grain used.

Judges' comments

"Gentle and kind hop and malt aroma. A nice balance has been struck here, a good rosy drinking beer—what a bitter should be, no off-flavors detected."

"Some DMS initially, faded. Floral hop character, some malt evident. Very nice flavor, excellent British-style carbonation. Well-balanced, pleasant aftertaste. Outstandingly English! The only thing missing is the hand-pump and the public bar footrail to stand on!"

PORTER

The Cellar Porter Beer Trophy

The Cellar, Seattle, Washington



"Cream City Porter"

(Brown porter)

First Place

Robert Burko

Milwaukee, Wisconsin

Ingredients for 5 gallons

- 9 pounds British pale ale malt
- 3 pounds British brown malt
- 3/4 pound crystal malt
- 1/2 pound chocolate malt
- 1/2 pound wheat malt
- 3/4 ounce Perle hops, 7.9 percent alpha acid (60 minutes)
- 1/2 ounce Willamette hops, 4.7 percent alpha acid (60 minutes)
- 1 ounce Willamette hops, 4.7 percent alpha acid (15 minutes)
- 1/2 ounce Perle hops, 7.9 percent alpha acid (one minute)

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1 tablespoon Irish moss (15 minutes)
Wyeast No. 1056 liquid ale yeast
1/4 cup dextrose to prime

- Original specific gravity: 1.056
- Terminal specific gravity: 1.018
- Boiling time: 60 minutes
- Primary fermentation: 22 days at 58 degrees F (14.5 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

Strike temperature with 4 1/2 gallons of water was 168 degrees F (75.5 degrees C). All grains mashed in a single-step infusion at 154 degrees F (68 degrees C) for two hours at pH 5.4. Sparged with 5 1/2 gallons of water.

Judges' comments

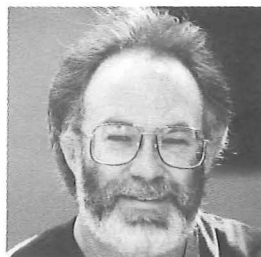
"Hoppy brown porter, but nice—increase residual malt slightly to get closer to brown porter. Bitterness seems slightly high for a brown porter. Hops and malt meld nicely."

"Flavor good, nice finish, perhaps a touch more chocolate malt to round out the flavor. A well-made beer."

"Malt is just a bit burnt in the nose. Hops are just great. Nothing off. Malt taste is great, but a little too strong, throwing off the balance. Body rich and full—a good-feeling beer. Delightful entry! I'm a critical judge, and this beer is hard for me to criticize."

ENGLISH AND SCOTTISH STRONG ALE

Wine & Hop Shop Scotch Ale Award
Wine & Hop Shop, Denver, Colorado

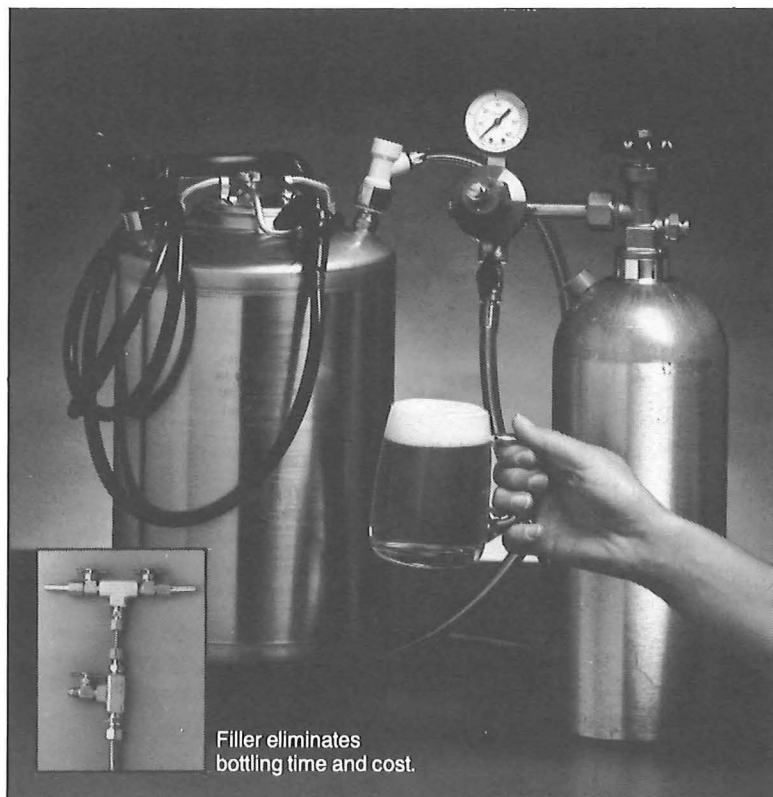


"AXO Scots Ale"
Scottish strong ale
First Place
David Sherfey
La Crescenta, California

Ingredients for 5 gallons

- 10 pounds pale malt
- 6 pounds Klages malt
- 1 pound Scots malt
- 1/2 ounce Chinook hops (60 minutes)
- 1 1/8 ounce Northern Brewer hops (60 minutes)
- 1/4 ounce CFJ-90 hops (60 minutes)
- 1/2 gram rock salt
- 1/2 gram gypsum
- 1/2 gram Epsom salts
- Sierra Nevada liquid yeast culture in 1-quart starter

- Original specific gravity: 1.080



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- Terminal specific gravity: 1.022
- Boiling time: 120 minutes
- Primary fermentation: three weeks at 65 degrees F (18.5 degrees C)
- Secondary fermentation: two months at 65 degrees F (18.5 degrees C)

Brewer's specifics

All grains were mashed for 1 1/4 hours at 155 degrees F (68.5 degrees C). Temperature was raised to 170 degrees F (76.5 degrees C), then sparged to collect 6 1/4 gallons. Wort was boiled one hour before adding hops.

Judges' comments

"Malty nose, slight toasted aroma, slight hops. Complex malt taste—just enough hops to balance some solvent-phenolic taste. Tasty beer, smooth and complex, good try."

"Distinctive, slightly grainy aroma. Clear red-amber color. Malty, well-conditioned. Excellent beer."

