

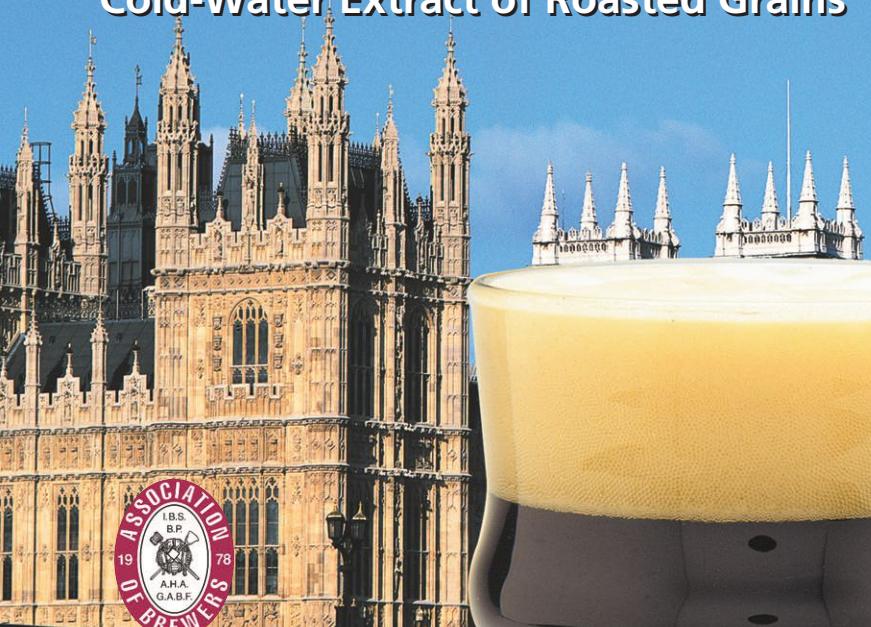
Vol. 25 No. 1 January/February 2002 The Journal of the American Homebrewers Association

ZYMURGY

FOR THE HOMEBREWER AND BEER LOVER

Dark and Delicious Ales!

Roger Protz on the Origins of Porter
Solera-Style Ale Brewing
Brewing a Classic Irish Stout
Aged Ales: Brewing up Tasty Old Ales
Cold-Water Extract of Roasted Grains



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Roy Bailey - Beer Correspondent
CAMRA's 'What's Brewing' magazine (April 2000)

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BBC Radio 4 food & drink programme
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The American Homebrewers Association is a division of The Association of Brewers, a not-for-profit organization located at 736 Pearl Street, Boulder, CO 80302-5006 USA. Membership is open to everyone. *Zymurgy* (ISSN 0196-5921, USPS 018-212) is the bi-monthly journal of the American Homebrewers Association and is published six times per year. Periodicals Postage Paid at Boulder, CO and additional mailing offices. Annual memberships are \$33 U.S., \$38 Canadian and \$51 International and include a \$24 subscription to *Zymurgy*.

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The opinions and views expressed in articles are not necessarily those of the American Homebrewers Association and its magazine, *Zymurgy*.

POSTMASTER: Send address changes to *Zymurgy*; 736 Pearl Street; Boulder, CO 80302-5006.
Printed in the USA.



JANUARY/FEBRUARY 2002, VOL. 25, NO. 1

ZYMURGY®

Zymurgy \zī'mər jē\ n: the art and science of fermentation, as in brewing.

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A photograph showing a computer monitor displaying the Northern Brewer website. The website features a red logo with a stylized 'N' and the text "northern BREWER". Below the logo, a banner reads "June 22, 2000" and "browse our online CATALOG". To the right of the monitor, a white Microsoft keyboard sits on a dark wooden desk. In the background, a hand holds a tall, ornate glass filled with beer, with brewing equipment visible behind it.

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BY PAUL GATZA

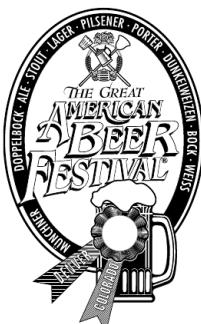
Another Year of Brewing

I hope everyone has had a healthy and happy holiday season so far. This *Zymurgy* article is my first since the tragic events of September 11th, and my thoughts return to that day as I type this article on the way to the Music City Brew Off. Those events and the aftermath have personally made the people in my life that much more important to me, and I have spent many evenings with my friends and neighbors trying to feel better by talking and socializing over beer. At the AHA office

in Boulder, it was nice to receive Phil Clarke's updates from the New York City Homebrewers Guild. The Guild felt that it was important to get together over beer as soon as

possible after the attacks, and it looks like beer and friends helped with the healing right away. See Gary Glass's Clubs Report for more on the New York City Homebrewers Guild.

The Great American Beer Festival at the end of September was quite therapeutic for me and many of the brewers in attendance, as it was the first event that brought members of the brewing community together on a large scale since the 11th. Somehow seeing so many familiar and friendly faces made it much easier to focus on the positive and have a great time. In my conversations with hotel staff and cab drivers in Denver it became clear that the slowdown in the travel and conference economy had hit deeply, and the festival helped Denver get back on its feet in a measurable way. The mayor's office of the City of Denver issued a proclamation recognizing the pos-



itive benefits that the Great American Beer Festival has had in Colorado over the past twenty years. Many brewery restaurants around the country have had a difficult financial quarter, and I encourage you to visit your local brewpub. What we do is important; it's not just fun.

American Homebrewers Association Goals for 2002

As we begin the new year, I would like to focus on my goals for the AHA membership over the next twelve months.

Health of the Hobby

I believe we would receive a lot more press coverage for homebrewing if we could quantify the business side of the hobby to a greater degree. If we can measure how much is being spent on equipment and ingredients, the media will be much more interested in providing coverage. Now that the decline of the hobby has leveled off and started its upturn in many parts of the country, the media will be more interested in reporting about the coolness and cama-

raderie that homebrewing fosters. Our sister organization, the Institute for Brewing Studies, has become the major media resource on the craft beer industry because it can quantify what is happening with the industry's continued growth. I believe that AHA should serve this function and that it will help grow the hobby.

Membership

The drop in AHA membership that we saw from 1995 to 2000 has stopped and membership is starting to increase in numbers. One of my goals is to add 2000 more members to the AHA by the end of 2002. If we can grow the membership, our advertisers and sponsors will have even more reason to support our program work and homemade beer gets even better as shops are able to turn over fresher ingredients even more quickly. We are finally rolling out

a comprehensive liaison program in 2002, under the guidance of AHA Membership Coordinator Erin Fay. In this

program members can represent the AHA at club meetings, festivals and other events such as Big Brew and Teach a Friend to Homebrew Day to grow awareness for the hobby and membership. The liaison program is the next step for our AHA Registered Clubs Program.

One area I will be addressing with the AHA Board of Advisors is a membership restructuring to possibly include family memberships, deluxe memberships with greater benefits and corporate or business memberships. A second area that I would like to address is the membership price—AHA has had the same membership price



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since 1996 and the cost of maintaining memberships and doing business has gone up as we've seen increased printing and shipping bills for *Zymurgy* and other components of our work. But relax and don't worry; we'll give plenty of notice in this column with an opportunity to renew at our current prices before a potential price increase would go into effect.

National Homebrew Competition

2001 started to see growth in the number of NHC entries for the first time in several years under the direction of AHA Project Coordinator Gary Glass. It would be awesome if we could grow the competition to over 3,000 entries. Even right now, the NHC is the largest beer competition in the world. I also have the hope that the AHA Board of Advisors competition committee can come up with a suitable solution



to the issue of the entry procedures for national Internet-based clubs in a competition that starts regionally. Look for the rules and regs for the NHC on www.beertown.org. The entry form is in this issue. In another competition-related issue, I would like to see AHA continue its role as the lead marketer of sanctioned competitions and provide training materials to competition organizers, but I would like to see some of the redundancy reduced by working further with the Beer Judge Certification Program.

National Homebrewers Conference

My goal for the AHA National Homebrewers Conference is more of the same, as it has been an outstanding grassroots event for several years now. The conference will be held June 20-22, 2002 in Irving, Texas. The local coalition of homebrew clubs that is hosting the event negotiated an excellent room rate and the hotel is a short shuttle away from Dallas/Fort Worth airport. The hotel staff has a surprisingly thorough understanding of our needs (homebrew in hotel guest's hands at any hour of the day in any location of the hotel). Conference Chair Dave Dixon has the full resources of the brewers that put on the largest single-site homebrew competition, the Bluebonnet Brew Off, so there is already organizing expertise in the area. Hopefully we can lure two-time homebrewer of the year, Charlie Gottenkieny to share his knowledge of lambics during one of the seminars.

AHA Big Brew

The 2001 Big Brew had fewer sites than in 2000. At first I was a little concerned until I saw the number of people participating at each site had grown, and that we had several hundred more brewers overall participating. To me that shows that homebrewers are making a bigger deal out of their sites and getting together to a greater degree. So my goal for 2002 is even fewer sites, say 175, with lots more people at them—perhaps 2,500 can be achieved.

Throw a party. Invite brewers and non-brewers to both Big Brew and Teach a Friend to Homebrew Day. Big Brew will again be the first Saturday of May. Teach a Friend to Homebrew Day will be the first Saturday of November unless there is a compelling reason to move it.

AHA Legalization Campaign

My goal is to get legislation to legalize homebrewing passed in two of the six states where homebrewing is not believed to be legal. This goal may not be realistic and may be out of the control of volunteers working in Alabama, Iowa, Kentucky, Mississippi, Oklahoma and Utah, but we keep trying and AHA will continue to offer assistance to member volunteers. The most active states that will hopefully enact legislation in the next few years are Alabama and Mississippi in my opinion.

And, drum roll please...

Big Mead

Ed Busch, longtime AHA Board of Advisor member, whispered this idea to me at the AHA Conference this year. AHA has covered mead since the earliest issues of *Zymurgy*. (Barkshack Ginger Mead, anyone?) Now that we have the registration template on beertown designed for Big Brew, it should be easy to put together Big Mead for the first Saturday of August (halfway between Big Brew and Teach a Friend to Homebrew Day. See a pattern developing here? Any ideas for the first Saturday of February anyone?)



Why Big Mead? Why not? Big Mead will be another reason to brew and get together with friends and keep those kettles from getting rusty in the summer. Mead is more forgiving to the elevated fermentation temperatures of summer than beer, and a good mead can be a wonderful thing.

Think Big!

Homebrewer and former homebrew shop owner Paul Gatzka is the director of the AHA.

BY RAY DANIELS

Harnessing the Passion of Homebrewing

The most exciting brewery in America is run by a woman. It gives one dollar from every barrel to charity. It sells beer fermented in wooden barrels. In 2000 it sold more beer than Anchor, Widmer, Pyramid, Harpoon, Boulevard, Goose Island or Shipyard. But unless you happen to live in one of just 13 states where they currently distribute product, you'll have a hard time finding their beers in your local liquor store.

The brewery is New Belgium Brewing Company, the fastest growing brewery of significant size in America and also the most exciting by many measures. As a frequent visitor to their home state of Colorado, I've known about the brewery for a number of years—although I must confess I'm not sure that I had ever purchased one of their beers until recently. All of that changed one recent Friday night when I visited the Ft. Collins-based brewery.

What I found was a brewery born of homebrewing. More surprising was that despite a decade of phenomenal commercial success, the spirit homebrew still pervades the organization.

Signs of this are everywhere from the chunky black sound system speakers chained to I-beams in the fermenter farm to a two-story stainless steel corkscrew of a slide installed in the offices "just for fun." Slather that with a remarkable commitment to energy conservation, employee ownership and open books management and you wind up with the kind of outfit that many outsiders consider in the same light as much of homebrewing: goofy.

But here's the rub. Amidst all that is starry-eyed and utopian at New Belgium, they make very good beer. Very good as in great recipes. Very good as in clean and consistent. Very good as in I wound up with four glasses in front of me at dinner that night.

PHOTO BY RAY DANIELS



New Belgium won four medals at the Great American Beer Festival this year—more than any other single brewery in 2001. What's more, the beer they are best known for among consumers and the product that accounts for at least 70 percent of their estimated 235,000 barrels in 2001 output wasn't one of the medal winners. This flagship beer is Fat Tire Amber Ale, a product with mass appeal that one reviewer described as "a beer that tastes good and is easy to swallow."

While many homebrewers might find Fat Tire unexciting, it is the golden goose that makes many of the cool things about New Belgium possible. It is, if you will, the "day job" that allows the brewery to have a rich and enjoyable other life. The products of this second life cover the full spectrum of Belgian beer, and then some. Of course they offer an Abbey beer, a Tripel and a Saison. When it comes to fruit, they regularly offer a brown ale called Frambozen, flavored with raspberries, and a recent special beer called Two Cherry Ale flavored with Montmorency cherries. Only slightly surprising are the brewery's

spiced Sunshine Wheat ale (a la wit) and its superbly designed Blue Paddle pilsener.

For most bottling breweries, these seven offerings would be enough—if not too much. But as usual, New Belgium takes things further than you might expect. For starters, there is 1554, a Brussels-style black ale based on recipes found in old Belgian brewing books. The yeast is a lager strain, but the fermentation is more ale like; the product is unique. Next we have Biere de Mars, a smooth, orange-hued brew that includes oats and wheat as well as a pinch of lemon verbena. And for those in need of something more traditional but still obscure, how about the hoppy Porch Swing, modeled after Abbey single ales usually reserved for consumption inside the monastery.

Any brewery offering such a line-up of beers is deserving of praise and admiration. But these beers are not the reason that my friend Jeff Sparrow kept wandering off from the group during our visit to New Belgium. You see Jeff has a jones for sour beers. He and buddy Joe Preiser have jointly cornered the market for lambics and similar Belgian fare here in Chicago, regularly buying up arriving rarities by the case. For Jeff, these 10 beers were nothing compared to New Belgium's aptly named folly, or "La Folie."

La Folie is a sour brown ale that traces its heritage to the Belgian classic Rodenbach. Its appearance is not too surprising given that New Belgium's brewmaster is Peter Bouckaert, a veteran of the Rodenbach brewery. Still the production of such a beer is surprising in any modern brewery as the organisms responsible for the unique flavors of sour beer are generally ruinous if unleashed in standard brews. To counter this, Bouckaert approached the making of sour beer with dedicated fermenters. Wood fermenters, in fact.

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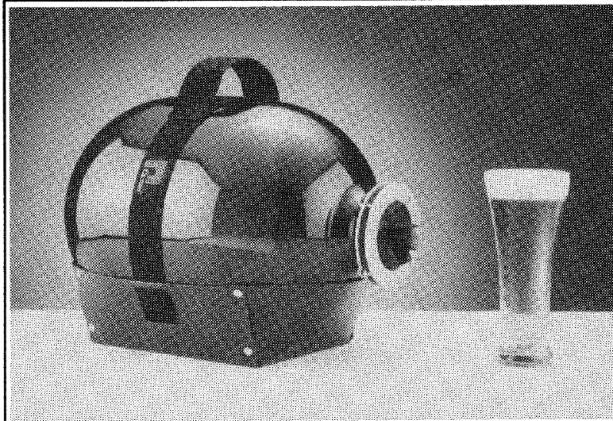
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Our tour through the six miles of gleaming stainless steel and high-tech German brewing equipment in New Belgium's facility brought us eventually to a remote passageway of the brewery. Here we found a stack of wooden barrels, scribbled with chalk. And across the aisle loomed ten 20-barrel wooden fermenters. All these vessels were filled with fermenting beer infused with bacteria and wild yeasts that would make most sane brewers shudder. For Jeff, it was a shrine of messianic proportions.

Many of you out there in homebrewland have messed with quirky fermentations—indeed we did an issue on the subject just last summer. But the New Belgium approach shows how to get results. The collection of barrels we saw were essentially the pilot plants. Fermentations were undertaken in each barrel using different mixtures of organisms. After some time, the resulting beers were sampled and the best ones were used to inoculate the larger production vessels. As a result La Folie, which made its initial public appearance as a limited release of 3,000 hand-filled bottles sold only at the brewery, may soon be available in more robust quantities.

The mastermind behind all of this is a quiet, curly-haired electrical engineer. Jeff Lebesch spent 10 years homebrewing, but a trip to Belgium convinced him that he had to enter the world of professional brewing. Interestingly enough, famed beer writer (and maniacal Belgian beer fan) Michael Jackson advised him against it, saying that he didn't think the US was ready for a brewery that made nothing but Belgian-style beers. Fortunately Lebesch carried on anyway, beginning production in the basement of the house he shared with wife (and New Belgium CEO) Kim Jordan. Today they direct the activities of a rare undertaking: a fast-growing commercial enterprise with a soul that matches its success. As a result, we as homebrewers can look on what they are doing not only with admiration, but also with a glimmer of recognition, for we understand what it means to follow your passion in the making of good beer.

Ray Daniels ferments his worts in Chicago—one market where you can't get New Belgium products—so be kind and bring some along next time you head that way. ☺

Coaxing the Genie From the Bottle

Dear *Zymurgy*,

I just finished reading Amahl Turczyn's very fine article on yeast culturing from a bottle in *Zymurgy*, Vol. 21, No. 4, Nov/Dec 1998. I tried to get to the site mentioned at the close of that piece that lists commercial culturable beers and I am unable to find it. Do you know if Anders Lundquist's site can be found elsewhere, or if there is another site that might yield the same information? I've just returned from Europe with a couple of very fresh bottles of Chimay and a few more of a Belgian dubbel called Grimbergen. I think the Chimay yeast is supposed to be the same as Wyeast 1214. Do you know what the other might be? Are these both examples of unpasteurized bottle conditioned yeasts that are the same strains as what was used for the initial fermentation?

Many thanks in advance for any help,

Brad Hunter
Appleton, ME

Brad,

The site you want is at www.nada.kth.se/~alun/Beer/Bottle-Yeasts/ They might have changed the address since that article was published. While using commercially available yeast is far safer from a bacteriological standpoint, yeast companies would be hard pressed to release all of the hundreds of Belgian yeast blends. This is what makes yeast culturing at home so fun and rewarding. So as long as you know you have a primary strain in the bottle, you can duplicate the unique character of certain Belgian beers by re-using the authentic yeast.

Which brings us to your second question: does Grimbergen use a primary strain to condition its beers? Unfortunately, we haven't heard the answer to that one. But it is fairly easy to inoculate a small volume of brewer's wort



with the bottle yeast, ferment it at room temperature, pour the beer off the yeast and then taste it. Most breweries that bottle condition with a strain that is different from the primary one will use a very neutral-tasting yeast; often it is also a lager. So if your fermented sample either tastes like a lager fermented warm or a very clean-tasting ale, you are probably out of luck. If, however, the wort tastes a lot like Grimbergen, you can probably go ahead and brew with the yeast you've cultured.

—Editor

Five for the Road

Dear *Zymurgy*,

My brother and I were returning from a one week vacation in the Grand Tetons and Yellowstone Park when we wandered through Idaho Falls on our way back to Salt Lake City. After several days and great beers at the Snake River Brewery and Mammoth Hot Springs, we didn't expect to get any "good" beer on our last night in Idaho Falls. While we were looking for a place to stay, we noticed a grain silo with a large Mr. Hops logo on it, so we stopped.

Upon first glance, the building looked like a brewery and not a brewpub, so we thought we were out of luck. We walked around the building, and found all the doors locked.

However, there were two cars in the parking lot and a garage door was open. We walked through the open door where we found two men washing down the floor. When I asked the men if there was any place in town where we could try their beer, I was completely surprised when one of them took us into their tasting room for some sampling.

The two gentlemen made us at home while he described the seven beers on tap. We tried several (brown ale, wheat, pale and IPA) and they were all excellent. Then the other gentlemen came in and asked us if we wanted a tour. We agreed as they filled our glasses with our favorite beer (which was hard to pick), and took us on the most in depth and personal tour I ever had.

I was interested to learn that most of their brewing equipment and controls were made and designed locally. I was impressed with the heat exchanger used for pasteurization, and how energy was recovered from the brewing process. It was apparent that these guys had done their homework.

As we were about to leave, the one gentleman reached into the cooler and gave us a broken (five beers) six pack of Pale Ale for the road. I never met such friendly people! My brother and I were simply overwhelmed at the hospitality these two gentlemen at Idaho Brewing Co. showed us during our brief visit. This was without a doubt the single most memorable brewery experience that I ever had. Hats off to the guys at Idaho Brewing for making great beer and our visit one that we will never forget.

Sincerely,
Jim and Ed Waller,
Baltimore, MD and Tucson, AZ

Dear Jim and Ed,

Always good to hear beer travel stories, especially ones about craft breweries in the good

We walked through the open door where we found two men washing down the floor. When I asked the men if there was any place in town where we could try their beer, I was completely surprised when one of them took us into their tasting room for some sampling.

old US of A. Next time we're on the road to Yellowstone, we'll stop by Idaho Brewing Company and say hello.

—Editor

Going with the Flow

Dear *Zymurgy*:

The "For Geeks Only" article discussing Lauter Dynamics in the Sept/Oct 2001 issue of *Zymurgy* was very interesting and informative. The authors are to be commended for the great deal of effort placed in analyzing the problem and performing the computer runs. Yet no mention was made of the flow rate through the grain bed.

The predicted effects may be largely driven by the dynamics of the rate of flow. The author's results indicate I may need to change my tun design, but before doing so I would like to know if the model's flow rate is close to the five gallons per hour generally used by homebrewers in the sparge. Did the authors perform a check run to see at what flow rate the predicated results for the baseline model are reduced by half (i.e. oversparge drops from 10.7 percent to 5.4 percent)? It seems reasonable that the gradients observed in Figure 3 are rate driven and will be diminished if the driving force is reduced.

Greg Terpay

John Palmer and Brian Kern respond:

Our models were founded on four assumptions, which were not listed in the article. These assumptions are: (1) The grainbed permeability is uniform, (2) the grain is not absorbing or seeping water (i.e. as much water flows out as flows in), (3) the flow is not turbulent (flow rate < 1 gal/minute), and (4) the amount of sugar extracted from a region of grain is proportional to the amount of water that flows through that region, until all of the available sugar is extracted.

The first three assumptions determine the characteristics of the fluid flow, and the fourth assumption (the sugar / rinsing relationship) defines how the fluid flow effects extraction efficiency. In any ordinary homebrewing setting, the first three assumptions will be satisfied. Cranking through the math on the first three assumptions tells us that the fluid flow characteristics do not depend on the overall flow rate, as long as assumption (3) is valid (< 1 gal/minute).

It is commonly believed that sparging too fast leads to low extraction—to the extent that this is true, it implies that our fourth assumption, the sugar extraction / flow volume assumption, is incomplete. There must either be an additional component (i.e., an explicit time dependence) or a non-linear relationship between sugar extraction and amount of rinsing. This does not change the flow distribution, but may change the impact undersparging has on extraction efficiency. A better understanding of the relationship between sugar extraction and fluid flow (and possibly other factors) would lead to a more accurate understanding of how lauter tun design affects extraction efficiency, but should not change the general conclusions presented in the September/October article.

To summarize, our current models have nothing to say about the "best" sparging rate. We welcome any quantitative input from the homebrewing community relating actual flow rate to sugar extraction—armed with better data, we could answer the question of how fast one should sparge for best extraction, and describe a more accurate relationship between lauter tun design and extraction efficiency.

—Editor

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HOMEBREW CLUBS

BY GARY GLASS

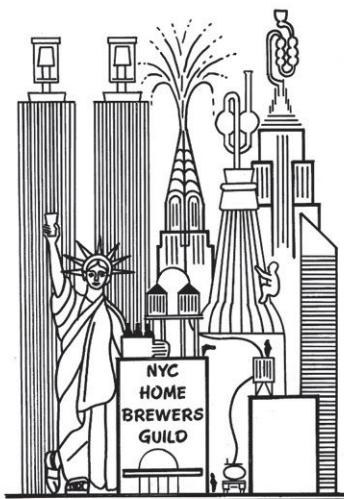
Still Brewing In New York City

Seven days after the World Trade Center tragedy, the members of the New York City Homebrewers Guild (NYCHG) met for their September meeting. The club's meeting place, Brewsky's, is a beer bar just two miles from the WTC. Miraculously, none of the club members were injured even though one member had been in the World Trade Center at the time of the attack and another witnessed the attack while on the way to the complex.

For the club members reeling from the events of the previous week, sharing a few pints with friends proved to be a much-needed respite. Twenty-five Guild members attended the September meeting, normal attendance for a NYCHG meeting. "This was a time to share a round among friends," states club Treasurer Rich Medina. "This was a time for beer to act as a healing elixir for some wounded souls. This was a time to gather and reflect as family."

At the meeting, club president Phil Clarke read a letter from Diana Theall, president of the ALEian Society in Lubbock, TX. While ALEians had been going through club-donated raffle prizes for their Cactus Challenge homebrew competition they came across an NYCHG t-shirt that featured the World Trade Center towers in the logo. Stunned by the image, the ALEians decided to hold a separate raffle for the t-shirt at \$5 per ticket with proceeds going to a charity to be named by the NYCHG. The raffle drew \$510 worth of ticket sales that the Homebrewers Guild donated to the Red Cross.

The fact that so many NYCHG members showed up for a meeting just one week after the World Trade Center attack and the generous raffle donation from the ALEian Society clearly demonstrate the importance of the homebrewing community in our lives. It is comforting to know that when tragedies



occur we can count on our fellow brewers to help us make it through. For homebrews interested in helping out, Phil told me that the club was fine and didn't need anything, but he urged brewers to consider donating to the Red Cross.

The New York City Homebrewers Guild, founded in 1987, is New York City's oldest homebrew club. The club has been home to some pretty successful brewers in its fourteen plus years of existence. Sal Penacchio, president of Old World Brewing Company in Staten Island, was an early member of the club. Guild co-founder, Garrett Oliver, now the Brewmaster and Vice President for Production at Brooklyn Brewery, is one of the most respected brewers in the country (Garrett Oliver was featured in "Brewer's

Favorites" in the March/April 2000 issue of *Zymurgy*). Phil Clarke, the club's current president writes for *Ale Street News*.

The Guild is planning a Fifteenth Anniversary celebration this coming April, and hopes to bring many of the club's alumni that have moved on back for a NYCHG reunion. In honor of the occasion, the club will be serving up 20 gallons of Old Ale that they brewed last spring.

The 80 plus Guild members participate in a wide variety of activities, including picnics and fairly regular pub crawls. For the last three years, club members have made the trek up to Red Hook, NY for the annual cider press hosted by Gloria and Bob Franconi of Party Creations (Gloria runs the AHA National Homebrew Competition's Cider site). In March, NYCHG is hosting the AHA's Porter Club-Only Competition.

Despite the difficulties of homebrewing in New York City—try to picture your brewing

Homebrew Club of the Year Standings

Points	Club
7	ZZ HOPS
6	Foam on the Range
3	Brew Rats
3	Prairie Homebrewing Companions
1	Pint and Pummel

2002 AHA Club-Only Competitions Styles

Month	Style or Name	Cat.#	Host
February	Scottish Ales	5	Quality Ale and Fermentation Fraternity
March	Porter	15	New York City Homebrewers Guild
May	India Pale Ale	7	Gasconade Brewing Society
August	American Lager	1	Beer Unlimited Zany Zymurgists
Sept/Oct	Strong Belgian Ale	18	Minnesota Homebrewers Association
Nov/Dec	Fruits & Veggies	21, 22	Dukes of Ale

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"Kilts & Schillings" Scottish Ales AHA Club-Only Competition

The January AHA Club-Only Competition is "Kilts & Schillings." The competition is hosted by Greg Lorton and Quality Ale and Fermentation Fraternity (QUAFF), the reigning AHA Homebrew Club of the Year.

The Style for the competition is Scottish Ale, Category 5. One entry of two bottles is accepted per AHA registered homebrew club. Entries require a \$5 check made out to AHA and an entry/recipe form and bottle i.d. forms. More information on the club-only competitions and forms are available at <http://www.beertown.org/AHA/Clubs/clubcomp.htm>.

Please send your entry to:

**AHA COC
C/O AleSmith Brewing Co
9368 Cabot Dr
San Diego, CA 92126**

Entries are due by January 25, 2002. Judging is slated for February 2, 2001. Email for questions is glorton@cts.com.

set-up in one of those notoriously tiny New York City apartments—NYCHG has been very successful in recruiting new members. Last year, the club brought in 22 new members. Club president Phil Clarke reported that they had just recently ended a streak of nine straight meetings with new members in attendance. These guys obviously must be doing something right! For more information on the New York City Homebrewers Guild and to check out pictures of club members, see their website at <http://www.pipeline.com/~doggiebe/nychg.html>.

Esteemed California Common Competition

The AHA would like to thank Tom Hamilton, John Aitchison, and the Maltose Falcons of Woodland Hills, CA for hosting the Esteemed California Common Club-Only Competition held October 6, 2001. This was the second of six competitions in the August to May 2001-2002 cycle, with points going toward the Homebrew Club of the Year trophy. Points are awarded on a six-three-one basis for the club-only competitions and the first and second rounds of the AHA National Homebrew Competition. The club whose members have amassed the most points over the year is crowned the Homebrew Club of the Year.

Thanks to all of the club representative brewers who entered. There were 26 entries in the AHA Esteemed California Common Club-Only Competition.

Congratulations to the following winners:

1st Place:

Mike Hahn of Salt Lake City, UT representing the Zion Zymurgist Homebrew Operatives Society (ZZ Hops) with "Steam Beer."

2nd Place:

James Austin of Brownville, NB representing the Brew Rats with his California Common.

3rd Place:

Jim Burge and Ed Miles of Olathe, KS representing Pint and Pummel with "Wounded Knee."

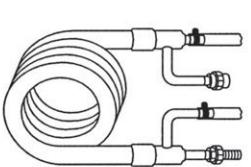
Gary Glass is the Membership Coordinator for the American Homebrewers Association. When he isn't homebrewing he can be found working on his Masters Thesis in U.S. History. ☺

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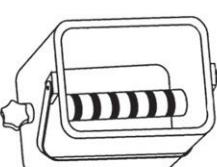
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To become an AHA sponsor simply fill out the form and fax it back to 303.447.2825 or call membership services at 303.447.0816 or visit www.beertown.org. Thank you for considering sponsorship of the American Homebrewers Association.

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Paul Gatz
Director, American Homebrewers Association

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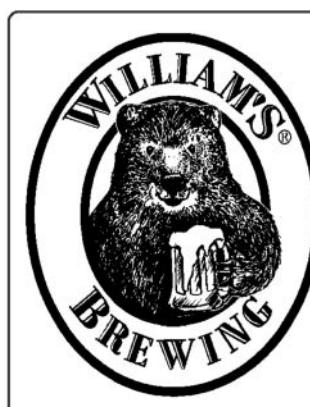
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Lifetime Members

Here is a list of new Lifetime Members and Lifetime members we omitted on previous lists:

Roger Bauer Tukwila, WA	Alberto Cardoso Brussels, Belgium
Norm Bauer Bremerton, WA	Kraig Krist Annandale, VA
The Flying Barrel Frederick, MD	



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CALENDAR

AMERICAN HOMEBREWERS ASSOCIATION

JANUARY

- 11** Big Beers, Belgians & Barleywines Festival - Barleywines & Strong Ales Competition, **AHA SCP**, Vail, CO. Competition scheduled for Friday night, at the Half Moon Saloon, Vail, Colorado. The Big Beers specialty beer tasting is scheduled to follow on Saturday afternoon, January 12, at 8150 Nightclub in Vail Village. Contact: Laura Lodge, 970-524-1092 info, 970-977-0100 home, llodge@hotmail.com.

- 19** 7th Annual Big Bend Brew-Off, **AHA SCP**, Tallahassee, FL. This one-day competition is for all categories of beer, mead and cider. The event is held at the Buckhead Brewery & Grill. Deadline: 12/31-1/12. Fee: \$6. Contact: Peter Pellemans, 850-425-1048 info, peter@pellemans.net, www.nfbl.org.

- 26** Meadlennium V, **AHA SCP**, Orlando, FL. Experience one of the few Mead-Only competitions held in the USA. This well established competition features beautiful Medal awards, for all 8 BJCP Mead subcategories, and a special glass for each first place. Deadline: 1/4-1/22/02, Contact: Ron Bach, 407-262-7422 x 105 work, 407-696-2738 home, bachin@juno.com, www.CFHB.org.

FEBRUARY

- 2** Kilts & Schillings Scottish Ales AHA Club-Only Competition, **AHA SCP**, San Diego, CA.

Hosted by QUAFF. AHA Registered Clubs may submit entries. Winning clubs earn points toward the AHA-Club of the Year Award. Deadline: 1/25. Fee: \$5 (make checks out to the AHA). Contact: Greg Lorton, glorton@cts.com, www.beertown.org/AHA/Clubs/clubcomp.htm.

- 9** The Coconut Cup, **AHA SCP**, Coral Gables, FL. The Miami Area Society of Homebrewers hosts the 5th Annual Coconut Cup. Deadline: 1/21-2/2. Fee: \$6. Contact: Jacob Miller, 305-446-6692, jakem1@ix.netcom.com, www.hbd.org/mash/coconut.html

- 15-16** Kansas City Bier Meisters 19th Annual Homebrew Competition, **AHA SCP**, Lenexa, KS. This isn't just any old Homebrew Competition; the fun will also include a pub-crawl and an awards ceremony. Deadline: 1/14-2/2. Fee: \$6. Contact: Jackie Rager, 913-962-2501 info, 913-894-9131 home, jrager@swbell.net, www.kcbiermeisters.org.

MARCH

- 1-2** Real Ale Festival, Chicago, IL Homebrewed real ale competition on February 28th followed by festival featuring America's largest collection of cask-conditioned beers. For more information, see www.realalefestival.com or call 773-665-1300.
- 1-2** America's Finest City Homebrew Competition, **AHA SCP**, San Diego, CA. QUAFF San Diego sponsors the 9th annual homebrew competition. This is typically one of the largest events on the west coast, with over 300 entries. Deadline: 2/8-2/22. Fee: \$6. Contact: Randy Barnes, 858-663-0305 info, 619-388-6530 work, rbarnes@sdcod.net, www.softbrew.com/afchbc.

- 2** Mill Creek Classic, **AHA SCP**, Salem, OR. Deadline: 2/16-2/23. Fee: \$6 for 1st, \$5 for each after. Contact: Sandy LaDue and Harvey Twombley, 503-581-4190 info, roseymum@aol.com.

- 9** 2002 St. Patrick's Cascadia Cup Homebrew Competition, **AHA SCP**, Seattle, WA. The 6th annual competition will be held at Hales Ales Brewery in Seattle, sponsored by Cascade Brewers Guild. Deadline: 2/22-3/3. Fee: \$6. Contact: Lori Brown, 425-771-7602 info, loribrown@worldnet.att.net, www.cascadebrewersguild.org.

- 23** Drunk Monk Challenge, **AHA SCP**, Warrenville, IL. Sponsored by the Urban Knaves of Grain, this homebrew competition will be held at Two Brothers Microbrewery in Warrenville, IL. Deadline: 3/7-3/15. Fee: \$6 for 1st, \$5 for add., all \$5 if entered online, \$2 for Menace of the Monastery entry. Contact: Luann Fitzpatrick & Laurel Coombs, 630-393-7303 info, 630-226-2729 work, lcoombs@sgu.net, www.sgu.net/ukg/dmc.

AMERICAN HOMEBREWERS ASSOCIATION

• KUDOS • SANCTIONED COMPETITION PROGRAM BEST OF SHOW

MARCH 2001

Hudson Valley Homebrewers 11th Annual Homebrew Competition, 181 entries
Manny Holl of Poughkeepsie, NY

JULY 2001

E.T. Barnette Homebrew Competition, 64 entries - **A.J. Zanyk** of Grandview, OH

AUGUST 2001

Colorado State Fair, 75 entries - **Dale Brown** of Aurora, CO
Evergreen Sate Fair Home Beer Brewing Competition, 77 entries. - **Jon Tobey** of Kirkland, WA
Kentucky State Fair, 95 entries - **Nathan Sasse** of Pewee Valley, KY
6th Annual, Montgomery County Agricultural Fair Amateur Homebrew Competition, 66 entries
Steve Laughlin of Derwood, MD

Western Washington Fair Amateur Beer Competition, 122 entries
Ben Miller of Tacoma, WA

SEPTEMBER 2001

Cactus Challenge, 216 entries - **Larry D. Pyatt** of Lubbock, TX

Eastern Idaho State Fair, 39 entries

Dine Smith of Blackfoot, ID tied with **Harry Rollins** of Idaho Falls, ID

Northern New England Regional Homebrew Competition, 241 entries
Thomas J. O'Connor III, M.D. of Rockport, ME

Mid South Fair, 93 entries - **Kenny Mc Donald** of Memphis, TN
Santa Cruz County Fair Homebrew Competition, 43 entries
Nick Van Bruggen of Scotts Valley, CA

Tulare County Fair Homebrew Contest, 29 entries - **Hector Charcon** of Tulare, CA

OCTOBER 2001

Schleswig Wine & Bier Contest, 74 entries - **Martin Appelt** of Sioux City, IA
Wild Brew III, 128 entries - **John Karmazin** of Claremore, OK

APRIL

- 23-24** 2002 Bluebonnet Brewoff, **AHA SCP**, Irving, TX. The largest, single-site Homebrew Competition is sponsored by the Knights of the Brown Bottle and the Bluebonnet Committee. As the Bluebonnet heads into its 16th year, it also is the 1st in the Gulf Coast Homebrewer of the Year Competition. Deadline: 2/9-3/1. Fee: \$7. Contact: Steve Wesstrom, 817-832-8916, sgwesst@aol.com, www.hbd.org/bluebonnet.

- 29-30** Hurricane Blowoff 2002, **AHA SCP**, West Palm Beach, FL. The Palm Beach Draughtsmen sponsor the seventh annual homebrewed beer and mead competition. Deadline: 3/11-3/26. Fee: \$6, \$5 for four or more entries. Contact: Bill Eubank, 561-588-0106 info, 561-793-3400 work, weubank@aol.com, www.fortunecity.com/littleitaly/giotto/175.

MAY

- 4** 5th Annual AHA Big Brew. Celebrate National Homebrew Day with the American Homebrewers Association's 5th Annual Big Brew, a day of simultaneous brewing across the globe! Contact: Gary Glass, 303-447-0816 x 121, 888-U-CAN-BREW, gary@aob.org, www.beertown.org.

AHA SCP = American Homebrewers Association Sanctioned Competition Program. For a complete listing of events, see www.beertown.org. To list events, send information to **Zymurgy** Calendar of Events. To be listed in the March/April 2002 Issue (Vol. 25, No. 2), information should be received by January 10, 2002. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months prior to the event. Contact Kate Porter at kate@aob.org; (303) 447-0816 ext. 123; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679.

BY AMAHL TURCZYN

Real Ale Boddingtons

You may have run across Boddingtons in your local beer store or supermarket, whether you live in the US, New Zealand, China, or one of 30 other countries worldwide. "The Cream of Manchester" is one of the UK's top exports, though fans in England have been enjoying it for more than 200 years. Of course, outside of England you are far more likely to find the kind of Boddingtons that comes in the tall yellow 'nitro' can. While this is no doubt a popular beer, the Boddingtons we're interested in here is the real ale version that packs a considerably larger amount of flavor. We're homebrewers—we deserve the good stuff!