"Smooth, malty flavor, bittersweet. Great beer, right on style. No serious problems."

STOUT

Coal Black Kidney Stout Award

Great Fermentations of Marin, San Rafael, California

Round-trip travel and accommodations were awarded to Dave Hammaker to visit Washington breweries. He will be hosted and sponsored by the Pike Place Brewery (Seattle), Duwamps Cafe/Seattle Brewing Co. (Seattle), Maritime Pacific Brewing Co. (Seattle), and Roslyn Brewing Co. (Roslyn).



"Imperial Curmudgeon"
(Russian imperial stout)
First Place
Dave Hammaker
Roaring Spring,
Pennsylvania

Ingredients for 5 gallons

- 6 pounds William's English dark malt extract
- 6 pounds William's Australian dark malt extract
- 2 1/4 pounds American rice extract
- 1 2/3 pounds American dark malt extract
- 1 7/8 pounds crystal malt
- 11 ounces black patent malt
- 9 ounces chocolate malt
- 6 ounces roasted barley
- 1 ounce Green Bullet hops, 10 percent alpha acid (45 minutes)
- 1 ounce Northern Brewer hops, 8.1 percent alpha acid (45 minutes)
- 1 ounce Pride of Ringwood hops, 8.9 percent alpha acid (45 minutes)
- 1 ounce Chinook hops, 11.9 percent alpha acid (45 minutes)



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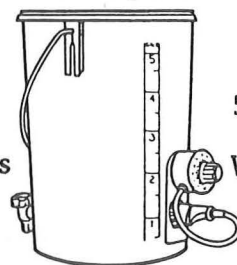
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- 1 ounce Mount Hood hops, 7.8 percent alpha acid (15 minutes)
- 1 ounce Cascade hops, 5 percent alpha acid (15 minutes)
- 3/4 ounce Mount Hood hops, 7.8 percent alpha acid (steep)
- 3/4 ounce Cascade hops, 5 percent alpha acid (steep)
- 1/2 ounce East Kent Goldings hops, 5.9 percent alpha acid (steep)
- 2 teaspoons gypsum
- K-1 dry wine yeast
- 1/2 cup sugar to prime

- Original specific gravity: 1.120
- Terminal specific gravity: 1.050
- Boiling time: 45 minutes
- Primary fermentation: two weeks
- Secondary fermentation: two months
- Age when judged (since bottling): 15 months

Judges' comments

"Very rich aroma, very full-flavored. This beer is *very* strong! Marked down only for its excessive strength. A barley wine?"

"Nice malty nose, alcoholic. A wonderful beer, a lot of everything here, but it is well-balanced."

BOCK

Yakima Valley Hop Growers Bock Beer Trophy Yakima Valley Hop Growers, Yakima, Washington

Round-trip travel and accommodations were awarded to Thomas Griffith to Aass Brewery, Drammen, Norway. He will participate in the brewing of a batch of Aass Bock. Prize sponsored by Aass Brewery, Drammen, Norway.



"Doppelbock Two"
(Doppelbock)
First Place
Thomas Griffith
Franklin, Massachusetts

Ingredients for 5 gallons

- 15 pounds Laaglander dry light malt extract
- 8 ounces crystal malt
- 6 ounces chocolate malt
- 2 ounces Eroica hops (85 minutes)
- 1 ounce Tettnanger hops (10 minutes)
- 1 ounce Tettnanger hops (one minute)
- 1/2 teaspoon gypsum
- 1 teaspoon yeast energizer
- 1 teaspoon Irish moss (15 minutes)
- Wyeast No. 2206 liquid yeast
- 7/8 cup corn sugar to prime

- Original specific gravity: 1.104
- Terminal specific gravity: 1.051
- Boiling time: 85 minutes
- Primary fermentation: six weeks at 48 degrees F (9 degrees C) in glass
- Secondary fermentation: eight weeks at 58 degrees F (14.5 degrees C) in glass
- Age when judged (since bottling): one year

Brewer's specifics

Brought water to boil, steeped grains for 30 minutes, then sparged with 2 quarts of 168 degree F (75.5 degree C) water.

Judges' comments

"Very alcoholic, malty aroma. Slightly salty finish, big malty sweetness, nice bitterness. Finish is slightly smoky-phenolic, roasty. Reduce salts, slight astringency from roast."

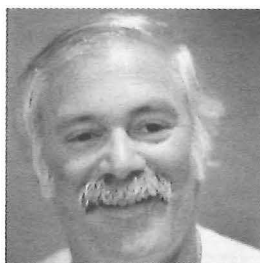
"Malty, good balance for style. What a great beer!"

"Nice malt sweetness, some bitterness, very long alcoholic finish. Fabulous! See you at the awards dinner!"

AMERICAN DARK LAGER

BME Brewers Cup

BME Extract, Staten Island, New York



"Brewer's Caramel"
First Place
Quentin Smith
Rohnert Park, California

Ingredients for 5 gallons

- 8 pounds Klages malt
- 2 pounds crystal malt (90 °L)
- 1/4 ounce Nugget hops, 11.1 percent alpha acid (60 minutes)
- 1/4 ounce Perle hops, 6.8 percent alpha acid (30 minutes)
- 1/2 ounce Spalt hops, 4 percent alpha acid (finish)
- 1/4 ounce Tettnanger hops, 3.3 percent alpha acid (finish)
- Wyeast St. Louis lager liquid yeast
- 1 1/4 cups corn sugar to prime

- Boiling time: 60 minutes
- Primary fermentation: one week at 50 degrees F (10 degrees C) in plastic
- Secondary fermentation: two weeks at 32 degrees F (0 degrees C) in glass
- Age when judged (since bottling): one month

Brewer's specifics

All grains were infusion mashed at 148 degrees F (64.5 degrees C) for one hour.

Judges' comments

"Good mild malt nose. Excellent color, great clarity, excellent retention. Excellent conditioning. Mildness in flavor totally appropriate for style. Beautiful job!"

"Slight malt-hop aroma appropriate for style. Mild and malty flavor appropriate for style. Very smooth—I could enjoy many pints!"