But first, a little history. Back in Manchester, in the late 1700s, a couple of forward-thinking grain merchants, Thomas Caister and Thomas Fry, realized that their workers would appreciate some liquid refreshment after a hard working day. So they built the Strangeways Brewery, which quickly developed a reputation for quality ale.

Henry Boddington was born in 1813, and at the age of 19 was employed as a "traveller" for the brewery, rising rapidly to become a partner in the Brewery, which was renamed John Harrison and Co. Henry took out a huge loan in 1853 and became the sole owner, and by 1877 over 100,000 barrels of beer were being brewed on site.

Later, Henry's son Henry Junior took over and the Brewery was renamed Henry Boddington and Son. Following the death of Henry senior in 1886, the company is renamed Boddingtons Breweries Ltd, a true public company. On the night of December 22, 1940 German bombers knocked out the brewery's water tanks and left the brewery in flames. New Chairman Geoffrey Boddington, however, used the damage as an excuse to further modernize the plant.

With its continued success, Boddingtons signed a trading agreement with Whitbread



in 1971. Whitbread purchased the brand and the brewery in 1989. In the early 1970s a new logo was introduced which included the famous barrel and the two bees. The bees symbolize Manchester's reputation of being the "hive of industry" during the Industrial Revolution.

Most recently, in May of 2000, the Whitbread Beer Company became part of Interbrew, which gave Boddingtons even more marketing muscle, thus its spread to nations around the globe.

Part of the appeal of the beer, though, comes from its original purpose—it's a thirst-quencher. Not a hugely hoppy beer, it still has a fruity, floral nose from late additions of Goldings and Fuggles hops, and with its modest grain bill and a small amount of sugar, the finish is still dry and crisp enough to convince the drinker to have another sip. But all this comes from balance, and as a brewer, this means practicing a little restraint. This is a session beer, so like the famous mild ales of Britain, everything is added in smaller proportions.

The grain bill, for example, calls for only six pounds of good British pale ale malt. You can of course substitute American two-row, but throw in a few ounces more if you do so, as the extract from domestic malts tends to be a hair less. *(continued on page 63)*

Boddington's Clone

Recipe for 5 gallons (19 L)

6	lb UK pale ale malt (2.7 kg)
5	oz 75°L crystal malt (142 g)
3	oz cane sugar (85 g)
1	oz Kent Goldings pellet hops, 4.75% alpha acid (28 g) (60 min)
0.25	oz Kent Goldings pellet hops, 4.75% alpha acid (7 g) (20 min)
0.25	oz Fuggles pellet hops, 3.5% alpha acid (7 g) (15 min)
0.25	oz Kent Goldings hops, 4.75% alpha acid (7 g) (5 min)
1	tsp Irish moss (4.9 mL) (15 min) Wyeast No. 1028 London ale yeast or White Labs English ale yeast
0.75	cup corn sugar (177 mL) for bottle priming or 0.66 cup (156 mL) for keg priming

Brewer's specifics: Mash grains at 150° F (65° C) for 60 minutes. Sparge, boil 30 minutes, and add hops at indicated intervals. Do not add sugar until 15 minutes before the end of the boil (a darker color and caramelized flavors can result from adding sugar too early.) After the boil, whirlpool and rack off of break material, then chill to 65° F (18° C), and pitch yeast. Ferment, then rack with gelatin finings and allow the beer to clarify. Condition another week at 50° F (10° C). Bottle with corn sugar and allow primings to work at 70° F (21° C) for an additional 1 to 2 weeks.

Extract version: Substitute five pounds of light malt extract syrup for the pale ale malt. Steep crushed crystal malt in 150° F (65° C) water for 30 minutes, bring to a boil, turn off the burner and add extract. Resume boil and hop additions. Again, do not add sugar until 15 minutes before the end of the boil (a darker color and caramelized flavors can result from adding sugar too early.) Finish as above.

- Boiling time: 90 minutes
- Original gravity: 1.038
- Finishing gravity: 1.008

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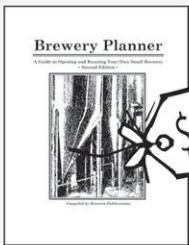
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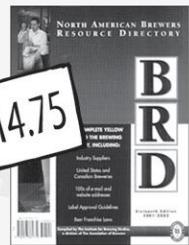
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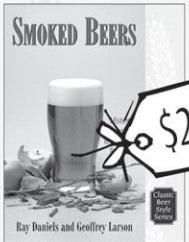
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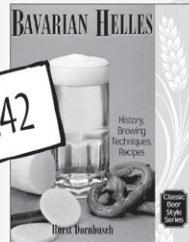
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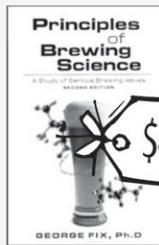
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Horsing Around with Gravity

Dear Professor,

I recently made a California Common beer, but my gravity came out to 1.060 (15) rather than the 1.054 (13.5) I was shooting for. As a result, the fermented beer is too sweet & malty. At this stage, is there any way to add back bitterness? If I dry hop it, I know that will add to the hoppy aroma, but will dry hopping with a high-alpha hop help me balance out the beer?

Clyde Dale,
St. Louis, MO

Dear Clyde,

One of the first things that I would think of is to calculate the greater percentage of gravity you ended up with. That is about 10%. If you were to add 10% more water (de aerated) to the final volume of your beer you would then approximate (and I estimate approximate) the malt flavor balance, but with the added volume you will have diluted the hop balance even more. But perhaps the lighter body may accentuate what hops you do have. You can always experience by putting 10 ounces of beer in a glass and adding one ounce of water and see if that helps.

To answer your question directly regarding, "is there any way to add back bitterness?" Yes there is, if you have access to isomerized hop extract. Hop extract is not hop oil, but rather the useful bitter component of hops. Using this requires some careful attention to instructions and exact measurement. The stuff is relatively more difficult to use with your typical five-gallon batch of homebrew because the amounts used are measured in parts per million and often require dispersion of tiny amounts in an alcohol base and then further mixed and diluted in small amounts of beer before

being added and mixed into the beer.

Dry hopping will add a sensation of bitterness, but will obviously also add lots of flavor and aroma that may not be desirable stylistically. Dry hop bitterness is not quite the same sensation as boiled hop bitterness.

An alternative would be boiling some hops in a small amount of water until aroma and flavor components are boiled off, then adding enough of this tea to your beer to approximate your desired balance of hop bitterness and malt sweetness.

So there you have it. Your choice.

Thank goodness for gravity,
The Professor, Hb.D.

Mr. Prickles Rides Again

Dear Professor,

We have a bumper crop of prickly pears this year (the red fruit of cactus plants) and I was wondering if anyone has ever done a prickly pear beer...maybe a stout? If you've ever heard of a recipe, I'd love to see it. Also, how would you prepare these fruits for fermentation?

Jon Appleton
Tuscon, AZ

Dear Jonny,

I wonder how "bumper crops" translates into another language? Meanwhile, I would guess that someone has made a prickly pear beer. But I don't know who they are.

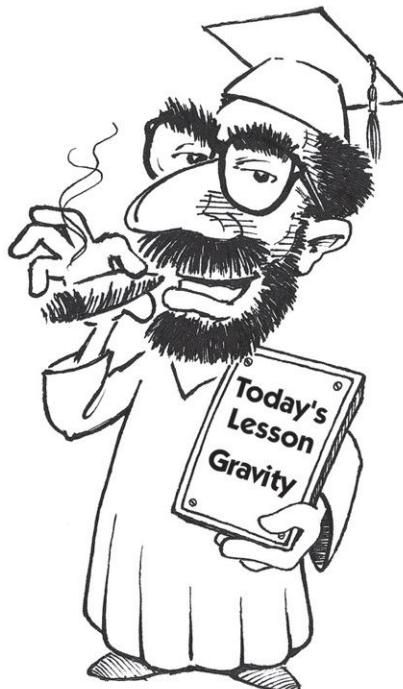
Prickly pear fruit is rather mucilaginous, especially in there fresh cut stage. Because of that mucilaginousness (say that three times fast and blow your nose) I would recommend boiling the fruit for at least 45 minutes. This lends itself to adding the cut fruit directly to the boiling wort. The prickles degrade enough to fall out to the bottom or be filtered out with straining and sparging. Note prickly pears will add body to your beer—keep that in mind. How much to add? For a light beer I'd start out experimenting with about one to one and a half pounds. For a stout, start out with two to three pounds. That's my suggestion; having made lots of mead with prickly pears, I wouldn't want to over-do the amount, because of the thick consistency it would add to a beer.

Prickles,
The Professor, Hb.D.

Haze Crazy

Dear Professor,

I love hop aroma and tend to add lots of late and dry hops to my beers. When I



do this, however, the beers almost always have a haze to them that I don't get otherwise. Is it possible to hop these beers to the hilt and still have them come out clear? Any suggestions would be welcome.

Harry Hickenloopulus,
Gloucester, ME

Dear Har,

As a homebrewer I don't confidently know how you would do this. My inclination would

be to suggest cold lagering until the haze drops out naturally, but that seems an unlikely suggestion for success. Pro brewers will use filtration to filter out this kind of haze. This is not practical for homebrewers. If it were me, I'd be stuck with a little haze. It doesn't bother me, because when I'm drinking beer that good, I usually close my eyes and think I'm in heaven anyway.

*Blind to hop haze,
The Professor, Hb.D.*

Extracting the Truth

Dear Professor,

I want to make a stout, like Guinness. I'm an extract brewer, and I've seen dark malt extract at the brew shop, but I've also read a lot of recipes that call for pale extract and a pound of so of steeped, crushed, roasted barley. What's the difference? Which will end up tasting the most like Guinness?

Thanks!

John Arther
Swank, NV

Dear Mr. Arther,

Now you've put me on the spot. Asking me to be spot on. Dark extract or pale extract? The possibility of both of them making an excellent Guinness style stout is excellent. One of your best bets is to find a Stout kit designed to make exactly that.

All dark extracts, whether kit or plain extract, began as a pale extract to which roast barley and/or malts have been added. With the preordained dark extracts you may luck out (especially with a knowledgeable homebrew shop owner's recommendation) and be spot on with what you want. With pale extracts you can design and formulate the degree of roast barley and roast malt flavor you wish to have in your stout.

Personally, I use Guinness stout as a starting point in what I am aiming for. My stout is obviously better because I blend in a little crystal malt, roasted barley, black and chocolate malts in order to have a the balance I really like to eliminate the tang I don't particularly care for in Guinness.

Oh don't get me wrong, I'll pay good money for a good draft of Guinness. I'll usually pay even better money for some of my favorite American craft brewed stouts. But I like mine the best. For some guidance to a smooth Guinness like stout see Charlie Papazian's "Dusty Mud Stout" recipe in the November-December 2000 issue of *Zymurgy*.

MY goodness MY Stout,
The Professor, Hb.D

Send your homebrewing questions to "Dear Professor," PO Box 1679, Boulder, CO 80306-1679; FAX (303) 447-2825 or professor@aob.org.

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Sin City Sudzzers Tackle Munton's Wheat Extract

A few homebrew enthusiasts founded the Sin City Sudzzers in 1993. Not all of the original founders are still with us today, with jobs and other things taking them from us, but we still have a great group of people. The current board is: Cheryl Fuentes de Rehm, President; Kerry Wyckoff, Vice President; Amy & Terry Fox, Treasurers; Bill Rehm, Newsletter (and person who keeps president in line); Randy Oskey, Oktoberfest Chair. One thing that the Sudzzers are very proud of is our Annual Oktoberfest, usually held the last weekend of September. There is great music including good old Wisconsin polkas. The brats we serve are made from our own recipe; we like to call them the Sin City Sizzlers. We are also looking into having a homebrew/microbrew get together with Wisconsin and Illinois clubs for sometime next year. (If you would be interested in something like this contact me at sudszer@ yahoo.com)

We have been fortunate enough to have great speakers come to our meetings. Our speakers have been brewers from Wisconsin breweries (Lakefront, Waterstreet, and Titletown to name a few) and just recently we had Mary Anne Gruber from Breiss Malt—bless us with her presence.

The club has changed throughout the years, but one thing that has stayed the same...great beer. This experiment was a fun challenge. We hope you enjoy these recipes as much as we do.

John Danner's Wheat Beer

- 3.3 lb Munton's wheat extract (1.5 kg)
- 3.3 lb Munton's light extract (1.5 kg)
- 0.5 lb rice syrup (225 gm)
- 1 lb red American wheat (0.45 kg)
- 2 oz Hallertauer 3.5% alpha acid, (57 gm) 45 min



Left to Right: John Danner, Bob Krepsky, Greg Emerson, Terry Fox, Amy Fox, Rose Wessel, Bill Rehm, Cheryl Fuentes de Rehm, Jack Rauwerdink, Roger Rommel, Monica Sterk, Randy Oskey, Jeff Wessel, all working on the club Oktoberfest.

- | | |
|--------------------------------------|-------|
| 0.25 oz Saaz 3.5% alpha acid, (7 gm) | 5 min |
| Wyeast No. 3056 Bavarian wheat yeast | |

170° F (77° C) water and then removed. Bring to boil, add extract & Cascade hops. Boil for 1 hour. Add Hallertauer hops 5 minutes before end of boil.

- OG: 1.032
- TG: 1.006

Comments: Another very good wheat which had great color and head retention. The flavor was refreshing (great on a hot summer day).

Team Rauerville's Bavarian Weizen

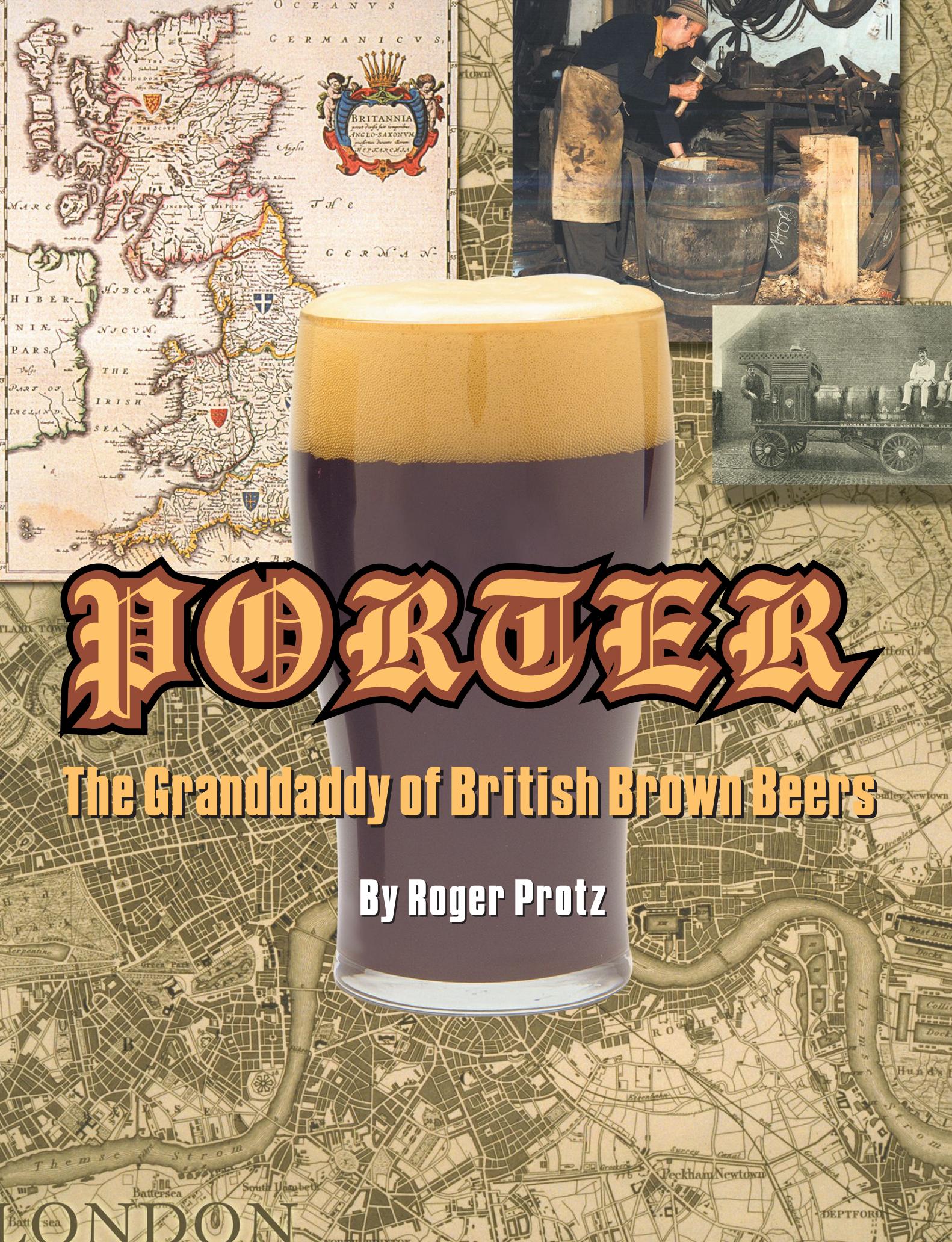
(Team Rauerville includes Jack Rauwerdink, Lorie and Tom Sanville)

Bob Krepsky's Early Morning Wheat

- | |
|--|
| 6.6 lb Munton's wheat extract (3.0 kg) |
| 10.5 oz 40° L crystal malt (300 gm) |
| 7 oz rye (200 gm) |
| 1.6 oz Cascade (45 gm) |
| 0.5 oz Hallertauer hops (14 gm) |
| Wyeast No. 3068 Weihenstephan wheat beer yeast |

- | |
|---|
| 6.6 lb Munton's wheat malt extract (3.0 kg) |
| 1.5 lb wheat malt (0.68 kg) |
| 1 lb crystal 10° L (0.45 kg) |
| 0.5 oz Hallertauer Mittelfruh (whole) (14 gm) |
| 0.25 oz Northern Brewer (whole) (7 gm) |
- (continued on page 59)

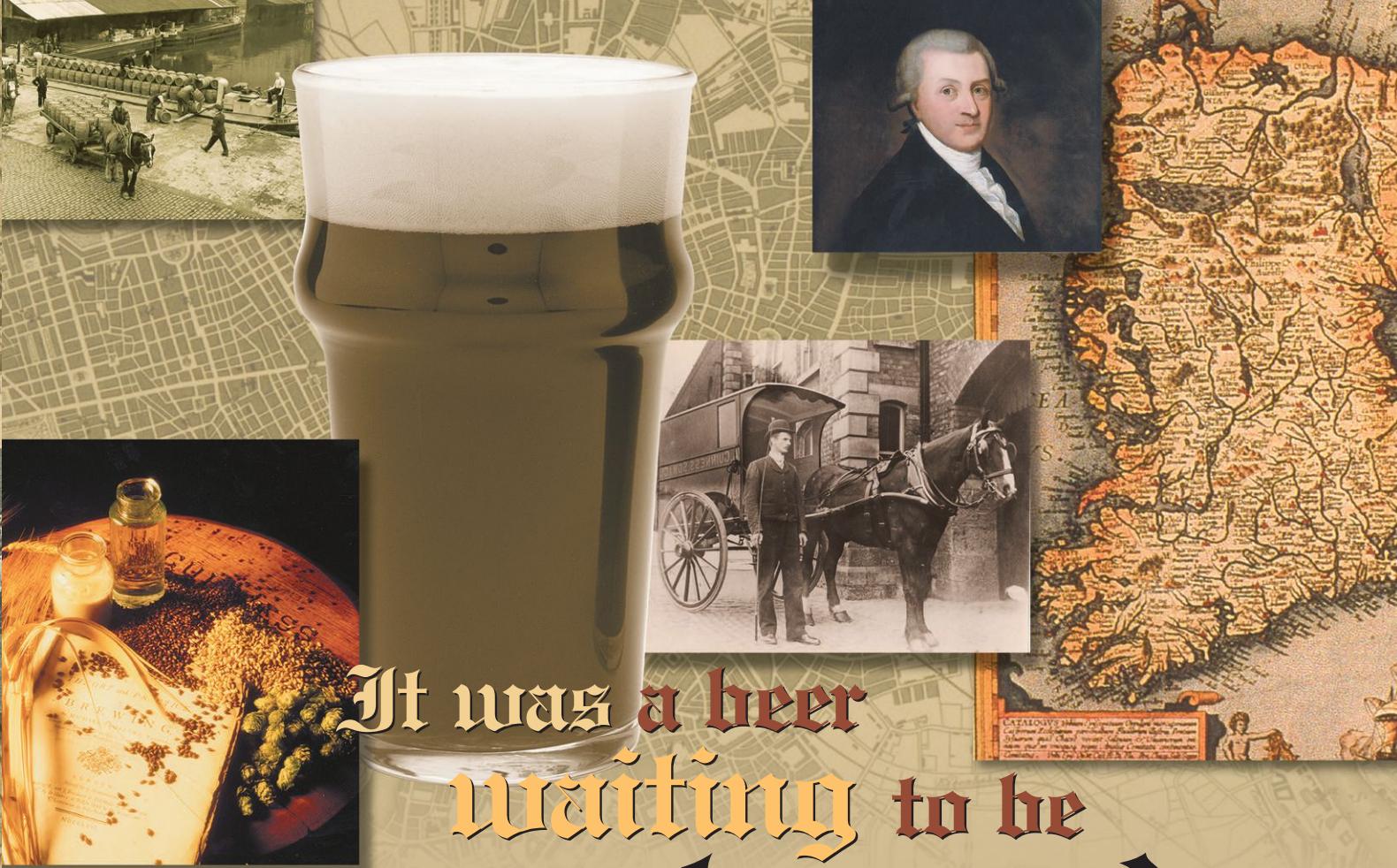
Brewers Specifics: Grains steeped in 6.5 gallons (24.6 l) of water for 30 minutes in



FOURTEEN

The Granddaddy of British Brown Beers

By Roger Protz



It was a beer waiting to be brewed.

Porter is a disputatious beer. Sit a group of brewers, or beer writers, or beer aficionados down in a tavern or bar to discuss India Pale Ale or Pilsner and lively but friendly discourse will ensue. But mention the dread word “porter” and tempers will rise and tables will start to be thumped.

There are as many theories about the origins of porter—its appearance, its taste, and even its name—as there are versions of the beer style brewed today. A small industry has developed among some beer writers as they attempt to create ever more fanciful notions about the beer and its name. I will not detain you with such “theories” as porter being a corruption of the Latin *portare* (to transport) or the English word *export*.

Contemporary sources say that porter acquired its name as a result of its popularity among street market porters in London in the early 18th century. A retired brewer who wrote under the pen name of Obadiah Poundage, and who had worked in the London brewing trade for more than 70 years, reported in 1760 that the beer was drunk by “laboring people, porters etc.” A Frenchman, Cesar de Saussure, writing to his family from London in 1726 about the prodigious amounts of beer consumed in the English capital, including small beer and ale, added: “Another kind of beer is called porter...because the greater quantity of this beer is consumed by the working classes.”

London in the early 18th century housed a number of markets that sold fruit, vegetables, meat and flowers. A small army of laborers transported these goods around the city on hand-drawn carts and must have developed sizeable thirsts as a result. It is not difficult to see why, as they downed copious tankards of a new type of beer—variously called “three threads” or “entire butt” by brewers—so much so that it acquired the simpler and more harmonious name of “porter.”

The name of the style must not be allowed to obscure the pivotal role that porter played in the development of modern brewing. Porter created a commercial industry that enabled beer to be made in such quantities that production costs were cut, generating fortunes for the new breed of brewing entrepreneurs.

It was a beer waiting to be brewed. The cruel policy of land enclosures in the 17th century had driven tens of thousands of rural people into London and other towns and cities. London’s population grew at twice the rate of the rest of England’s urban centers. It rapidly became the greatest city in the world, the hub of a mighty empire. The new industrial working class was herded into filthy slums. The only

comfort lay in the alehouse, the only solace a cheap glass of ale.

The first stirrings of the industrial revolution had a profound impact on brewing and sounded the death knell of beer brewed in small batches by tavern owners. Improved methods of kilning malt, a better understanding of yeast, new varieties of hops with greater bitterness, the introduction of isinglass to clear beer, hydrometers and thermometers all combined to produce ales with better aroma, flavor and clarity.

Later in the 18th century, coke-fueled malt kilns, steam engines, metal mash tuns and enclosed boiling coppers added a further dimension to the development of modern brewing and paved the way for the pale ale revolution of the Victorian age.

Ralph Harwood Shows Off His Entire Butt

According to a legend that has become dubious historical fact, the beer that became known as porter was first brewed by Ralph Harwood, owner of the Bell Brewhouse in Shoreditch in the East End of London. There is little doubt that Harwood did produce an ale in 1722 that he called Entire Butt and that he made an important contribution to the development of the style. A contemporary piece of doggerel by a versifier named Gutteridge paid homage to the "inventor" of porter:

*Harwood, my townsman, he invented first
Porter to rival wine and quench the thirst.
Porter which spreads itself half the world o'er,
Whose reputation rises more and more.
As long as porter shall preserve its fame
Let all with gratitude our parish name.*

But Harwood was not the first brewer of porter. He clearly, and with some success, replicated a type of beer that had become popular in London but which was expensive to make. The cost of wars with France had led the British government to load punitive taxes on malt, hops and coal. As coal was banned in towns as a result of its noxious gases and fumes that caused choking fogs, the production of small amounts of pale ale was restricted to country areas. The powerful country brewers exercised a virtual stranglehold on London and other urban areas: they sold not only expensive pale ale to taverns and the wealthy "gentry" but also "stale:" a strong brown beer matured for months and even years in wooden tuns, where the action of wild *Brettanomyces* yeasts gave the beer a sour, lactic tang that was extremely popular with drinkers.

In London, where the waters of the city's wells favored the production of brown rather than pale beers, brewers were faced by the twin problems of expensive raw materials and competition from the country brewers.

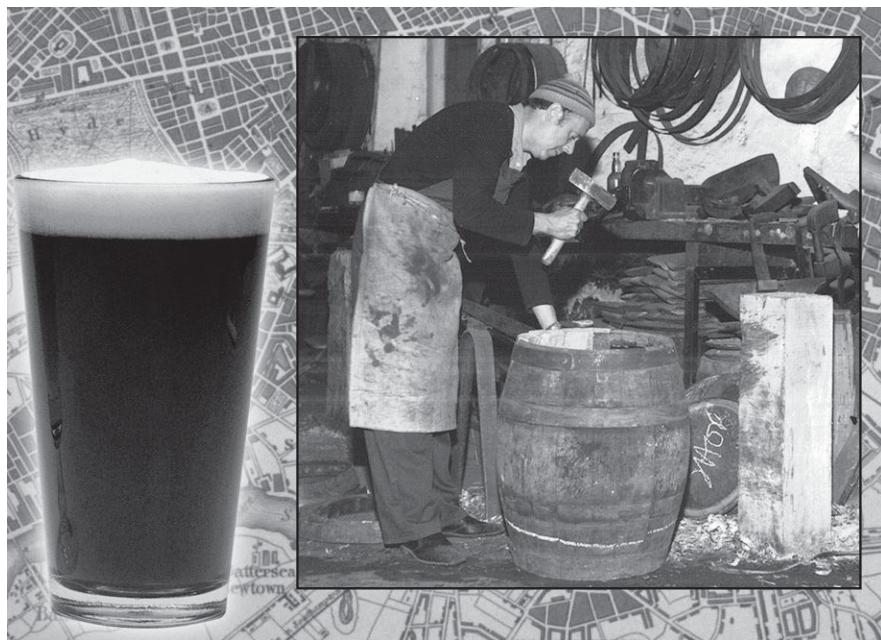
They grasped with great enthusiasm a new type of "high dried" brown malt that was more carefully and gently cured over wood fires and, as a result, produced more fermentable sugar after mashing.

While coal was taxed, wood was not, and the advantages of cheap and better quality brown malt were not lost on the hard-pressed London brewers. They began to make a new type of brown ale that used less but more efficient malt and which was generously hopped. It was not an immediate success. London drinkers preferred the heavier, sweeter and slightly sour beers of old. Brewers and publicans faced a quandary. They had to meet consumer demand but the brewers had tied up their small brewhouses with the production of the new well-hopped brown ales. They were forced to buy, at considerable expense, supplies of pale and stale beer made by the country brewers and sold in specialist shops known as "ale drapers." The resulting blended beers were called "three threads" as they came from different casks into which wooden taps were screwed or threaded.

Blended three threads was the first porter beer. It was expensive to make and was a nuisance to serve: in a period before the invention of beer-lifting devices such as the beer engine, beer had to be fetched from tavern cellars, and three threads had to be poured and mixed from three different casks. Small "common" or commercial brewers and alehouse brewers lacked the space to make and mature stale brown beer, while the cost of pale malt was prohibitive.

Ralph Harwood in his Bell Brewhouse came to the rescue. He brewed a beer that reproduced the flavors and character of three threads, but it was unblended and was served from just one cask or butt. Harwood called his beer "entire butt." Although the name was quickly superseded by the nickname of "porter," many brewers continued to call the style "entire" and it can still occasionally be glimpsed on the tilework or the fascias of older London pubs.

Harwood's entire butt and the other versions that soon followed were cheap beers. Cesar de Saussure said it cost "threepence the pot" while pale ales were one shilling or even one and a half shillings the bottle: there were 12 pennies to a shilling. Nobody



The noble art of cooperage at Samuel Smith's Brewery.

(not even the American fantasist who claims to have found Harwood's recipe) knows how the owner of the Bell Brewhouse made his porter. But it seems likely that he made good use of the new "high dried" brown malt to avoid using pale malt, and inoculated the wort with small amounts of stale beer in order to give it the required lactic tang. One thing is certain: the early porters and entires were brown rather than black beers. A century was to elapse before it became possible to produce the roasted malts that gave 19th-century porters and stouts their entrancing black and ruby colors.

The demand for porter was insatiable. It was a strong beer by modern British standards—records suggest gravities ranged from 1050 to 1070 degrees—but it must also have been a refreshing drink for people engaged in hard manual labor. By 1758, H. Jackson, in his "Essay on Bread," said: "Beer, commonly call'd Porter, is become almost the universal cordial of the populace." Its popularity was helped by government action to stamp down on the evils of gin drinking, which had become an epidemic in the early and mid-18th century. Gin manufacture and retailing were heavily taxed by successive government acts, and working people were encouraged to switch to cheaper and more healthy ale.

Demand Soars in London

Commercial brewers sprang up to meet the demand for porter. The most famous of all the great porter brewers, Samuel Whitbread, opened a modest brewhouse in London in 1742 to make pale and amber beers. Within three years he had moved to new premises in the historic Barbican area to concentrate on porter and stout. The brewery in Chiswell Street (where the Porter Tun Room survives and is open to visitors) installed a steam engine built by James Watt in 1785. Porter was matured in enormous underground cisterns, each one containing 4,000 barrels of beer. The cisterns were cooled by internal copper pipes through which cold water was pumped to ensure the maturing beer stayed in good condition. Brewing ceased to be a seasonal occupation, and maturing in bulk speeded up production. In order to give the "stale" tang required by drinkers, brewers let the wort rest in large, open cooling trays where aeration speeded up acetification.

Recreating Authentic Porters and Stouts

The following recipes are based upon research conducted and published by the Durden Park Beer Circle in England. These recipes are designed to make five US gallons.

Whitbread London Porter (1850)

OG 1.060

9 pounds pale malt (4 kg)
1.75 pounds brown malt (0.8 kg)
10 ounces black malt (283 g)
4 oz Fuggles or Goldings hops (113 g)

Mature for at least four months.

Younger's Porter (1848)

OG 1.072

5 lb pale malt (2.25 kg)
5 lb brown malt (2.25 kg)
5 oz black malt (142 g)
5 oz Goldings hops (142 g)

Mature for at least six months.

Younger's XXXP Export Porter (1841)

OG 1.100

12 lb pale malt (5.4 kg)
7 lb brown malt (3.2 kg)
11 oz (312 g) black malt or 14 oz (397 g)
roasted barley
12 oz Fuggles or Goldings hops (340 g)

Mature for one year.

Usher's Stout (1885)

OG 1.056

4.5 lb pale malt (2 kg)
1 lb black malt (0.45 kg)
8 oz crystal malt (227 g)
8 oz brown sugar (227 g)
1.6 lb dextrin malt (0.73 kg)
8 oz amber malt (227 g)
8 oz brown malt (227 g)
5.2 oz Fuggles hops (147 g)

Mature for four months.

Whitbread Double Stout (1880)

OG 1.080

11 lb pale malt (5.0 kg)
14 oz brown malt (397 g)
3 oz black malt (85 g)
4.8 oz Fuggles or Goldings hops (136 g)

Mature for six months.

Whitbread Triple Stout (1880)

OG 1.095

12 lb pale malt (5.4 kg)
4 lb brown malt (1.8 kg)
12 oz black malt (340 g)
5.2 oz Fuggles or Goldings hops (146 g)

Mature for at least eight months.

By 1812, Whitbread was producing 122,000 barrels of porter and stout a year. Meux Reid made 188,000 barrels a year and Truman Hanbury 150,000. Barclay Perkins, with the formidable annual production of 270,000 barrels a year, was larger than many modern British regional brewers. As for Ralph Harwood, he never managed more than a modest 20,000 barrels a year, and, unable to afford the investment in modern technology, literally ran out of steam.

One of the most fascinating aspects of the early history of porter is that the blended version never completely disappeared. An engraving of an 18th-century London alehouse in the Whitbread Archive shows two fascia boards advertising "Whitbread London Porter" and "Whitbread & Co Entire". According to A. Rees in his Cyclopaedia published in 1819, "All the London porter is professed to be 'entire butt,' as indeed it was at first, but the system is now altered and it is

Jadwiga



Poland's Best Mead

What is Jadwiga? Jadwiga (pronounced yahd-VEE-gah) is possibly the oldest, continuously produced mead in the world. Jadwiga is produced according to the recipe that has been handed down for over six centuries. Jadwiga is rare, to say the least.

Truly Great Mead

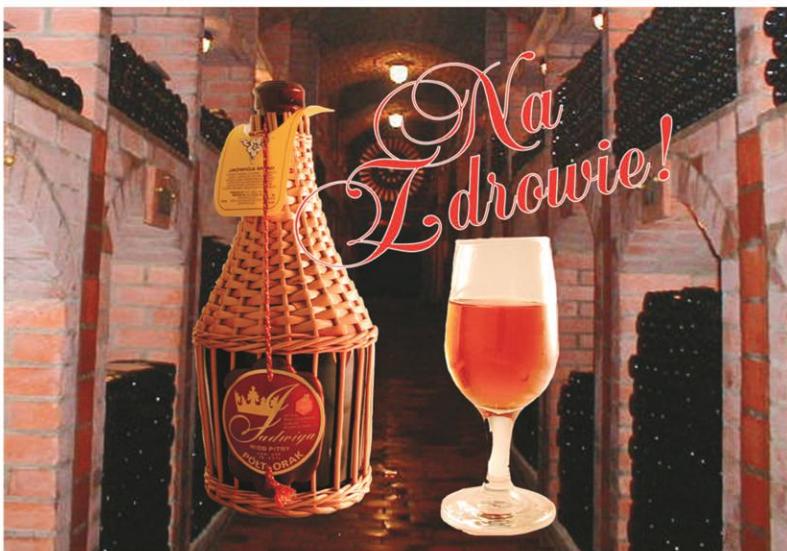
This is a mead of enormous proportions. Although the exact recipe is a well-kept secret, we do know it begins with 3/4 Acacia honey and 1/4 water. This proportion is known in Poland as "Poltorak". Poltorak Mead does not exist under 10 years of age.

The color is nearly bronze, with great viscosity. The nose is reminiscent of Armagnac from the extensive aging in special oaken barrels (up to 10 years). Total aging is up to 25 years. It is extremely sweet, but well balanced, with great complexity and depth of flavor. Jadwiga is exquisite.

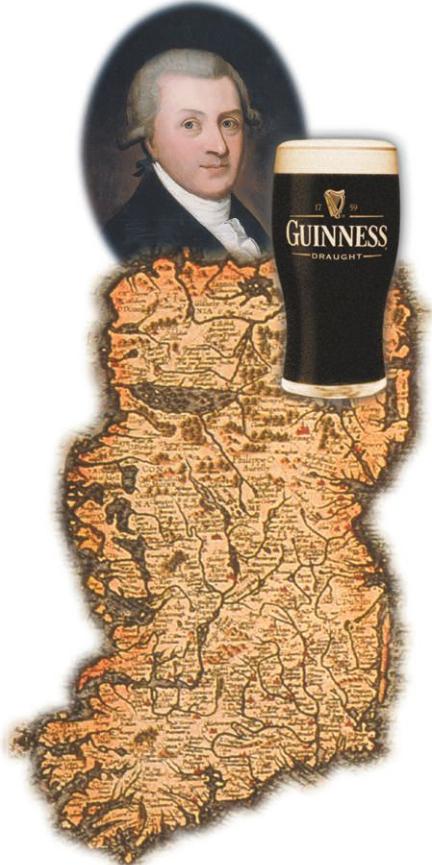
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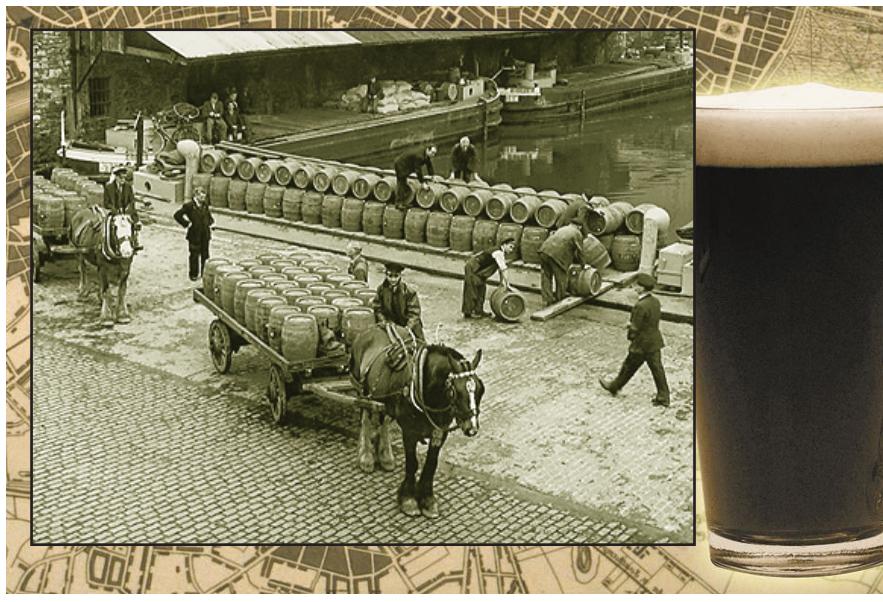


very generally compounded of two kinds, or rather the same liquor in two different stages; the due admixture of which is palatable though neither is good alone. One is mild and the other stale porter; the former is that which has a slightly bitter flavor from having been lately brewed; the latter has been kept longer. The mixture the publican adapts to the palates of his several customers."