DORTMUND/EXPORT

DeFalco's Wine & House Beer Export Beer Trophy
DeFalco's Wine & House Beer, Dallas, Texas

"Boogie's Export"

First Place

David Woodruff

Sebastopol, California

Ingredients for 5 gallons

- 10 pounds Klages malt
- 3/4 pound Munich malt
- 1/2 pound Vienna malt
- 1/2 pound dextrin malt
- 1/2 ounce Northern Brewer hops, 8 percent alpha acid (60 minutes)
- 1/4 ounce Northern Brewer hops, 8 percent alpha acid (40 minutes)
- 1/2 ounce Hallertauer hops, 5.3 percent alpha acid (30 minutes)
- 1 ounce Tettnanger hops, 3.3 percent alpha acid (seven minutes)
- 1/2 teaspoon gypsum
- 1/2 teaspoon chalk
- Wyeast Bavarian lager liquid yeast

- Original specific gravity: 1.058
- Terminal specific gravity: not taken
- Boiling time: 60 minutes
- Primary fermentation: 11 days at 48 degrees F (9 degrees C) in glass
- Secondary fermentation: three weeks at 35 degrees F (1.5 degrees C) in glass
- Age when judged (since bottling): one and one half months

Brewer's specifics

All grains mashed 90 minutes at 152 degrees F (66.5 degrees C).

Judges' comments

"Good, clean nose. Excessive hop aroma. Good taste, good balance of malt and bittering hops."

"Too much flavor hops, aftertaste is a little bitter. A little astringent. Great beer. Tastes right! Reduce flavor and finish to get true-to-style Dortmunder."

MUNICH HELLES

Wines Inc. Munich Helles Beer Trophy
Wines Inc., Akron, Ohio



"Where in the Helles Munich?"

First Place

Steven and Christina

Daniel

League City, Texas

Ingredients for 5 gallons

- 8 pounds two-row malt
- 2 pounds light crystal malt
- 2 pounds Munich malt
- 1 1/4 ounces (25 IBU) Hallertauer hops (90 minutes)
- Wyeast No. 308 liquid yeast in homemade starter
- Force carbonated in keg, counterpressure bottled

- Original specific gravity: 1.052
- Terminal specific gravity: 1.015
- Boiling time: 90 minutes
- Primary fermentation: three weeks at 50 degrees F (10 degrees C) in stainless steel

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- Secondary fermentation: four weeks at 32 degrees F (0 degrees C) in stainless steel
- Age when judged (since bottling): one month

Brewers' specifics

All grains mashed at 151 degrees F (66 degrees C) for one hour.

Judges' comments

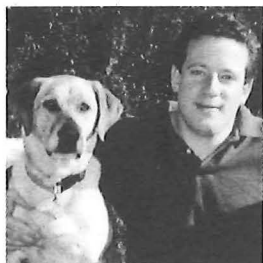
"Very prominent malty aroma—clean. Clean, characteristic taste with only slight oxidation. Bitterness prevails in the finish. I like this beer, and think you did a great job. Enough malt is present, maybe too much hops."

"Nice clean, malty nose. Body a bit thin."

"Maltiness jumped right out of the glass. Really good balance, nice sweet malt balance. A slight smokiness, a hint of oxidation. I really like this a lot!"

CLASSIC PILSENER

Alexander's Pilsener Trophy
California Concentrates, Acampo, California



**"Yellow Dogs
Pilsener"**
First Place
Matthew Holland
Park City, Utah

Ingredients for 5 gallons

- 6 pounds William's American light malt extract
 - 1 pound William's Australian light malt extract
 - 1/2 ounce Chinook hops, 11.5 percent alpha acid (60 minutes)
 - 1 ounce Saaz hops, 3.5 percent alpha acid (15 minutes)
 - 1 ounce Saaz hops, 3.5 percent alpha acid (finish)
 - 1 ounce Saaz hops, 3.5 percent alpha acid (dry hopped)
 - 1 1/2 teaspoons Irish moss (30 minutes)
 - Wyeast Bohemian Lager liquid yeast
 - 5/8 cup corn sugar to prime
- Original specific gravity: 1.044
 - Terminal specific gravity: 1.011
 - Boiling time: 60 minutes
 - Primary fermentation: 14 days at 54 degrees F (12 degrees C) in plastic
 - Age when judged (since bottling): two and one-half months

Judges' comments

"Beautiful Saaz aroma. Slightly malty undertones, clean. Maltly sweet with just the right amount of hops.

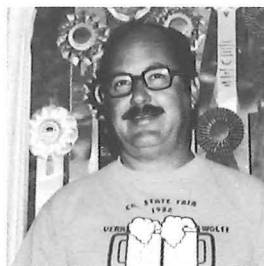
Nice lingering aftertaste, great flavor. Good balance. Excellent, clean beer. No faults at all (which is hard to do in this category). A true classic."

"Very delicate malt-floral aroma. Fantastic malt flavor, could possibly be a bit more bitter. Nice bubbles, nice smooth taste. Best yet! Subtle Pilsener flavors, great attention to detail. Excellent job!"

AMERICAN LIGHT LAGER

Keller's Brewhaus American Light Lager Trophy
Keller's Brewhaus, Oklahoma City, Oklahoma

Round-trip travel and accommodations were awarded to Vern Wolff to visit Miller Brewing in Milwaukee, Wis., hosted and sponsored by Miller Brewing Co.



**"Pre-Prohibition
Lager à la George
Fix"**
American Premium
First Place
Vern Wolff
Esparto, California

Ingredients for 10 gallons

- 7 pounds two-row pale malt
 - 7 pounds six-row pale malt
 - 7 pounds rolled barley
 - 2 ounces homegrown Cluster hops (60 minutes)
 - 1 ounce homegrown Cascade hops (5 minutes)
 - Butterfield Brewing Co. liquid yeast culture in starter
 - 1 1/2 cups dextrose to prime
- Original specific gravity: 1.045
 - Terminal specific gravity: 1.011
 - Boiling time: 60 minutes
 - Primary fermentation: 16 days at 55 degrees F (13 degrees C) in glass
 - Age when judged (since bottling): three months

Brewer's specifics

Mashed all grains in a step infusion. First rest was at 127 degrees F (53 degrees C) for 30 minutes. Raised temperature to 135 degrees F (57 degrees C) and held for 30 minutes. Last rest was at 147 degrees F (64 degrees C) for 30 minutes.