Porter brewing also moved beyond London. George's Brewery in the major seafaring city of Bristol started brewing porter in 1788. Scottish brewers offered large salaries and inducements to London brewers who would show them how to make the style. The two famous Scottish brewing dynasties of William Younger and Archibald Campbell Younger merged their businesses to ensure a dominant position in the porter market.

The Irish Connection

The most important entrants to the porter market were the Irish brewers. The whole island of Ireland in the 18th and 19th centuries was part of the United Kingdom. When Arthur Guinness, who had opened a



Loading at the Jetty, 1957. Guinness stout was transported to the south and west of Ireland through the internal Irish canal system. Barges loaded up with kegs at the Grand Canal Harbor at the back of the St. James' Gate Brewery for distribution around the country.

small brewery in Dublin in 1759 to make ale, saw the enormous amounts of porter flooding into the city every year from London and Bristol, he determined to corner a small part of that market by switching to porter brewing. In Cork, Beamish and Crawford were brewing porter by 1792 and, until the appalling potato famine of the mid-19th century destroyed much of their trade, for a time were the biggest porter brewers in the whole of the British Isles.

The Irish brewers fashioned their own interpretations of porter and stout, and from those interpretations came the style known today as Dry Irish Stout. Guinness in the 19th century made two strengths of porter: X and XX. In the 1820s, XX was retitled "Extra Porter Stout" while a stronger export version was labeled "Foreign Extra Porter Stout." This contemporary information should give the lie to the modern revisionist claim that porter and stout are two quite separate styles: in Britain and Ireland in the 18th and 19th centuries, the strongest or stoutest beer from a brewery was called stout, as in

stout brown ale or stout butt ale. The strongest porters were, simply and naturally, called stout porter or porter stout. It was a decline in beer gravities in the late 19th and early 20th centuries, with stout reduced to the level of porter, that saw porter go into terminal decline, with its name removed from labels.

The different character of Irish porter and stout was the result of a tactic devised by Arthur Guinness II in the early 19th century to avoid paying tax to the British government. At the time, beer duty was levied on raw materials, not alcoholic strength. Guinness began to use some unmalted (and untaxed) roasted barley in his beers. The acrid flavor of the charred barley added not only a distinctive character but the bitterness of the barley also enabled Guinness to cut back on the levels of expensive hops imported from England. By dodging some of his tax bills, Guinness invented a style of stout that conquered the world and prevails today.

The British brewers were as anxious to cut production costs as the Irish. Few British

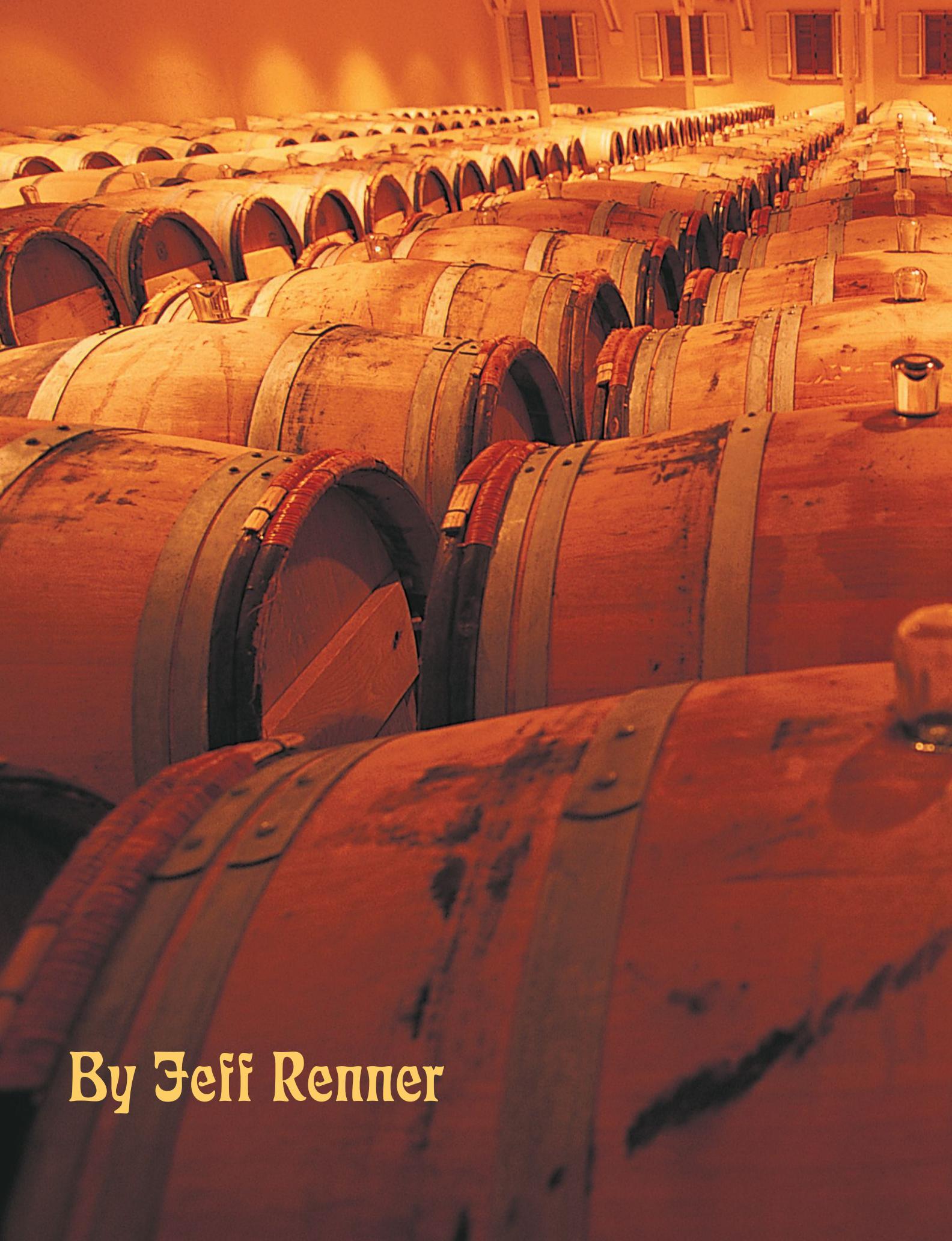
brewers made use of roasted barley; from 1880 they had no need to, as William Gladstone's government removed the tax on materials and levied duty on the original gravity of worts. Early in the 19th century, brewers made radical changes to the way in which porter and stout were brewed. Brown malt was largely abandoned in favor of pale malt: the widespread use of coke (coal without the gases or the tax) made it possible to make pale malt on a large commercial scale. With its greater diastatic power—the ability to convert starch into maltose—pale malt offered the brewers the opportunity to reduce production costs by using smaller amounts of malt. At first they darkened their beers with molasses, licorice, caramel or elderberry juice. But when Daniel Wheeler invented his machine for roasting malt in 1917, the brewers suddenly had access to black and chocolate malts that gave more authentic flavor to their porters and stouts. Paradoxically, it was at the very time that porter became a more uniform and darker beer that it came under challenge from a change in taste among London drinkers, who switched from bitter black beers to sweeter and less heavily hopped brown beer—the style called mild ale today. And in Burton-on-Trent an altogether new style called India Pale Ale was being fashioned that, with its offspring pale ale and bitter, would ultimately eclipse all black and brown beers.

The rise of the craft brewing movement in both Britain and the US has created a new interest in porter. There are many interpretations, some dazzling, some perplexing, and some with humor attached. Several British craft brewers produce beers called Cole Porter, emphasising that That Old Black Magic still has us in its spell.

Roger Protz is chairman of the British Guild of Beer Writers and editor of the CAMRA Good Beer Guide. His latest book, with Clive La Pensee, is Homebrewing Classics: India Pale Ale, published in Britain by CAMRA www.camra.org.uk. They are now collaborating on the second in the series, on porter and stout.

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By Jeff Renner

Solera Ale

Beer That Gets Older as You Drink It



In the solera system of the Jerez region of Spain, sherry is aged in a series of casks of increasing age. When a portion of the oldest cask is removed for sale, it is filled from the next oldest cask, which is in turn replenished from younger casks, and so on until new wine is added to the youngest. The old sherry is said to "educate" the new, resulting in a quicker maturing wine that is uniform from year to year.

Remarkably, Soleras are dated to their foundation. If you buy a bottle of sherry from a Solera established in 1802 then a very tiny amount of your wine is actually that old. Perhaps there are only a few molecules, but the effect overall is a wine of greater maturity than its actual average age. Many brewers have recognized that strong ales benefit from aging, but how many of us can age an entire batch of beer for several years before consumption? Patience may be a virtue, but the prospect of waiting years to consume your handiwork is a proposition fraught with impossibility. For starters, how

do you know when the beer has reached its optimal flavor condition? If it is great now and you drink it, you'll never know what it might have been like in another year or two. Then, once you achieve something you like, you have to start all over again with a fresh batch and hope that you'll accurately reproduce the conditions that gave such wonderful results the first time.

A system of aging ales based upon the solera concept is one way to tackle these challenges. Read on and I'll tell you how it works.

Old Infected Beer Is Good!

Age is usually the enemy of beer, but the aging of some beers, like that of some wines, can produce wonderful changes. Through the interaction of alcohols, organic acids and oxygen, subtle and complex new flavor and aroma components are produced. When friendly microflora (yeasts and bacteria) are present, the changes can be more than subtle: the entire character of the beer can change.

Some classic beers fit this category. Lambics are no doubt the most famous, but English ales have a great tradition in this area as well. For several centuries, conventional strong ales were aged until they too took on a lactic tang, a horsey-leathery earthiness and fruity, wine-like complexities. Records show that English and American strong ales as recently as 100 years ago had surprisingly high levels of lactic and acetic acids. Eighteenth century London porter owed its popularity to the fact that it was a blend of such a tart, aged ale, called "stale ale," and fresh, new ale called "mild ale." The strengths of each complemented the shortcomings of the other.

Today we continue to find examples as Flanders red and brown beers. But the English tradition is still alive in Greene King's Strong Suffolk Ale: a modern blend of a fresh young beer with a portion of aged, sour beer. Through the various mechanisms of aging, beers like this transform from the realm of ale to something more

like wine, and perhaps bear a similarity to true "old ales" of the past.

Beauty and the Beast: One Solera's Journey

I have devised an aging procedure for old ale that is a simplified version of the solera system for aging sherry. I use a single keg and replenish it when it gets half-empty. The result is that I have a constant supply of an increasingly more mature ale as the years pass.

My solera was established in 1994, when I made an OG 1.086, all pale malt, English-style barley wine. It was disappointingly bland. It needed the bite that dark grains give, so when I made a brown porter (1.051) a year later, I blended a gallon of it with 3.5 gallons of the pale barley wine in a five gallon Cornelius keg. This really balanced the flabby sweetness of the barley wine. It was at this point that I think the concoction became an "old ale."

I've left this alone for the most part in a 50-60° F (10-16° C) cellar, drawing off occasional glasses. It continues to ferment slowly, so I've left it off the carbon dioxide tank and have even had to vent it occasionally. About once a year, I replenish it with one or another stronger ale, including a Scotch Ale that I just was never happy with (and just emptied the bottles into the keg!), and most recently, a dark old ale. I would guess that the average effective original gravity is about 1.070 right now.

In its early years, as the blend took on more maturity, it was still a conventional old ale. At about three years it developed an old rubber smell from yeast autolysis, but this disappeared after several months, presumably as some microflora consumed the spilled yeast innards. (Fine old French Champagne has autolysed yeast in the bottle, after all).

Then at about four years something rather wonderful happened that has made all the difference between an aged old ale and something more: it developed a light, clean lactic tang. I suspect the autolysed yeast provided nutrients for bacteria that were present. Normally, sourness could be a serious problem, but this seems to be a very restrained, friendly bug (it's never spread to other kegs). The tartness gradually got a bit stronger, and then submerged into the overall complexity of the blend.

At five years it was a rich, malty, complex, strangely very fresh tasting (the acids?) winey ale, with orangey Cointreau notes. After the addition of the fresh old ale this past summer, it was sweeter, less complex and very gassy, but within two months had dried out and settled down into a fruity old ale with such an aroma of sour cherries that it seemed to be a kriek. Now, a month later, it is the best ever. It has the bouquet of a fine old red wine, full of complex fruit aromas with spicy woody notes. On the palate, it is quite dry and complex with a tangy fruit acidity. Its malt origins are quite hidden. Only the hop bitterness of the finish tells you this is an ale.

In spite of its rather high original gravity, the present specific gravity is a low 1.008 due to the continuing fermentation of the complex sugars by the lactic acid producing bacteria. I expect the specific gravity may continue to drop as it dries out further. I have to release excess pressure occasionally, and it dispenses very foamy, then settles down in the glass to a low-carbonation, very smooth ale.

Making Your Own Solera Ale

I recommend this solera method of aging and occasional replenishing of a keg of old ale to other brewers. It takes only a keg and cool storage. It is well suited to extract brewers, as the greatest part of the character comes not from the original beer but the age.

I would suggest starting with an amber or dark old ale of 1.070 OG or so and perhaps 40 IBU. Keg it from the primary fermenter when it's nearly finished (some suspended yeast is good) and forget it for six months except for an occasional taste. Check the pressure frequently and release any excess, and be sure to use hose clamps on the hose and faucet in case the pressure builds too much. Then when it begins to approach half-empty, plan what kind of ale might complement the way it's developing, and brew it. You might want to bottle the half you don't add to the keg and compare them.

Half the fun of this is following the changing character of your beer. Perhaps you'll want to add some cherries to a portion in another keg, or some *Brettanomyces*. And by the way, if you would prefer to get on with things rather than wait for the serendipitous arrival of friendly bacteria as I did, I have arranged with the Yeast Culture Kit Co. to supply, at cost, an old ale starter culture from my solera that you can add to your fermented ale. There is certainly no guarantee that the resulting beer will turn out the way mine did, but you will certainly develop complex aged flavors more quickly this way.

Use of a solera system gives homebrewers a whole new way to experiment with the dimensions of age with regard to beer. Best of all, it yields a product that you can sample as you go rather than having to wait many months or years for completion. I hope you'll start your own old ale solera soon and enjoy a taste of brewing's proud past.

Jeff Renner (jeffrenner@mediaone.net) is best known as the proselytizer of Classic American Pilsner, but he does like other beer too! He brewed his first beer nearly 30 years ago and his first full mash more than 20 years ago. He is a charter member of the Ann Arbor Brewers Guild (1986) and a frequent contributor to Homebrew Digest.



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Gracefully

A painting depicting a man in a wooden barrel shop. He is standing on a wooden floor, leaning against a large wooden structure, possibly a barrel or a piece of machinery. He is wearing a dark cap and a dark, long-sleeved shirt. In the background, there are more barrels stacked on shelves and a brick wall. The lighting is warm and focused on the man.

Maturing

Old Ales Tempt the Palate

by Matt Stinchfield

Aged, strong ales have been an important aspect of the British brewing tradition for centuries, but now only a few fine examples remain. To be certain, old ales worthy of years in the cellar can still be obtained and many aficionados have collected bottles ten or even twenty years old. The best news is that you can brew an old ale at home, if only you have the will to let it age.

There are old ales that are simply strong ales. There are those that are called old because they are dark in color and those so named because they follow an old procedure. Many barleywines are called old, as are some strong Scotch ales. Some feel that old ales must have traditional sugars added, while others contend that they must have contact with wood. So when speaking of English old ales, we have to specify which variations we are referring to. The most specific definition of a traditional old ale includes extended conditioning in the presence of yeast, either in the bottle or in wood, which results in the development of wine-like characteristics over time. In a few

rare cases, a refined sourness may also be present. These are the old ales we're speaking of in this article.

History and Commercial Examples

Prior to the onset of the National railway in the mid-1800s, Britain was populated with hundreds of tiny, traditional breweries that sold their ales only in the immediate vicinity. These breweries were most often family affairs, brewing beer with a house character influenced by local water supplies, hand-me-down practices, and, one might fairly claim, unique microflora.

There is sufficient historical evidence to suggest that old ales of the 19th century with a starting gravity in excess of 1.100 were the norm¹. The grain of the day was not as highly modified as malt today, however, resulting in the somewhat obscene grain bills of the period. But to be sure, some very strong examples exist in today's market.

To obtain such a high extract, only the first runnings were collected. The later runoff was used for a so-called "small beer." The first runnings were boiled for a lengthy time, often

three or more hours, to concentrate the sugars and to introduce caramelization. Some recipes in use today rely on only pale malt, yet due to high extract and long boils, these beers typically possess a deep ruby or chestnut color. Most grain bills today, however, rely on the addition of caramel malt and a smattering of black malt.

In the early 19th century and before, any beer stored for any time would have been susceptible to lactic acid bacteria and acid-producing wild yeasts. Thus, given time, beer would sour. But during the evolution of brewing practices and taste preferences, it was discovered that very strong ales, and those substantially hopped, were apt to last much longer and would better balance the sourness with residual sugars. Nevertheless, these "stale ales" were intensely sour, often outmatching the acidity of even the tartest of modern lambics.

During fermentation, which typically occurred in wooden or stone tuns, the beer would be exposed to resident yeast and bacteria, bringing about the slow souring of the beer. Although this old sour ale may have been consumed straight at one time, the best flavors could be produced by blending old ale with younger, sweeter ale—a practice still employed by Greene King in their product Strong Suffolk Ale (known in America as Olde Suffolk English Ale). Strong Suffolk is the most sour of the readily available old ales on today's market.

Old ales of the past would have been bunged up in barrels for later consumption, allowing for flavor evolution during cellar-ing. In modern old ales, the beer is bottle conditioned with yeast, such as is common with many Belgian strong ales. Many beers that are labeled or named as "old" do not have yeast in the bottle and therefore are much more limited with regard to flavor evolution possibilities.

Old ales tend to have names with a sophistication or distinction that seem to express the efforts required to produce them: Prize Old Ale, Old Peculier, Olde Suffolk, Traquair House Ale, or Thomas Hardy's Ale. Of these, the one with the closest link to the old ales of yesterday comes from the brewer Greene King. Their six percent abv Strong Suffolk, is a blend of two- to five-year-old 12 percent abv

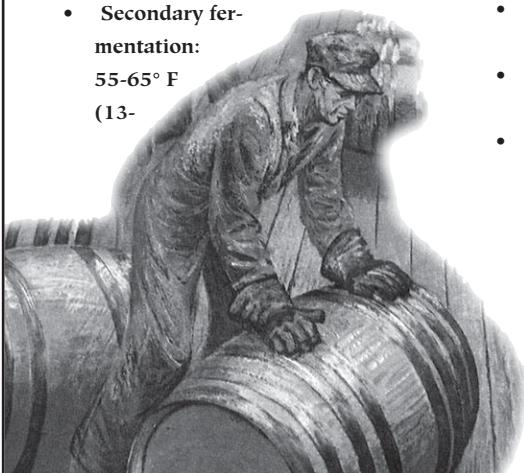
Merry Widow Ale

Old Ale Portion

Recipe for 5 US gallons (19 L)

- 15 lb pale malt (6.9 kg)
- 1 lb British crystal malt, 55°L (0.45 kg)
- 0.125 lb black malt (56 g)
- 1 lb dark brown sugar or British treacle (0.45 kg)
- 2 oz Kent Golding hops, 4.6% alpha acid (56 g) (90 min)
- 1 oz British Fuggles hops, 4.3% alpha acid (28 g) (30 min)
- Wyeast 1728 Scottish Ale yeast, or White Labs WLP028 Edinburgh Scotch Ale Yeast

- Original gravity: 1.100 (23.7° P)
- Final gravity: 1.030 (7.5° P)
- Boiling time: 120 minutes
- IBUs: 53
- Color: approx. 17 SRM, prior to kettle darkening, dark reddish brown
- Primary fermentation: 65° F (18° C) for four weeks
- Secondary fermentation: 55-65° F (13-



18° C) in oak barrel for two to six months, as little as two weeks for a new barrel.

Young Ale Portion...

Recipe for 5 US gallons (19 L)

- 6.5 lb pale malt (3.0 kg)
- 1 lb brown malt (0.45 kg)
- 0.5 lb British crystal malt, 55°L (0.23 kg)
- 0.5 lb chocolate malt (0.23 kg)
- 1 oz British Fuggles hops, 4.3% alpha acid (28 g) (60 min)
- 0.5 oz Kent Golding hops, 4.6% alpha acid (14 g) (20 min)
- Wyeast 1275 Thames Valley yeast, or White Labs WLP005 British Ale Yeast

- Original gravity: 1.047 (11.6° P)
- Final gravity: 1.010 (2.6° P)
- Boiling time: 60 minutes
- IBUs: 25
- Color: approx. 28 SRM, dark brown
- Primary fermentation: 70° F (21° C) for one week
- Secondary fermentation: 65-70° F (18-21° C) for three weeks
- To bottle or keg, blend with the old ale with the young ale according to taste, prime with 0.5 cup corn sugar (95 g) per five gallons, bottle, condition at cellar temperatures for a minimum of six months to several years.

sour ale which has been matured in wood with a young five percent abv pale ale. This beer is rich in dark fruit sweetness but also possesses oaky, winey and peppery notes, followed by a refreshing aceto-lactic acidity. The first taste immediately reminds one of Rodenbach, from nearby western Belgium. Strong Suffolk is perhaps

the last beer in its country to be made by the time consuming art of blending old ale with new. Fortunately, production seems assured with the recent acquisition of a new wooden maturation tun^{2,3}.

George Gale Prize Old Ale is an example of an old ale which is both highly alcoholic and tinged with sourness. At nine percent

abv, Prize Old Ale is bottled still, without additional priming sugar, into a stylish corked bottle. After two or more years in the bottle, a slight carbonation and corky tang will develop, but the ale will never achieve a head. Malty, but with a lighter body than would be expected for an ale of this strength, the opinion is divided on whether or not to consume at three years or twenty. Venerable samples, however, lose some acidity and an apple-like ester becomes prevalent. This loss of acidic nature is well known in Flanders sour ales, and even lambics, as fastidious microorganisms consume organic acids for food, producing fruity esters in the process. The beer finishes with a dryness, no doubt influenced by local water.

Perhaps the most widely known of the old ales, though arguably a barleywine, is Eldridge Pope's Thomas Hardy's Ale. First brewed in 1968, the beer became extinct at the very end of the 20th century after Eldridge Pope sold off their brewing operations to focus on their pub estate^{4,5}. Brewed entirely from pale malt to a strength of around 12 percent abv and hopped with up to 75 IBUs with

Challenger, Goldings and Northdown hops, it is easy to concur with the barleywine argument. Indeed Thomas Hardy's was dry hopped with a modest charge of Goldings during cool maturation, the step between initial fermentation and bottle evolution⁶.

However, Thomas Hardy's keeps so well and matures so gracefully, that by the time a decade or two has passed and the overt hop influences have faded, the beer becomes a sweet, warming sip with elements of raisin, dried fig, Castilian leather, tobacco, and toasted marshmallow — dependent upon vintage and cellaring. Some vintages are still available in small quantities in specialty beer stores, particularly in the northeast US. A subgenus of fine beer cognoscenti still beg, barter and buy rare bottles of this now extinct brew.

Brewing an Historical Old Ale

Obtaining that mystical mélange of fruity, malty, sherry-warming and sour, the homebrewer must first adopt the right state of mind: this beer will be difficult, it will take a long time, and it will require great willpower. Face it, if it were so easy, everyone would be making these noteworthy ales.

Though there are many ways for the homebrewer to produce an old ale, one of the authentic, though not the cheapest or most expedient, is to produce an oak-aged strong ale and blend it with a English mild at a later date. In this way, you let the flavors evolve as they will, then you use

your own palate and judgment to help create the finished product by blending with a younger, sweeter ale.

In the barrel, the beer will pick up traces of acidity, as well as oaky, vanilla and toasty flavors. The aroma of one such homebrew was described by a wine aficionado as smelling "like an old

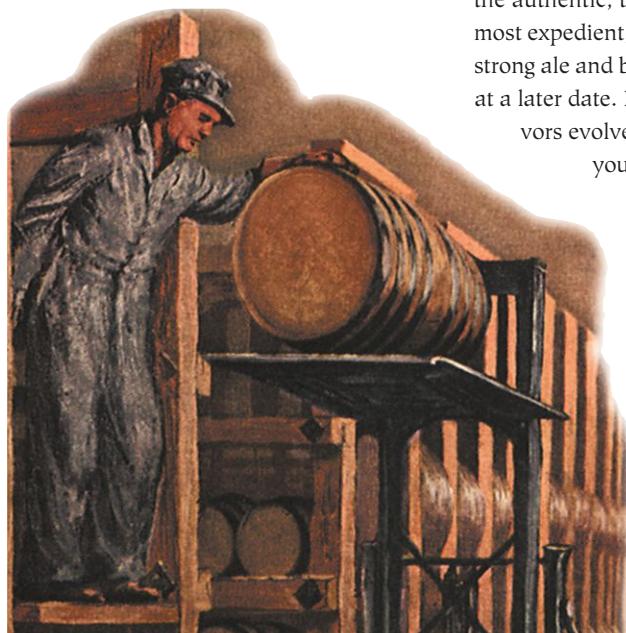
church." That musty, woody character comes with time in the barrel. While oak chips will impart some of these qualities, the best old ale will come from extended barrel aging. As the beer begins to take on dominant woody flavors, blend it with two or three times the quantity of young mild.

A five gallon oak barrel will require an investment of about \$100, and will contribute to the production of about 20 gallons of old ale, based on blending one part old ale to three parts young ale. The time required will be at least two years. Be sure to follow established procedures on the preparation of your barrel for removal of initial tannins and sanitation. Good luck! Recipes for the initial strong ale and the mild for blending are provided on page 32.

A classic English old ale, produced without a sense of urgency, will reward the homebrewer with a glorious brew for gift giving, competition entry, or simply sharing with appreciative friends. Start soon and in a few years you'll be ready with your own old ale. The hardest part...imaging a name for your beer which fits the skill and patience you've invested.

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- Matt Stinchfield** is a freelance safety professional, beer writer, and homebrewer. His cellar contains old ales from five to 15 years of age. When he's not developing brewery safety programs, he leads trips into the European countryside searching for rare beers. Reach him at matt@brewingnews.com. 





CULT CLASSICS: Samuel Smith's Oatmeal Stout

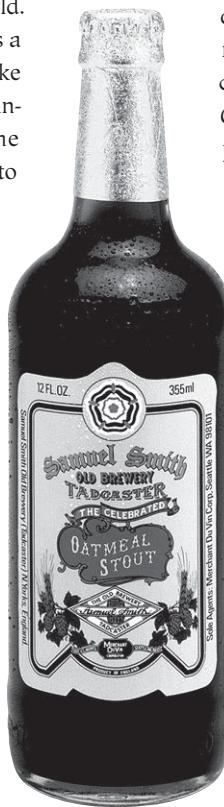
BY GREG KITSOCK

Oats... they're the poor cousins of the grain world. Hardier than most cereal crops, *Avena sativa* is a staple wherever cold climate and poor soil make agriculture a challenge. But where wheat and corn are abundant, oats take a back seat. Consider: each year in the United States, 42 million bushels of oats are converted into breakfast cereals. But the overwhelming bulk of the crop, over one billion bushels, disappear down the gullets of cattle and horses.

A few years back, oats became the health food flavor of the month when nutritional surveys seemed to show that oat bran had a remarkable ability to lower cholesterol levels. The health claims resulted in a plethora of fad products, from oat bran pizza crust to a short-lived brew called Otto's Oat Bran Beer. Subsequent studies, unfortunately, revealed that oat bran is of little avail unless you eat healthy the rest of the time.

Oats retain a measure of respect in the brewing world. When added to stout, the darkest of beer styles, they contribute a nutty, grainy flavor, add to the body and residual sweetness, and give the brew a mouthfeel most often described as "silky."

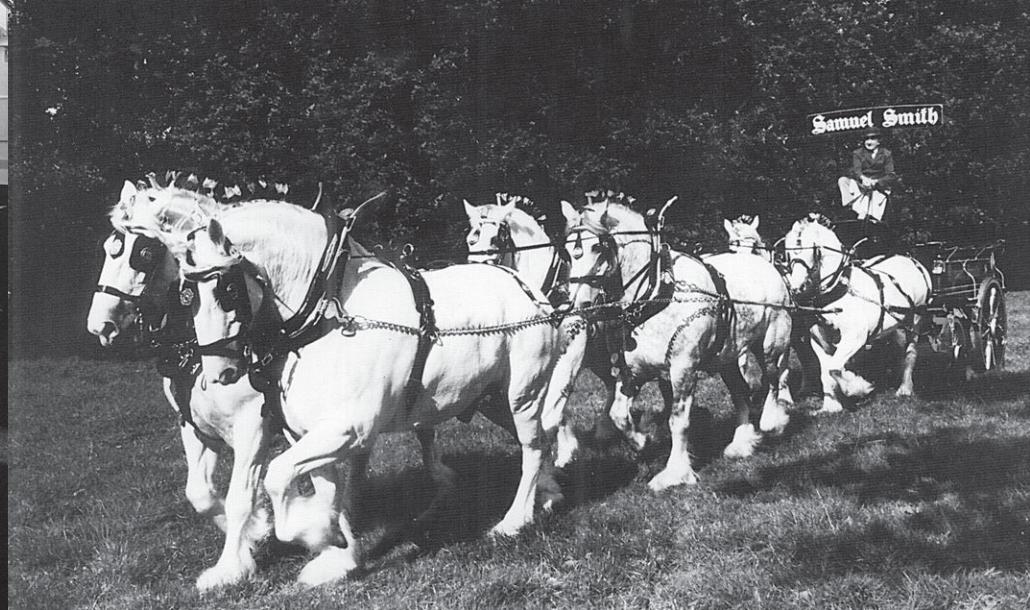
Samuel Smith Oatmeal Stout (perfect four-star rating in Michael Jackson's *Pocket Guide to Beer*) is still the



quintessential example of the style. This revivalist beer was formulated twenty years ago at the behest of American specialist importer Charles Finkel. Roger Protz, in his book *Classic Stout & Porter*, praises it for its "smooth and silky palate with hints of chocolate and espresso coffee on the nose and nuts and roasted grain in the finish." Jackson, in his *Great Beer Guide*, speaks of "a fresh, flowery oleroso sherry aroma; a clean, sweet creaminess; and a silky dryness in the finish."

The Samuel Smith Brewery can be found in Tadcaster, a village of several thousand people between Leeds and York in the north of England. Tadcaster began its existence as a Roman camp. Centuries later, limestone deposits in the area were quarried for use in building churches. Over the eons, the calcium carbonate has leached into the underground lake that supplies the town. This makes for very hard water, ideal for the brewing of pale ales. Tadcaster has in fact been called the "Burton of the North."

Samuel Smith has its roots in the early 18th century, when the Beaumont family operated a brewery on the main street. A brewer by the name of Stephen Hartley took over in 1758, and for nearly a century he and his descendants brewed beer for a coaching inn they owned. The coming of the railroad



cut deeply into their profits, and the business was nearly bankrupt when the Hartleys sold to Samuel Smith in 1847. Smith pumped some much-needed capital into the brewery, handing over the reigns to his son John, then 24.

When John passed away in 1879, he left no progeny. The disposition of the estate seems to have driven a wedge in the Smith family. The original plant—known to this day as the Old Brewery—fell to John's nephew, Samuel Smith III. Meanwhile, John's brother William built a new plant, John Smith's Magnet Brewery, less than 100 yards away. Relations between the Smiths have not always been cordial. According to one tale, the rival breweries once tried to put each other out of commission by draining the water table. Since Samuel Smith had the deeper well (it extends 85 feet downwards and is still in use), this was not a good strategy for John Smith.

John Smith merged with Courage in 1970, and today the plant is part of the Scottish Courage brewing conglomerate. The brewery has been thoroughly modernized and is capable of pumping out a million barrels a year. It, too, once produced a stout of worldwide renown: Courage Imperial Russian Stout. Unfortunately, this classic has not been brewed since 1993, according to CAMRA's *Good Bottled Beer Guide*.

Samuel Smith, on the other hand, remains very much in family hands. The current brewery president and chairman, Humphrey Smith, is the fifth generation of his family to guide the business. The brewery is a low-key operation which takes a guarded approach to the media. When I asked about its output, I was told this was proprietary information. Protz has referred to Humphrey Smith as "the Howard Hughes of brewing" because of his reluctance to grant interviews. But no one would begrudge Samuel Smith the praise it deserves for its lineup of benchmark beers, including a well-rounded pale ale, a porter, an imperial stout, a strong seasonal ale called Winter Welcome, and one of Britain's better lagers. More recently, Samuel Smith has branched out into organic brewing, producing an ale and lager brewed with pesticide- and chemical-free barley and hops.



Samuel Smith Oatmeal Stout (OG 1048, 4.8 percent abv) is brewed with pale ale malt, crystal malt, roasted barley and Scotch oats. The brewery declined to reveal what percentage of the grist the oatmeal makes up, but it's most likely in the single digits. Several sources have stated that the brewery eschews all use of brewing sugars, but Graham Auton, Samuel Smith's marketing manager, did list cane sugar as an ingredient.

Hopping consists of whole-flower Fuggles (bittering) and Goldings (aroma). The beer measures 28-32 bitterness units.

Samuel Smith's Old Brewery is indeed a functioning museum. Behind the grayish brick-and-stone façade is a six-story brewery that operates on the traditional principle of gravity feed. The equipment includes a pair of brass mash tuns and a pair of copper brewkettles that date back to the late 1800s/early 1900s. Most noteworthy, however, are the Yorkshire squares that Samuel Smith ferments its ales in. These are open, square vessels carved out of blue slate quarried in Wales. They're arranged in doubledecker fashion, with upper and lower chamber connected by a manhole and a series of pipes. As the wort ferments, it rises through the manhole to the upper chamber (the "barm deck"). There, the yeast collects around the rim (for eventual reharvesting) while the wort pours back into the lower chamber.

This system suits Samuel Smith's ale yeast very well. The top-fermenting strain is highly flocculent and rises to the surface rapidly. Like a lazy schoolboy, it has to be sent back repeatedly to do its work. Within 36 hours after the yeast has been pitched, the brewery begins a regimen of pumping and rousing every two hours using a fish-tail spray nozzle. The result of this system is a lively effervescence and a full-bodied beer that's said to "drink very full for its gravity." The aeration of the wort also produces a considerable amount of diacetyl, which lends the beer a house character best described as "buttery."

Samuel Smith Oatmeal Stout is available in all 50 states in four-packs of 12-oz. bottles and single 18.7-oz (550 mL) containers.

Both are fashioned from clear glass, a matter of controversy. "People speculate about freshness a lot," admits Shapiro. "But the cardboard surrounding the four-packs extends to within an inch or so of the top of the bottle, and the gold-foil neck wrap also helps prevent exposure to light." As for the singles, "the rotation of beer through the marketplace is very good," assured Shapiro, greatly reducing the chances of getting a lightstruck sample.

Samuel Smith Oatmeal Stout is a bottled-only product on both sides of the Atlantic, but the brewery does produce its paler ales in a cask-conditioned form. These are racked into 36-gallon oaken barrels and delivered to local pubs via horse-drawn carts. Samuel Smith maintains a stable on the premises housing several gray shire horses. These immense equines can reach a height of over 17 hands (nearly seven feet) and literally weigh a ton.

The style oatmeal stout originated in the nineteenth century, possibly as a reaction against a nascent temperance movement which was especially strong in the manufacturing centers of northern England. By adding lactose, whey, licorice, oatmeal and even oysters to the formula, brewers could claim a nutritional value for their beers. "They used to prescribe beers for invalids, nursing mothers, and athletes. That's pretty much the whole country!" observed Seb-

bie Buhler, sales rep for Rogue Ales, at a recent tasting featuring Rogue Shakespeare Stout (brewed with rolled oats).

The style enjoyed a slight resurgence following World War II. Notes Michael Jackson: "In the late 1950s, when I did my first drinking, there was a stout called Hammerton, which advertised itself with the slogan 'Hammerton for Zest.' It may have contained alcohol; I am not sure. I have a vague recollection of drinking this once or twice and finding it very smooth." In his *Beer Companion*, Jackson mentions that the style appears to have expired when Eldridge Pope discontinued its oatmeal stout in 1975.

Stout in general became an endangered species during the 1960s and 1970s, recalls Jackson. "Sweet stouts had the reputation of being favored by old ladies in blue-collar neighborhoods. Every local brewer once made its own sweet stout, but these gradually vanished, and pubs would simply offer Mackeson."

"In the dry stout market only Guinness had ever been well known, and this had the image of being exclusively for Irish ethnics, usually construction workers. When I was a kid, Irish construction workers seemed macho; by the 1960s, macho was out of style. Irish ethnic working class meant the Beatles, and they probably preferred LSD to Guinness."

Samuel Smith's Evil Twin

Ingredients for 5 gallons:

0.5	lb flaked oats, toasted (0.23 kg)
1	lb 75° L British crystal malt (0.45 kg)
0.5	lb British chocolate malt (113 g)
0.25	lb roasted barley (113 g)
4.5	lb Munton's light dry malt extract (2.6 kg)
3	oz East Kent Goldings 4.25% AA bittering hops (56.7 g)
1	tsp Irish moss (5 mL)
	Wyeast 1084 Irish ale yeast or White Labs WLP004 Irish ale yeast
0.75	cup corn sugar to prime (175 mL)

- Original Specific Gravity: 1.053
- Final Gravity: 1.012 - 1.014
- IBUs: 30
- SRM: 35

All-Grain Recipe

For all-grain, substitute 7.5 lb British pale malt for the extract and drop hops to 2.5 oz.

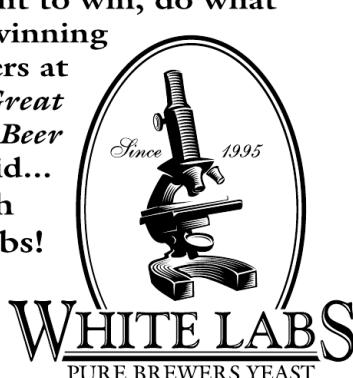
Brewers Specifics:

For all-grain, mash 7.5 lb (3.4 kg) British pale malt with specialty grains at 150° F (66° C) for 60 minutes in place of the extract. Toast oats on a cookie sheet in an oven at 325° F (163° C) for 75 minutes, turning every 15 minutes. Steep toasted oats and specialty grains in 1 gallon of 150° F (66° C) water for 20 minutes. Sparge the grains with 0.5 gallon of 150° F (66° C) water. Top off kettle to 2.5 gallons total volume and add extract. Bring to a boil and add hops. Boil 50 minutes, then add Irish moss and boil another 10 minutes. Strain wort into primary fermenter with enough cold water to make 5 gallons. Pitch yeast when temperature drops below 80° F (27° C). Ferment 5-7 days, then rack to secondary fermenter. Bottle with corn sugar when fermentation is complete.