Judges' comments

"Aroma is almost neutral—good and clean. Great crisp clean flavor with medium malt and hop impact. Very good profile, though beer has too much flavor for style. Great brew except for the haze. Good job, a bit full, though."

"Balanced flavor, though slightly too much malt. Body slightly too full. Nicely made beer—a bit too much for style, but lovely!"

A Complete Look at Lager Brewing and Decoction Mashing

Brewing Lager Beer

By Gregory J. Noonan

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Part 2: The Brewing Process

Next, Greg guides you through the entire brewing process from planning to bottling the beer.

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Straining and Cooling the Wort); Primary Fermentation (Kraeusening, Pitching the Yeast, Temperature Control, Balling, Real and Apparent Attenuation and Racking); Secondary Fermentation (Lagering, Fining, Real Terminal Extract); Bottling; and Imbibing. A special section also discusses Cleaning and Sterilizing Equipment.

Appendices

Here are over 30 pages of invaluable data handily organized in tables and charts for easy reference. Topics include Homebrewing from Malt-Extract Syrup; Infusion Mashing; Step (Modified Infusion) Mashing; Weights and Measures; Density References; Expected Alcohol Percentage; Hydrometer Correction; Water Hardness Calculations; Brewers Glossary; and others too numerous to list here.

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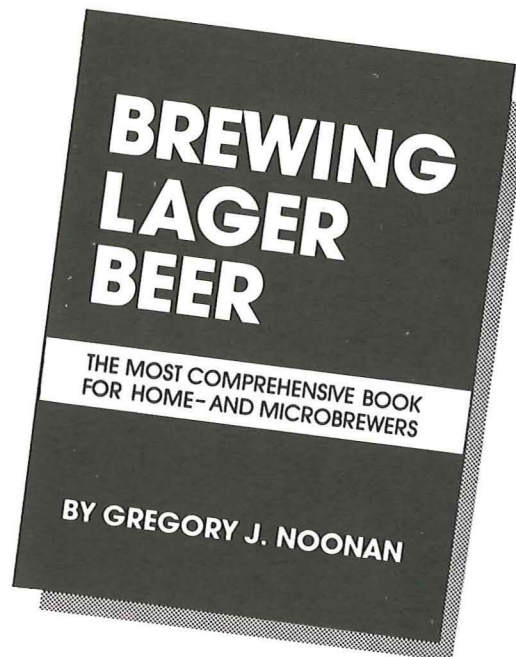
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VIENNA/OKTOBERFEST/MÄRZEN

**Frank H. Steinbart's Memorial
Vienna Beer Trophy**
F.H. Steinbart Co., Portland, Oregon

Round-trip travel was awarded to Dennis Arvidson to Chicago breweries hosted and sponsored by Goose Island Brewing Co., Weinkeller Brewery, Pavichevich Brewing Co. and the Chicago Brewing Co.



**No name given
(Oktoberfest/Märzen)
First Place
Dennis and Cindy
Arvidson
Encinitas, California**

Ingredients for 15 gallons

- 15 1/2 pounds two-row malt
- 9 pounds Munich malt
- 2 pounds home-roasted two-row malt
- 1 1/2 pounds wheat malt
- 1 pound Scottish malt
- 1/4 pound roasted barley
- 3 1/4 ounces Styrian Goldings hops, 3 percent alpha acid (120 minutes)

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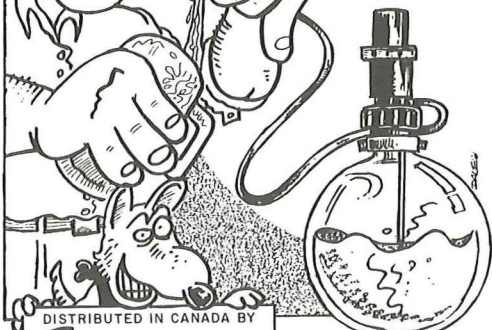
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- 2 1/2 ounces Saaz hops, 2.4 percent alpha acid (120 minutes)
- 3 1/6 grams calcium chloride in mash
- 3 1/6 grams calcium chloride in sparge
- Wyeast No. 2308 liquid lager yeast
- 3/4 cup corn sugar to prime

- Original specific gravity: 1.060
- Terminal specific gravity: 1.015
- Boiling time: 120 minutes
- Primary fermentation: 40 days at 38 degrees F (3.5 degrees C) in plastic
- Secondary fermentation: 30 days at 38 degrees F (3.5 degrees C)
- Age when judged (since bottling): eight months

Brewers' specifics

All grains mashed 90 minutes at 156 degrees F (69 degrees C).

Judges' comments

"Nice malt, slight diacetyl and DMS. Good toasted aroma, nice hops. Good color, nice toasted malt flavor. Good balance and finish, slight oxidation. A great beer!"

"Nice toasted malt nose. Maltness comes through nicely, followed by warming alcohol taste. Great-tasting beer, maybe a bit alcoholic for style and a tad cloudy."

"Toasted malt aroma, no hop aroma. Not much toasted flavor. Malt is there, some hop bitterness. Balance is OK, minimal aftertaste. Very good beer, needs more toasted flavor. Excellent!"

GERMAN-STYLE ALE

**Great Fermentations of Santa Rosa
Altbier Challenge Cup**

Great Fermentations of Santa Rosa, California



**"League City Alt
Part 3"
(Düsseldorf-style altbier)
First Place
Steven and Christina
Daniel
League City, Texas**

Ingredients for 5 gallons

- 8 pounds two-row malt
- 2 pounds crystal malt
- 2 pounds Munich malt
- 3/4 ounce (26 IBU) Perle hops (90 minutes)
- Wyeast No. 308 liquid lager yeast
- Force carbonated in keg, counterpressure bottled

- Original specific gravity: 1.054
- Terminal specific gravity: 1.017
- Boiling time: 90 minutes

- Primary fermentation: three weeks at 50 degrees F (10 degrees C) in stainless steel
- Secondary fermentation: four weeks at 32 degrees F (0 degrees C) in stainless steel
- Age when judged (since bottling): one month

Brewers' specifics

All grains mashed one hour at 152 degrees F (66.5 degrees C).

Judges' comments

"Very nice color, clarity and head. Firm malt palate, smooth and well-balanced. Some more hop flavor would be nice. Nice rendition of style—not much to fault—a tad more hop flavor and maltiness is all."

"Nice malt aroma, maybe a hint of fruitiness. A bit of toasted malt flavor. Nice malt character, needs more bitterness in finish. Nice beer. Could use more boiling hours for character in finish."

CREAM ALE

Yellow Dog Award

The Home Brewery, Fontana, California



"League City Cream Ale"

First Place
Steven and Christina
Daniel
League City, Texas

Ingredients for 5 gallons

- 8 pounds two-row malt
- 1 pound light crystal malt
- 1 1/8 ounces (23 IBU) Hallertauer hops (90 minutes)
- Wyeast No. 308 liquid lager yeast
- Force carbonated in keg, counterpressure bottled

- Original specific gravity: 1.046
- Terminal specific gravity: 1.011
- Boiling time: 90 minutes
- Primary fermentation: three weeks at 50 degrees F (10 degrees C) in steel
- Secondary fermentation: four weeks at 32 degrees F (0 degrees C) in steel
- Age when judged (since bottling): one month

Brewers' specifics

All grains mashed for one hour at 152 degrees F (66.5 degrees C).

Judges' comments

"Clean nose, slightly fruity—great! Well-balanced, but dry corn finish is a bit off. Did you use corn starch? An excellent cream ale from beginning to end. Only one minor blemish, that being the corn note."

"Perfect cream ale nose. Slightly malt flavor, perfect balance and aftertaste. Good recipe, good technical execution. You're a contender!"

"Very correctly styled and balanced, hard to fault."

FRUIT BEER

Purple Foot™ Fruit Beer Trophy The Purple Foot, Milwaukee, Wisconsin



"Black Raspberry Ale" First Place Ken Kraemer Bloomington, Minnesota

Ingredients for 5 gallons

- 5 pounds Munton and Fison light dry malt extract
- 11 ounces Munton and Fison diastatic malt extract
- 12 ounces two-row malt
- 8 ounces wheat malt
- 8 ounces crystal malt (90 °L)
- 8 ounces chocolate malt
- 6 ounces black patent malt
- 1 ounce Cluster hops, 9 percent alpha acid (55 minutes)
- 1 ounce Cascade hops, 5.5 percent alpha acid (5 minutes)
- 6 pounds black raspberries (steeped 30 minutes at end of boil)
- Wyeast No. 1028 London ale liquid yeast
- 3/4 cup corn sugar to prime

- Original specific gravity: 1.051
- Terminal specific gravity: 1.013
- Boiling time: 60 minutes
- Primary fermentation: 12 days at 65 degrees F (18.5 degrees C) in plastic
- Secondary fermentation: nine days at 65 degrees F (18.5 degrees C) in glass
- Age when judged (since bottling): five months

Brewer's specifics

Black raspberries were purchased frozen and thawed before adding to wort. They were added at the end of the boil and steeped for 30 minutes. Wort was chilled and berries were strained out as the wort was poured into the fermenter. Grains were mashed one hour at 152 degrees F (66.5 degrees F).

Judges' comments

"Nice, delicate berry notes to nose. Clean as a whistle. Subtle aroma, nicely done. Richly complex—berry sweetness and tartness mingle nicely. A little more body would help. Very well-done beer. Rich berry sweetness nicely offset by tartness and hops."

"Nice raspberry aroma. A slight astringency but not offensive. Nice berry-malt-hop balance lingering into aftertaste. A definitely drinkable brew, nicely balanced."

HERB BEER

Marin Brewing Co. Herb Beer Trophy
Marin Brewing Co., Larkspur, California



"Loose Lucy Ginger Lager"
First Place
Gene Muller
Westmont, New Jersey

Ingredients for 5 gallons

- 4 1/2 pounds Laaglander light malt extract
- 1 ounce Cascade hops (60 minutes)
- 1/2 ounce Cascade hops (30 minutes)
- 1/2 ounce Cascade hops (two minutes)
- 1 1/2 pounds honey
- 3 ounces freshly grated ginger root
- grated peels of four oranges
- MeV. American lager liquid yeast
- 3/4 cup corn sugar to prime
- Boiling time: 60 minutes
- Primary fermentation: six days at 50 degrees F (10 degrees C) in glass
- Secondary fermentation: 13 days at 50 degrees F (10 degrees C) in glass
- Age when judged (since bottling): two months

Brewer's specifics

Spices added at beginning of boil, orange peels for last 10 minutes of boil.

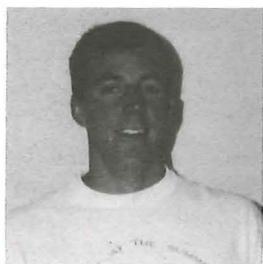
Judges' comments

"Beautiful ginger, honey aroma with citrus overtones. Nice flavor, doesn't bang you over the head. I love the beer—make sure you don't lie when you give the AHA the recipe!"

"Floral, orangey, sweet, slight tartness in aroma. Honey, slight bitterness and ginger in flavor. Delicate and refreshing. Nice delicate light lager, good job of matching spice level to body and flavor of beer—well made!"