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Section A: Brewer Information

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4. City _____ State/Province _____ Zip/Postal Code _____
5. Country _____ Phone (H) (_____) _____ (W) (_____) _____
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7. Homebrew Club (Please spell out full name of the club. Do not abbreviate.) _____
8. AHA Membership Number (if you are already a member) _____
9. Join the AHA and save on entry fees! Or renew your membership (enclose a separate \$33 check) New Membership Renewal
10. Entry Fees Enclosed.

 AHA Member AHA members pay \$8 per entry : _____ no. of entries x \$8 = \$ _____ total

 Non-member Non-members pay \$12 per entry: _____ no. of entries x \$12 = \$ _____ total

Section B: Entry Information

- II. Category and Subcategory (Print full names) _____
12. Category Number (1-29) _____
13. Subcategory Letter (a-e) _____
14. Name of Brew (optional) _____
15. For Mead and Cider (check one): Dry Medium Sweet
16. For Mead and Cider (check one): Sparkling Still
17. SPECIAL INGREDIENTS:

If you have entered in any of the following categories 19e, 20c, 21, 22, 23b, 24, 25, 26, 27, 28b, 28c, 29 refer to part II of the Rules and Regulations and the NHC Style Guidelines at www.beertown.org for instructions on filling out the spaces below. The judges will use this important information for evaluating entries in these categories. Leave these spaces blank if you have not entered the above categories. Entrants of Historical Beers are asked to provide the historical beer style and information on the style profile and history as an aid to judges.

Classic Style _____

Special Ingredient(s) _____

Enter Charles Finkel. Finkel grew up in Oklahoma, a state where Prohibition was not officially repealed until 1959 and where 3.2 beer is still served today. Perhaps to satisfy a rebellious nature, he entered the alcohol trade, first as a wine salesmen, then later as the founder of Seattle-based Merchant du Vin, the country's first specialty beer importer. With a portfolio made up of Samuel Smith, Orval, Lindemans and Ayinger, Finkel gave many American drinkers their first taste of classic European beer styles. Some of the early microbrewers back-engineered their products from Merchant du Vin beers. Pete Slosberg, example, admitted that his Pete's Wicked Ale sprang from an unsuccessful attempt to recreate Samuel Smith Nut Brown Ale. And the Red Hook Ale Brewery in Seattle, on an early brochure, credited Samuel Smith Taddy Porter as the inspiration for its Blackhook Porter.

Finkel learned about oatmeal stout from a one-sentence mention in the first edition of Michael Jackson's *World Guide to Beer* (published in 1977). Reportedly, Samuel Smith reacted with skepticism to his suggestion that the brewery revive the style. Since its introduction in the early 1980s, however, Samuel Smith Oatmeal Stout has become that line's lead seller in the American market, according to Alan Shapiro, Merchant du Vin's sales manager.

Michael Jackson says he had no hand in the formulation of Samuel Smith Oatmeal Stout, but he states, "I'm delighted to have played a part in its revival." He believes there are more oatmeal stouts being brewed in Great Britain right now than at any previous time in the island's brewing history. Young's Oatmeal Stout is widely distributed, and Scotland produces several fine examples, including Maclay Oat Malt Stout, one of a very few versions brewed with malted (as opposed to rolled or flaked) oats.

The use of oats in brewing, however, extends beyond England's borders. Belgian farmhouse breweries were turning out oat ales hundreds of years ago. In the nineteenth century, brewers in Flanders

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made a style of golden ale called *uytzet*, in which small amounts of raw wheat or oats were added to the barley malt. The white beers of Hoegaarden, according to Pierre Rajotte in his book *Belgian Ale*, were once brewed with one-quarter to one-third raw oats in the grist.

Mumme or mum, a strong spiced ale brewed with oats and wheat, was popular in England and pre-Reinheitsgebot Germany. An eighteenth-century recipe reprinted in Cindy Renfrow's *A Sip Through Time* calls for a substantial amount of oatmeal plus ground beans, barberries, fifteen different spices and five "new-laid" eggs. A Mr. Christian Mumme of Braunschweig (Brunswick), Germany is credited with inventing this style in 1489. It went over so well that it inspired the following couplet: "*Der Dumme! Der Dumme!
Ein jedes Lob verstumme vor Mumme!*" (Loosely translated: "Only a fool would withhold praise from Mumme.")

United States brewers, despite their reliance on adjuncts, have had little to no experience with oats. A 1946 textbook called *The Practical Brewer*, in a chapter on adjuncts, discusses five types of corn, as

well as rice, wheat, beet sugar, soybean, kafir, milo and manioc. But *Avena sativa* (oats) is conspicuously absent.

The reason lies in the oat's composition. The grain is rich in gluten, an elastic protein that lends oatmeal cookies and porridge their chewy, gummy texture. Oatmeal tends to gelatinize during the mash, clogging the equipment and impeding the run-off if the brewer isn't careful. "I hate it! It gums up the mash tun!" replies Mark Kauffman, head brewer at John Harvard's Brewhouse in Washington, DC, when asked how he likes brewing with oats. His seven-barrel brewhouse, he recalls, yielded only five barrels of oatmeal stout. Admittedly, Kauffman used 15 percent oats in his grain bill, an unusually large amount; most brewers stay below 10 percent.

The oils in the oat's hull also present problems. In his book *Stout*, Dr. Michael Lewis of UC Davis recounts an experimental oat ale he brewed with pale malt and 30 percent oats. The beer, he writes, had an "unfilterable haze." This would not matter in an opaque, ebony-colored brew, but would be a serious defect in a light lager, where absolute clarity is expected. *(continued on page 60)*

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A (Dry) Stout



for Every Homebrewer

by Ray Daniels

Sooner or later, every homebrewer makes a stout. It is a classic style, a standard of the brewer's art. Anyone who professes to be a good brewer should be able to crank out a decent stout almost without thinking about it.

For some reason, stouts are very popular with the homebrewing crowd. Some odd logic, some mysterious karma draws new homebrewers to the beer kits labeled "Stout." One wonders if it is just the color of them, like a sort of zymurgical black hole that sucks people in from across the room. Whatever it is, homebrewers seem to produce stouts far more frequently than they order them at brewpubs or bars.

As evidence of this popularity, stouts often constitute the greatest number of entries by style in homebrew competitions. For many years, stouts were the biggest category in the American Homebrewers Association's National Homebrew Competition (NHC). In recent years, pale ales have taken over the number one position, but the tally of all stouts still ranks second and they account for nearly seven percent of all entries.

Current homebrew competition guidelines (see beertown.org) give brewers five different sub-categories of stout. Brewers can designate their stout as either dry, foreign, sweet, oatmeal or imperial in style. Despite the broad range of parameters covered by these stout sub-styles, there are always a lot of beers that just aren't very stout-like. Why? Well, somewhere in the middle of all this stout making, some basic principles of stout get muddled.

Nowhere is this more evident than in that most basic of brews, the dry stout. This is the style that is based on Guinness. Mind you we are talking about the draft product as sold in the United States or in those big cans that bubble and foam when you open them. Guinness makes many different versions of stout, but this is the classic and the one that defines the dry stout category.

A common misconception about dry stout is that it is strong. For hundreds of years, beer drinkers have equated darkness of color with alcoholic strength. Of course the two are basically unrelated. The problem is that many homebrewers fall for the same assumption. Thus when making a stout, they throw in lots of malt—or worse yet, sugar—to boost the alcoholic strength of the brew. In truth, draft Guinness (at 4.2 percent abv) has a lower alcoholic content than Budweiser (at 4.7 percent abv). Because of this, brewers hoping to clone draft Guinness should shoot for a relatively low original gravity, usually about 1.040.

Another problem often encountered in making stout is kitchen-sinkitis, also known as the tendency to throw in a little bit of everything. Like most classic beers, stout is basically a very simple product. Many stouts are made with nothing more than pale ale malt and roast barley.

Roast barley is the ingredient that defines stout and clearly distinguishes it from porter and other dark ales. It provides a firm roast character often reminiscent of coffee, but without becoming too acrid or bitter. For a dry stout, roast barley generally constitutes about 10 percent of the grist.

Table 1: Water Chemistry of Classic Stout-Brewing Cities

(Ion concentrations as ppm or mg/L)

	London	Dublin
Calcium	50	115
Magnesium	20	4
Sodium	100	12
Carbonate	160	200
Sulfate	80	55
Chloride	60	19

As in virtually all British beers, pale ale malt constitutes the vast majority of the grain used in making a stout—usually 80 to 90 percent of the total.

Some commercial recipes stop right there: 90 percent pale ale malt, 10 percent roast barley—and this will make a very nice dry stout. Indeed, if a whole lot of other things are added—especially crystal malt to any significant degree—the fundamental character of the dry stout begins to get lost.

The one additional ingredient often used in dry stouts is flaked barley. This is raw barley that has been pressed in a hot roller, gelatinizing the starch particles and making them accessible to mash enzymes. Flaked barley contributes to the wonderful creamy head that dry stouts are known for. In a dry stout, this ingredient can account for five to 10 percent of the total grist.

As with malt, the watchword with hops is simplicity. Dry stouts are not known for hop flavor or aroma and the best-regarded examples omit late hop additions altogether. As a rule, all of the hops added for a dry stout recipe should be boiled for 45 minutes or longer.

Now the big question: how much bitterness is desired in a dry stout? Beer bitterness is traditionally measured in International Bittering Units or IBUs. Mass-produced American lagers have 10-15 IBUs, but most classic European beers have something in the range from 20 to 50 IBUs. It turns out that dry stouts have relatively high bitterness levels, usually ranging from 30 to 45 IBUs.

As far as hop variety is concerned, British brewers use traditional English varieties including Goldings and Fuggle. American brewers can use these varieties as well as the U.S.-grown relative Willamette for dry



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Dublin Sustenance Dry Stout

Recipe for 5 gallons (19 L)

O.G.: 1.039 - 1.042

Select either the all-grain or extract grist:

All Grain Grist

7 pounds pale ale malt
0.75 pound flaked barley
0.75 pound roast barley

Mash at 150° F (66° C) for one hour.

Extract Grist

3.3 pounds light, unhopped malt syrup
1.25 pounds light, unhopped dry malt extract
0.5 pound pale ale malt
0.5 pound flaked barley
0.75 pound roast barley

- Using a grain bag, soak the grains in your brewing water at around 150° F (66° C) for an hour. Alternately, toss the grain bag into the pot of cold water and stir periodically as it heats. Remove the grains from the water when the pot is about to boil. After this add the malt extract and bring to a boil.

Boil and Fermentation for both Grists

- Select Golding, Fuggle or Willamette hops and add: 8.5 HBUs of hop pellets or 10.5 HBUs of whole hops (1). Boil this hop addition for 60 minutes.

(1) HBU = alpha acid percentage of the hop x number of ounces. Thus, 2 ounces of 4.5% alpha acid content hops equals 9 HBUs.

- When the wort is cool, pitch with Chico Ale or American yeast and ferment at 65 to 68° F (18-20° C).

stout hop additions. These varieties are not required however, since their use for bitterness will lend little hop flavor to the beer. Thus more readily available (and less expensive) high-alpha varieties can be used just as successfully.

Virtually any ale yeast will make an acceptable stout, but interpretations of the prototype Guinness would seem to benefit from a clean fermenter like the American or Chico ale strain that is widely available. One would think that strains labeled as Irish

ale yeast would be perfect for stout, but this is not always the case. Some give a slightly fuller body and may lend a touch of diacetyl-induced butterscotch sweetness to the finished beer. Such traits may play well in foreign and Imperial stouts, but for the dry sub-style, cleaner more attenuative yeasts are preferred. For those who prefer dry yeasts, most British strains make a fine choice for making this style.

Those who want to make worry-free stout can skip right to the recipe. But there are two other issues that merit discussion for those who wish to delve into all of the details, namely water chemistry and mash temperatures.

Stout was born in London and took up permanent residence in Dublin not too much later. Thus when we think about water for this classic style, we look to these two cities. Today neither offers what I think of as suitable water for this brew. (See Table 1.) The levels of bitterness seen in dry stout require a crisp, clean character that is not possible when the water contains considerable quan-

tities of carbonate. Both cities show high levels of this common ion. Modern commercial examples no doubt begin with water that has been treated to drop carbonate levels below 75 ppm.

A second water feature that should contribute to the overall character of a dry stout would be the use of gypsum or calcium sulfate. Most all-grain brewers will need to add some calcium to their mash in any case. Here the sulfate has the added benefit of aiding the achievement of a crisp bitterness desired in the style.

With regard to mashing, the style is generally mashed at the lower end of the saccharification range. Past winners have averaged a mash temp of 153° F (67° C); most fall in the range from 150-155° F (66-68° C). Now, with all of this background established, we can build a foolproof recipe for a classic dry stout.

Veteran homebrewer Ray Daniels made a stout as his second batch of homebrew more than ten years ago. These days he always has a few stouts around the house.



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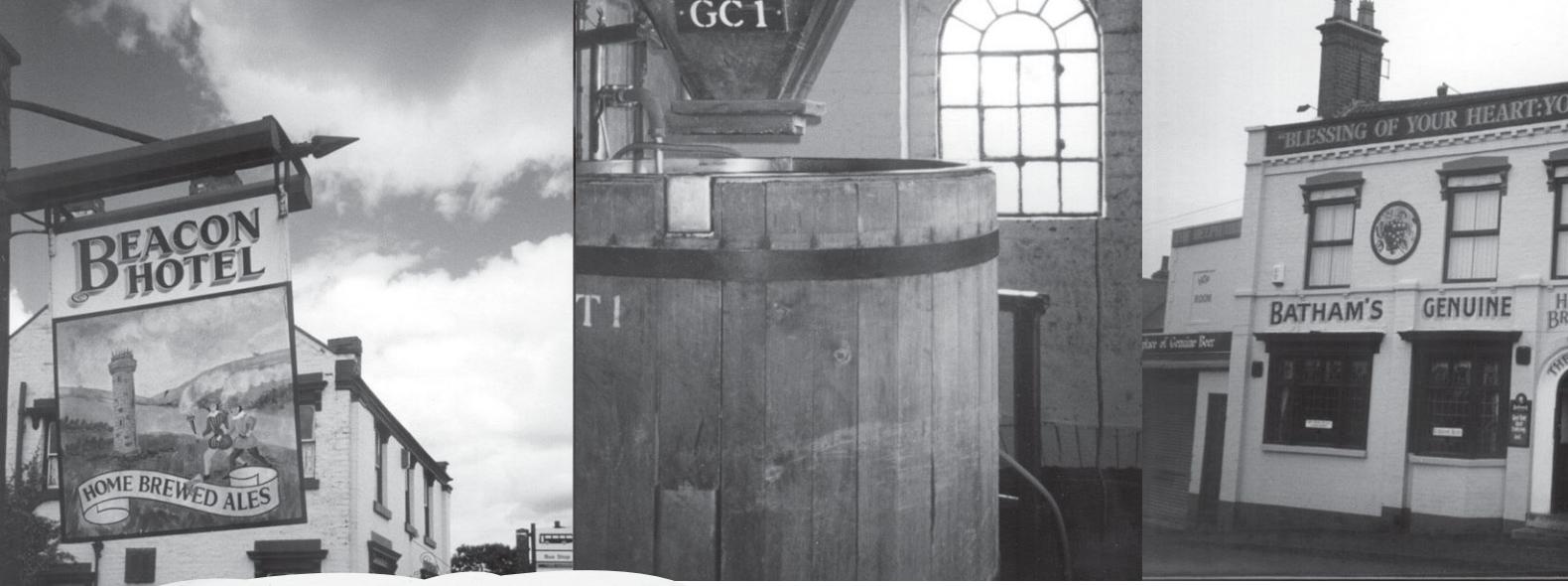
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If you had to select the most unlikely beer style to spawn a revival campaign, chances are it would be mild ale. Long since surpassed by its stylistic descendants, mild barely registers a blip on the beer radar screen these days, even in its homeland. Often maligned and derided as an old-fashioned, proletarian drink, could any other style be more suitable for the spent-grain heap of history?

Astonishingly, there's a renewed appreciation of this gentle libation, once the most popular style in Britain. Staunch consumers have forcefully lobbied for its life, while dedicated craft and homebrewers responded by steadfastly producing and boosting the style. In the UK, the Campaign for Real Ale launched a regular "Make Mine Mild" campaign, topped off with the annual "Make May a Mild Month" promotion. To cap things off, Moorhouse's Black Cat was judged to be the Supreme Champion Beer of Britain in August 2000, the first time a mild had garnered the honor in 20 years. Mild ale might still be a long way from its onetime preeminent position, but there is clearly a lot of life in the old girl.

It's quite easy to understand why. Mild is a fascinating style, steeped in history and rich in flavor. It is also "the ultimate session beer," a low-gravity tipple (typically around 3.5% by volume) that's perfect in a time of heightened alcohol awareness. For brewers, there's the challenge to maximize flavor and complexity in such a modest, simple beer.

That said, mild ale remains an enigma, even in light of a great deal of contemporary research (most notably David Sutula's *Mild Ale* in the Classic Beer Style Series). Stylistically it straddles the guidelines for Brown ale, porter, stout, old ale, scottish-style light (60/-), and even bitter. Commercially available examples vary widely in color, mouthfeel, and strength. Color can run the gamut from amber to deep copper to black. A mild might be light, dark, sweet, dry, roasty, chocolatey, coffee-ish, caramelly, toasty, or tannic. And while most weigh in at four percent ABV or below, some well-known brands are higher in alcohol. Indeed, the most famous commercial example occasionally available in the US, Sarah Hughes Dark Ruby Mild, is a non-weeby six percent ABV.

The relative dearth of examples in the United States makes it quite difficult for homebrewers and domestic beer judges to get their bearings on the style. Only a handful of North American brewpubs produce mild with



any regularity. And even if you visit the UK, searching for mild can be a frustrating proposition. This is true even if you're hunting in the Midlands, the style's traditional home. In some areas, particularly in London and the southeast, milds are incredibly rare.

Over the past 15 years, I've been fortunate to sample over 60 commercial milds from all regions of Britain and to visit the breweries that produce most of the best-known brands. While that may not make me an expert on mild, it does give me some perspective. So, hopefully my musings here can help you unravel some of the mysteries of the style.

TRADITIONAL MILD

In modern times, mild connotes a British style of ale that is simply less hoppy than pale ale and usually not so strong. Most examples are dark in color, from deep copper to dark brown, almost black. They are typically brewed with a pale malt base, but with darker crystal malts, roasted malts (chocolate or black), or roasted barley in the grain bill. A handful of breweries still produce a light mild: an amber hued brew similar in gravity and hopping but made without roasted grains. Typically, these brewers make both light and dark versions. Often the latter are produced by the addition of caramel for color and added sweetness.

While every researcher and writer of the style agrees on the contemporary connotation of the term "mild," there is some disagreement of its meaning through history. Certainly, it never had anything to do with alcoholic strength. Until the twentieth century, mild wasn't a low gravity ale. In the early 1800s a typical mild would have an OG of 1.085 and even by the late nineteenth century, the average gravity was still a robust 1.070. By the early 1900s, most milds were still 1.050+ beers. The erosion in strength occurred gradually through the twentieth century, mirroring the decline in strength of all British beers.

MILD MUSINGS

BY STEVE HAMBURG

Divergence comes in whether the term implied "not bitter" or "not sour"—although in the end, it's most likely a combination of both. We know that the earliest ales of Britain weren't hopped at all. And even after the introduction of hops into Britain in the fifteenth century, brewers would not use them in larger quantities for another 200 years. "There is no doubt as to

the origin of mild ales," said Dr. John Harrison of England's renowned Durdene Park Beer Circle. "For the first 200 years of hopped beer in the UK (1480-1680) all beers were mild." This, he contends, was mainly due to the scarcity and high cost of hops. Higher hop rates in beer didn't appear until the late seventeenth century, when strong March and October beers became popular among country brewers.