SPECIALTY BEER

Beer and Wine Hobby Specialty Beer Trophy
Beer and Wine Hobby, Woburn, Massachusetts



"Zulu's Xmas Lager"
First Place
Mike Zulauf
Breckenridge, Colorado

Ingredients for 5 gallons

- 3 1/3 pounds Munton and Fison light hopped malt extract syrup

- 2 3/4 pounds light dry malt extract
- 1 ounce Perle hops, 7.5 percent alpha acid (60 minutes)
- 1 ounce Cascade hops, 4.5 percent alpha acid (60 minutes)
- 1 ounce Cascade hops, 4.5 percent alpha acid (8 minutes)
- 1/2 ounce Cascade hops, 4.5 percent alpha acid (5 minutes)
- 1/2 ounce Cascade hops, 4.5 percent alpha acid (2 minutes)
- 2 teaspoons gypsum
- 2 1/2 pounds light clover honey
- 2 teaspoons dried ground ginger
- 2 teaspoons dried ground nutmeg
- 3 teaspoons ground cinnamon
- grated peel from four oranges
- MeV. German lager liquid yeast
- 1 cup light dry malt extract to prime

- Original specific gravity: 1.071
- Terminal specific gravity: 1.018
- Boiling time: 60 minutes
- Primary fermentation: 10 days at 65 degrees F (18.5 degrees C) in glass
- Secondary fermentation: one month at 50 degrees F (10 degrees C), two weeks at 40 degrees F (4.5 degrees C), two weeks at 35 degrees F (1.5 degrees C) in glass
- Age when judged (since bottling): six months

Brewer's specifics

Honey was boiled with the extract. Spices added for last 10 minutes of the boil.

Judges' comments

"Big nutmeg and ginger in the nose. Spices dominate with sweetness for balance. Nice, well-made beer. Keep up the good work."

"Spices combine very well together, good balance in nose. Spices lend a dry finish, sweet yet dry. Very good job—well done—very drinkable. Enjoyed the experience, makes me want a case!"

SMOKED BEER

Jim's Homebrew Supply Shop Smoked Beer Award
Jim's Homebrew Supply, Spokane, Washington



"Prairie Smoked Beer"
(Bamberg-style rauchbier)
First Place
Dave and Judy Lipitz,
Lynn Patterson
Pueblo, Colorado.

Ingredients for 5 gallons

- 4 pounds pale malt
- 2 1/2 pounds Munich malt

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- 2 pounds lager malt
- 1/2 pound crystal malt
- 1/4 pound dextrin malt
- 1/4 pound red roasted barley
- 3/4 ounce homegrown Hallertauer hops (60 minutes)
- 1/4 ounce Northern Brewer hops, 9.4 percent alpha (60 minutes)
- 1/2 ounce Mount Hood hops, 3.5 percent alpha (30 minutes)
- 1/2 ounce Mount Hood hops, 3.5 percent alpha (10 minutes)
- 2 teaspoons gypsum
- Wyeast No. 2206 Bavarian liquid yeast
- 3/4 cup corn sugar to prime

- Original specific gravity: 1.055
- Terminal specific gravity: 1.015
- Boiling time: 60 minutes
- Primary fermentation: one week at 60 degrees F (15.5 degrees C) in glass
- Secondary fermentation: two weeks at 60 degrees F (15.5 degrees C) in glass, then one month at 32 degrees F (0 degrees C) in glass.
- Age when judged (since bottling): five months

Brewers' specifics

Soaked the Munich malt in water 15 minutes before smoking. Mashed grains at 145 degrees F (63 degrees C) for 20 minutes. Heated decoction of 1/2 the mash, added back to raise temperature to 159 degrees F (70.5 degrees F) until conversion was complete. Sparged with water at 170 degrees F (76.5 degrees C).

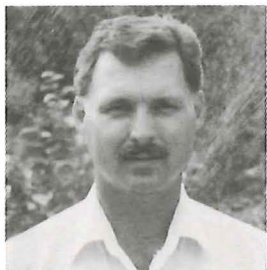
Judges' comments

"Strong smoked aroma. Clean, high smoked flavor with some malty sweetness. Body good, good example of the style."

"Smoke evident in aroma. Nice beech smoke, malt evident, proper for style. Nice clean smoke flavor. Very good example. Similar to Kaiserdom Rauch."

CALIFORNIA COMMON BEER

Anchor Brewing Co.
California Common Beer Trophy
 Anchor Brewing Co., San Francisco, California



"Common Amber"
First Place
Phil Rahn
Cordova, Tennessee

Ingredients for 10 gallons

- 16 1/2 pounds pale ale malt
- 1 pound crystal malt
- 1 pound mild ale malt

- 2 1/2 ounces Northern Brewer hops, 7.4 percent alpha acid (60 minutes)
- 1 1/2 ounces Cascade hops, 5.8 percent alpha acid (40 minutes)
- 2 ounces Cascade hops, 5.8 percent alpha acid (steep)
- 3 teaspoons gypsum
- Wyeast No. 2308 liquid yeast
- force carbonated

- Original specific gravity: 1.055
- Terminal specific gravity: 1.012
- Boiling time: 60 minutes
- Primary fermentation: seven days at 66 degrees F (19 degrees C) in glass
- Secondary fermentation: 21 days at 68 degrees F (20 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

All grains mashed 90 minutes at 154 degrees F (68 degrees C).

Judges' comments

"Rich, caramel malt aroma, ester not too aggressive. Wow, tastes as good as it smells. Nice caramel malt, hops kick in and it finishes creamy smooth. Very nice beer, finishes with some astringency. Classic!"

"Clean, balanced nose. Nice hop entry and finish. Needs some malt balance. Nice beer!"

WHEAT BEER

Wheat Growers Challenge Cup

National Association of Wheat Growers Foundation,
 Washington, D.C.



"Webster Cliff Wheat"
(Berliner Weisse)
First Place
Mike Fertsch
Woburn, Massachusetts

Ingredients for 3 1/2 gallons

- 3 1/4 pounds Klages malt
- 3 pounds wheat malt
- 1/4 pound Munich malt
- 1/4 ounce Hallertauer hops, 4 percent alpha acid (60 minutes)
- 1/4 ounce Tettnanger hops, 4.5 percent alpha acid (40 minutes)
- 1/4 ounce Hallertauer hops, 4 percent alpha acid (40 minutes)
- 1/4 ounce Hallertauer hops, 4 percent alpha acid (20 minutes)
- 1/4 ounce Hallertauer hops, 4 percent alpha acid (one minute)

1/2 teaspoon gypsum in mash
 1/2 teaspoon gypsum in sparge
 cultured Stoudt Brewing Co. wheat liquid
 yeast
 1/2 cup corn sugar to prime

- Original specific gravity: 1.046
- Terminal specific gravity: 1.012
- Boiling time: 60 minutes
- Primary fermentation: six days at 65 degrees F (18.5 degrees C) in glass
- Secondary fermentation: 15 days at 65 degrees F (18.5 degrees C) in glass
- Age when judged (since bottling): five months

Brewer's specifics

All grains mashed 90 minutes at 154 degrees F (68 degrees C).

Judges' comments

"Nice lactic sour nose, very appealing. Very light brew, with a well-pronounced and accurate sourness. Slightly overbittered in finish. Very nice interpretation of style, extremely refreshing beer! Nice job, and pass the woodruff!"

"Very appropriate lactic sour aroma. A bit too bitter. Sourness is just right. This is almost a perfect weiss bier. I must be in Berlin! Only flaw is a bit too much bitterness."

TRADITIONAL MEAD

Havill's Mazer Mead Traditional Mead Trophy
 Havill's Mazer Mead, Rangiora, New Zealand



"Mead No. 2"
First Place
Gene Goldberg
Denver, Colorado

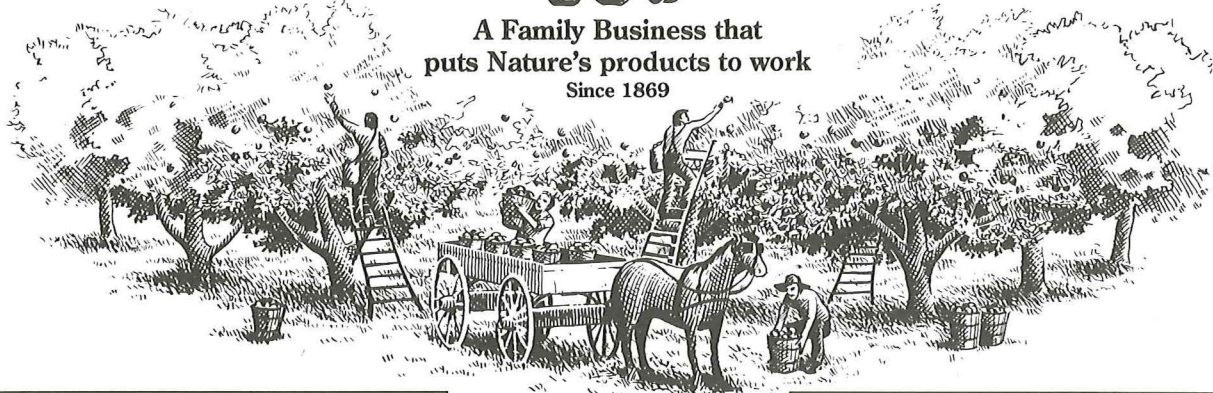
Ingredients for 5 gallons

18 pounds clover honey
 7 teaspoons acid blend
 7 teaspoons yeast nutrient
 Lalvin EC-118 dry yeast

- Original specific gravity: 1.112
- Terminal specific gravity: 1.014
- Primary fermentation: six months at 65 degrees F (18.5 degrees C) in glass
- Secondary fermentation: 12 months at 65 degrees F (18.5 degrees C) in glass
- Age when judged (since bottling): two months



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Stephen Yuhas, Ed Gilles

1991 Meadmakers of the Year



Meadmakers of the Year proudly display ribbons.

Stephen Yuhas of Dunlo, Penn., and Ed Gilles of Johnstown, Penn., took the 1991 Meadmaker of the Year award with a ginger metheglin, "Johnstown Brewing Ginger Mead." It was their first batch of mead—and neither had even *tasted* mead before brewing the winner.

Both Yuhas and Gilles started homebrewing in April 1990, making extract beers with grain added. Yuhas said he has raised bees since he was eight, and had considered trying mead for the last five years. The recipe was inspired by Charlie Papazian's Barkshack Ginger Mead from *The Complete Joy of Home Brewing*.

The winner was brewed with honey from Yuhas' three hives, fresh ginger root, Saaz aroma hops, a

small amount of corn sugar, Red Star ale yeast, yeast nutrient and citric acid. It was boiled on the stove in stainless steel for an hour. Brewed the first of February, the mead was only four months old when first judged.

"We chose ale yeast because we wanted to keep the alcohol low. Champagne yeast tends to survive longer," Yuhas said. The mead finished at a gravity of 1.024, while with wine yeast it would have ended up around 1.000.

The brewers attribute some of the mead's success to high-quality honey.

"Last year we got the best fall honey ever. It was exceptional grade honey," Yuhas said. "In our area of Pennsylvania there's a large variety of flowers for the bees."

He added that fresh honey is much more aromatic than the filtered,

store-bought variety. Yuhas took extra care in harvesting and extracting the honey because the quality was so fine to begin with. Honey can scorch quite easily during processing, he added.

"Try tasting the difference between what Stephen makes and store-bought—you'll be amazed at how much better his is," said Gilles.

Age is not kind to honey, either, Yuhas said. "Compare new honey to old that's been sitting around for a year or two—it loses the bouquet.

They boiled the must vigorously for an hour, then steeped the hops for a few minutes after the boil. Because they weren't boiled, the hops imparted no bitterness, only aroma. The brewers then pitched the yeast after the must cooled.

"The ferment took off very quickly, with a big, rocky head of foam. It

looked like a lava lamp in there," Gilles said.

The brew was racked to a secondary after a week of primary fermentation, then aged a bit less than three months before judging.

Meadmaking has not yet caught on as much as brewing, but seems to be on a fast rise. A few "boutique" meaderies have sprung up, and the art has become more widespread among homebrewers.

Both Yuhas and Gilles encourage brewers to give meadmaking a try. "It's just like making beer," Gilles said. "Pay attention to cleanliness and have at it. Have fun with it!"

"Just jump right in there and do it," added Yuhas.

That's definitely some good advice, especially from two who jumped right in there and got it right the very first time. ☺

DAN FINK

Judges' comments

"Very good aroma, excellent balance. Just a touch hot but very clean. Excellent body. Outstanding."

"Honey expression there in the aroma, but not overwhelming. Slight solvent off-aroma. Honey carries through flavor, alcohol very evident. Overall a good effort. A bit sharp. How about sending me a six-pack in a year?"

FLAVORED MEAD

The American Mead Association
Flavored Mead Trophy

American Mead Association, Ostrander, Ohio

Meadmakers of the Year Award
1991 Best of Show

Home Wine and Beer Trade Association



"Johnstown Brewing
Ginger Mead"
First Place
Steven Yuhas and Ed
Gilles
Windber, Pennsylvania

Ingredients for 5 gallons

12 pounds wildflower honey

- 1 ounce Saaz hops (one minute)
- 1 teaspoon citric acid
- 2 1/2 ounces ginger root
- 1/4 teaspoon Irish moss
- 3 teaspoons yeast nutrient
- Red Star dry ale yeast
- 1/2 cup corn sugar to prime, boiled with a little mead

- Original specific gravity: 1.088
- Terminal specific gravity: 1.023
- Boiling time: 60 minutes
- Primary fermentation: seven days at 65 degrees F (18.5 degrees C) in glass
- Secondary fermentation: 39 days at 65 degrees F (18.5 degrees C) in glass
- Age when judged (since bottling): two months

Brewers' specifics

Honey used was Triple Grade A western Pennsylvania fall wildflower honey, unprocessed. Ginger boiled one hour in must.

Judges' comments

"Great wildflower comes through flavor, candylke ginger, a real ace!"

"Appropriate acidity and sweetness. Ginger comes through, but could be more intense. I loved this mead!"

"Full ginger, medium-full honey in aroma. Good balance between honey and aromatics, but not too much ginger. Good!"



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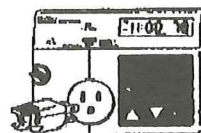
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continued from page 91

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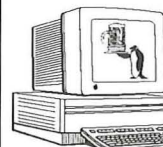
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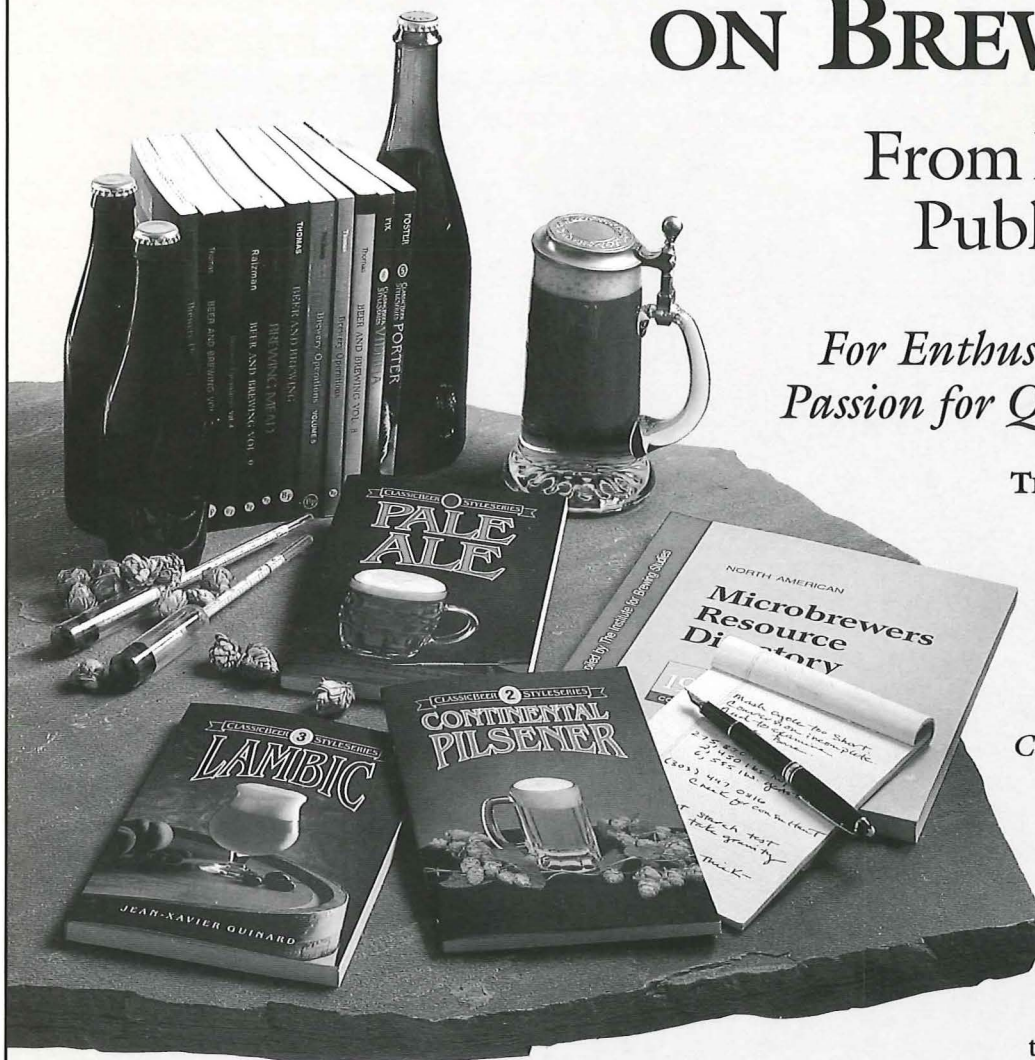
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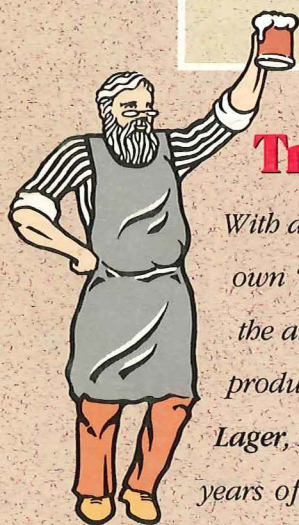
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