On the other hand, mild was also the term used to refer to a freshly brewed strong ale that hadn't had time to pick up the sour, acetic acid character that typified mature, aged beers. Publicans would carry both "stale" and "mild" versions and blend the two to the customer's taste. We also know that these earlier renditions were simply immature versions of the standard brown beers of the day. They would have been made with brown malt smoked by hardwood fires, so the beer would have a very smoky palate. This is definitely not the case today. As consumer tastes evolved, so did the characteristics of mild. In time, as modern dark malts were substituted for smoky brown malt, milds became best known for their maltiness and restrained bitterness.

MODERN MILD'S DECLINE

For the past several decades, mild has been viewed as the inexpensive refresher of the common laborer, a beverage meant to provide sustenance to the factory worker, coal miner, or the farmhand. The problem, so goes the classic argument, is that we live in a post-industrial era. Fewer people are blue-collar workers, and fewer still

want to be identified with that image. Beer icons Michael Jackson and Roger Protz have often written about this "cloth cap," old-fashioned image, and this has led some to conclude that this was the main reason for the style's decline. Mild's fall from grace was not so one-dimensional, however.

Beyond these tenuous ties to the working class, the simple fact is that mild, in its most common form, is a "dark beer." Therefore, it is burdened with the standard—and obviously spurious—negative connotations: too heavy, too strong, too alcoholic, too many calories. Mild's popularity was gradually eaten away by the broad popular trend towards paler drinks that typified the last 30 years. In that sense, its decline was not altogether different than that of traditional ales in general and dark ales in particular. Strong links can also be made to the consolidation in the British brewing industry, which led to a significant reduction of, and homogenization in, brands and styles.

There's another critical reason for the decline in the style's popularity, one that cuts more to the core of why people buy a pint—for many years, the shrinking number of commercial mild ales available were not particularly good beers. That may sound blasphemous, but I'm a strong believer that the public ultimately votes with its dollars (or pounds, in this instance). For a beer style to survive, even as a connoisseur's drink, it

must still have attractive, inviting flavors and aromas. But in my experience, most milds I've tasted have been boring and bland.

Why would this be so? Decades ago, part of the blame could be traced to mild's indifferent, occasionally unscrupulous, handling by publicans. In fact, rumors still persist that the "slops" (overpours, leftovers) from other beers are dumped back into mild casks, even though this practice has long been banned. Today, mild has become a rare presence in most British pubs, so fewer publicans have any experience with its proper care and serving. Poor cellaring, however, has rarely been my complaint. Rather, I think the issues are recipe and ingredients, and these can be tied to two trends in British brewing in the twentieth century: the gradual decline in beer strength combined with the increasing use of non-malt adjuncts.

A few years ago, while re-judging a flight of winning beers at the Great British Beer Festival, I made the typically American (translation: loud and insensitive) observation that "if this is the best mild in Britain, I can understand why the style is dying." The rest of the judges on the panel fell silent, as if I'd spit on the Union Jack. But they didn't remain that way for long. "This is exactly what a mild should taste like," I was chided. Pleading ignorance, I apologized humbly, and this temporary affront was politely overlooked as judging resumed.

NON-AGGRESSIVE MILD ALE

You don't have to duplicate London water to brew a tasty mild. British malts are recommended on a first attempt, but feel free to experiment with domestic varieties. High quality is important. I've had excellent results with domestic and imported malts. Proper yeast selection and a non-aggressive hopping schedule will produce authentic results. Choose your yeast wisely. You want a strain that is not very attenuative to help with the beer's body. Remember that many ale yeasts have been selectively developed to achieve higher attenuation and will yield drier and more alcoholic results. My personal preference is Wyeast 1318 London III.

Recipe for 5 gallons (19 L)

- 8 lb pale ale malt (3.6 kg)
- 0.5 lb 55° crystal (0.23 kg)
- 0.5 lb 75° caramel malt (0.23 kg)
- 0.5 lb wheat malt (0.23 kg)
- 2 oz chocolate malt (57 g)
- 2 oz (57 g) Fuggles (4.9%) Add one third at boil, one third at 20 minutes and one third five minutes before boil end.
- Mash at 155-158° F (68-70° C) for 60 minutes.
- Boil, just over 60 minutes.
- 1.040 Original Gravity
- 1.010 Final gravity
- Ferment 7 days in primary and 7 days in secondary.

Extract recipe

- 3.3 lb light malt extract syrup (1.5 kg)
- 1.5 lb light dry malt extract (0.68 kg)
- 0.25 lb 60° L British crystal (113 g)
- 0.25 lb 550° L British chocolate malt (113 g)
- 1.25 oz Fuggles (4.9%), 60 minutes (35 g)
- 0.5 cup corn sugar for priming (118 ml)
- 1.036-40 Original Gravity
- 1.010-1.014 Final Gravity
- ~25 IBU 3% ABV
- Steep crushed malt first for 30 minutes at ~170° F (77° C) then remove grain bag, add extracts and bring to boil. Add hops soon after reaching boil. Boil for 60 minutes. Ferment between 65-70° F (18-21° C).



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Had the above incident occurred more recently, I would not have given in so easily. Our subject had been a beer that was thin, bland, and one-dimensional, with no malt expression save a bit of burnt flavor in the finish. To my mind and taste buds, if this was what milds were supposed to taste like, I wanted no part of them. Had I ordered it in a pub, I would have been hard pressed to finish the pint, much less order another. I'm quite sure my opinion was not unique.

At issue was the widespread use of adjuncts in the brewing of most commercial milds in Britain. It's not uncommon for sugar (added to the boil kettle) to account for as much as 15 percent of the original wort gravity. This process is not unique to the production of milds, but is fairly common throughout British brewing. The overall effect, regardless of style, is a thinner body and reduced overall malt character. In my opinion, high adjunct use robs mild of some of its most desirable features, resulting in a beer that is thin and insipid, at best. This was the expected flavor profile for my panel colleagues, and explains the huge difference in our reactions.

That's not all. Some breweries merely add caramel for coloring and additional flavoring after fermentation is complete. One well-known producer (Batham's), famous for its oft-photographed pub, brews a single beer (a 1.043 OG bitter) and then adds brewing liquor (de aerated water) to lower the gravity and caramel for color. The brewer is unabashedly open about his technique, calling his mild (dry hopped with Goldings) a "dark pale ale." In the summer of 1997, Ray Daniels and I supervised each other in a blindfolded tasting of these two beers at their pub. Neither of us could distinguish one from the other.

A growing number of smaller breweries have caught on to the weakness of milds and are eschewing adjuncts in whole or in part. They have introduced milds of surprising complexity, and this bodes well for the future of the style. These beers have a noticeably fuller mouthfeel and greater malt expression throughout. Almost without exception, I found that I much preferred their interpretations, beers that were complex, luscious, and absolutely delicious. They exhibited aromas of dark fruit, chocolate, and espresso, even some underlying hop flavor and bitterness. Sound like characteristics of porter and

stout? Absolutely. Many a good mild has been favorably compared to these styles. Moorhouse's Supreme Champion, Black Cat, for example, could easily be mistaken for a lighter-bodied porter. It's no surprise that David Sutula's first homebrewed mild resulted from an attempt to brew a porter!

Should these porter/stout qualities make a beer unfit for the mild moniker? No, and with good reason. A sampling of milds in Britain will reveal a fair amount of regional variation. Beer writer Roger Protz has noted that milds in the northwest of England have traditionally been brewed slightly stronger, hoppier, and roastier than the norm elsewhere. This is because they were meant to compete with Guinness, which has long had a large following around Liverpool and Manchester. Brewers tried to capture its most desirable qualities while producing beers of a lower gravity to keep them affordable to the urban poor. Black Cat, brewed in Burnley, Lancashire, north of Manchester, is a great example of this northwestern interpretation.

I'm lucky enough to have an excellent mild regularly available at my local brew-

pub, Chicago's Goose Island. Their PMD Mild is brewed with a simple recipe of pale (75 percent), chocolate (5 percent), and wheat (20 percent) malts, and Fuggles hops. Often available cask conditioned, PMD is amazingly complex and rounded for a three percent ABV beer. These "nuveau milds" can and should be our models as we brew milds for the twenty-first century.

CHANGES WITH STYLE

It's time we recognized the changes going on in mild by updating the BJCP style guidelines. At the very least, we need to update the list of commercial examples (Fuller's Hock was discontinued, Robinson's is called Hatters Mild) and include some of the newer British champions of the style (Black Cat, Batemans, Coach House's Gunpowder Strong). We can allow for a slightly higher gravity range, although it's not necessary to expand it to include "throwback" milds such as the six percent Sarah Hughes. Such beers can be accommodated in other categories, such as old ale. (continued on page 60)

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For Geeks Only

Reader Advisory: *Warning!* These pages are rated XG (eXtra Geeky) by the Bureau of Magazine Muckymucks. Items in this section may contain raw data, graphic functions, full statistics and undiluted biochemistry. Keep away from poets, squeamish novices and others who may find the joyously technical nature of this prose to be mindbendingly conceptual or socially offensive. Also, because of the complex nature of brewing science, there is no guarantee that you will live longer, brew better or win any awards in the next homebrew competition based upon the conclusions presented here.

Cold Water Extraction of Dark Grains

By Mary Anne Gruber

The use of dark roasted grains has become common in homebrewing and craft brewing, yet the desired results are not always achieved. Even when the same proportion of similarly named grains (roasted barley, for instance) is used, the color contribution and flavor character can vary. One objection that is sometimes raised is the presence of overly harsh or astringent flavors in the finished beer. In the past, some have suggested adding dark grains at the end of the mash rather than including them from the beginning. This may address the harshness issue, but it still does not help control the color obtained from the grains. More recently, there has been some discussion about cold steeping of grains to address these issues.

At Briess Malting Company, we have recently conducted some tests to compare various methods of dark grain extraction by looking at the flavor and color of the resulting worts. This article presents our findings.

Materials and Methods

Experiments were conducted with both black malt and roasted barley. The black malt used contained 6.1 percent moisture and had a color rating of 475 Lovibond. The roasted barley had a moisture content of 4.4 percent with a color rating of 325 Lovibond. In both cases, the grains were prepared by milling to a coarse texture as would normally be done for mashing. Both the hot and

cold water procedures were undertaken using 12 gallons of water and 10 pounds of the grain being studied.

For the cold water procedure, two kettles were filled with the water at 64° F (18° C). The two grains were placed into separate steep baskets, one for roasted barley one for black malt, and the baskets were then dipped into their respective kettles. The steep baskets were dipped several times to ensure that all particles were wetted and then left submerged in the kettles for 20 hours to allow for extraction. At the end of the extraction period, the baskets were raised above the liquid and the grain squeezed gently to remove as much liquid as possible.

For the hot water procedure, two steeping periods were examined: five minutes and 30 minutes. This was done for each of the two grains resulting in a total of four batches. As with the cold water procedure, 12 gallons of prepared water was filled into each kettle. The water was then heated to 180° F (82° C) and the steep baskets full of grains dipped into the water several times to ensure wetting. One set of baskets was steeped for five minutes; the second set for 30 minutes. The temperature during steeping was approximately 165-167° F (74-75° C). When the baskets were removed, the grain was squeezed gently to remove as much water as possible.

In the case of the roasted barley, a fifth

option was evaluated. In this fifth case, pre-ground grain was added directly to the boil kettle and subjected to a 10-minute boil. This method was chosen to emulate a technique sometimes recommended by older homebrewing texts.

Following the preparation of these worts, samples were submitted to the Briess in-house tasting panel. This eight-member panel routinely tastes wort samples to assess their quality and consistency for the company.

Results

Quantitative and qualitative analyses of the worts are shown in Table 1 (for black malt) and Table 2 (for roasted barley). With regard to the black malt preparations, the taste panel preferred the cold water extraction (with no boil). Their second preference was the five minute hot water extraction. One striking difference between the two was the fact that the aroma of the malt was far less evident in the hot water sample,



Table 1: Black Malt Extraction Results

	pH	Color	Flavor
20 hour cold water steep	6.03	386 L	Bland, no astringencies, some dryness
10 minute boil	5.22	455 L	Some bitterness, a little cooked flavor
5 minute hot water steep	5.63	458 L	Smooth, full flavor, slight harshness
30 minute hot water steep	5.34	513 L	Some bitterness, harshness, astringent

Table 2: Roasted Barley Extraction Results

	pH	Color	Flavor
20 hour cold water steep	5.95	271 L	Cold coffee, mild
Cold Water Steeping with a 10 minute boil	5.30	290 L	Good coffee flavor and aroma
5 minute hot water steep	5.58	347 L	Full flavored coffee
30 minute hot water steep	5.08	446 L	Harsh, astringent, no coffee aroma
Preground in the kettle	4.89	408 L	Harshest, most bitter 10 minute boil

indicating dissipation of the volatile aroma products during production.

In the roasted barley preparations, we found that cold water steeping and the short hot water steeping produced similar flavors. As a result of this, the taste panel showed no significant preference between these two methods.

From a practical perspective, brewers can precisely control finished beer color by adding cold-water extract to the kettle near the end of the boil. This prevents some of the guess-work involved in color determination. Second, the cold-water extract solution has been saved following the procedure described below and used in the brewing of a variety of beers for nearly six months now. During this period the extract has remained stable. It has developed no off aromas or flavors, no sediment or growths and the flavor impact remains consistent.

In general then, we feel that the cold water steeping procedure provides some significant advantages to the brewer, as follows:

1. Cleaner flavor, less harshness/bitterness
2. More accurate color addition to the wort.
3. Left over extract solution can be saved for the next brew.

Recommendations for Homebrewers

Based upon these findings, we have

developed a procedure that homebrewers can use to replicate these results in their own brewing. Here is the procedure for cold water extraction at the five gallon scale.

This procedure works well using black malt, chocolate malt, roasted barley or black barley. As with a normal full-mash extraction, the typical yield is 50 percent for black malt and chocolate malt, and 45 percent for roasted barley and black barley.

Materials

2 quarts water (1.89 L)
1 lb crushed grain, the finer the better (0.45 kg)
Glass coffee pot
Strainer

Procedure

The day before brewing, crush the grain, add cold tap water to the coffee pot, mix in the grain and let set on the counter until you are ready to use. If you think of it, swirl the pot a couple times during the steeping period. When you are ready to use, decant. If you want to recover the maximum amount of extract, pour into a coffee filter and squeeze. Add to kettle near the end of boil. Start by adding a small amount, check the color. Continue adding a small amount until the desired color is reached.

Storage

To keep the remaining liquid heat to about 150° F (66° C). Transfer to a mason jar. Seal and store in the refrigerator. This keeps a month or longer.

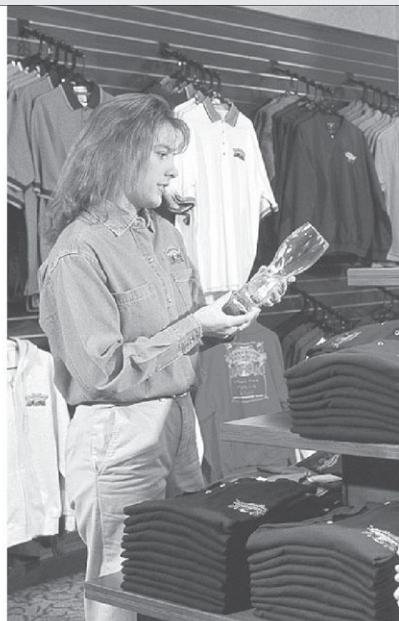
Mary Anne Gruber is the Director of Technical Services for Briess Malting Company where she has worked for 40 years. She began her career in the QA/QC lab and has worked in nearly every function including malting, pilot brewing, milling, R&D, extract production and sales.



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BY CHARLIE PAPAZIAN

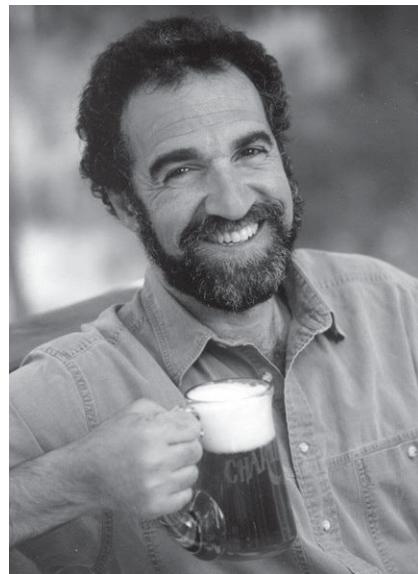
Drinkably Dark: Exploring Black Lager

It must be genetic, because nothing has changed. Dark is strong and heavy. Most beer drinkers throughout the world still hold on to the belief that if the beer is dark, it is heavy and strong. How much farther can that be from the truth? Sure, there are those beers like imperial and extra stouts and black porters. Even most brown ales tend towards fullness in character. But the truth of the matter is that there are dark styles of ales and lagers that do have high drinkability and if they were enjoyed with eyes shut, the enjoyment would not be prejudiced by color.

All of us are prejudiced by the color of the foods and beverages we drink. Yes, even I am. I can be convinced by color alone that a beer is heavier and more flavorful. Yet when that dark beer is compared with its lighter version I have been known not to be able to tell the difference. I could be fooled by color alone.

So if we are predicated to think when we drink, then there is a possibility of overcoming our visual biases and enjoying the balance of dark ales and lagers that are not stereotypical. Unfortunately you won't be able to try these drinkable dark lagers and ales in most brewpubs—nor are they available in the marketplace except on rare occasion. That's because the consumer has a prejudice. There is no demand. You won't find many dark mild ales or four percent German style schwarzbiere (black beers) in the American marketplace. First because they are dark. Second because they are not very strong in alcohol. This is sad for those of us who really appreciate balance, drinkability, full flavor and relatively low alcohol in a beer. In the end then, we are left to make it ourselves.

Given this, let's explore the Association of Brewers Style Guidelines for the German-style black lager, schwarzbier, and see what we can make at home.



German-Style Schwarzbier

These very dark brown to almost black beers have a roasted malt character without the associated bitterness. Malt flavor and aroma are low in sweetness. Hop bitterness is low to medium in character. Noble type hop flavor and aroma should be low but perceptible. There should be no fruity esters. Diacetyl should not be perceived.

- **Original Gravity (° Plato): 1.044-1.052 (11-13° Plato)**
- **Apparent Extract/Final Gravity (° Plato): 1.012-1.016 (3-4° Plato)**
- **Alcohol by Weight (Volume): 3-3.9% (3.8-5%)**
- **Bitterness (IBU): 22-30**
- **Color SRM (EBC): 25-30 (50-60 EBC)**

I've had the pleasure recently to enjoy both an American-made and German-made schwarzbier lager. Both were excellent. They integrated a perfect balance of hop flavor, low bitterness, mild malt sweetness, subtle

roast malt character, medium body and a clean refreshing finish. How can this be achieved? Here are my suggestions:

1. Use the lowest alpha, flavor-aroma type hops throughout the process. Avoid any hop that is rated over six percent alpha acid content and covet any varieties of low alpha hop you might find such as Hallertauer, Crystal, Santiam, Tettnanger, Saaz and Mt. Hood.
2. Use debittered black malt. Belgian and German "debittered" black malts are available to homebrewers. Avoid roast barley, black patent and chocolate malts. You do not want a chocolate-cocoa or coffee character to come through in this type of beer. (Alternately, try the cold water extraction of regular dark malts described in this issue's "For Geeks Only" section.)
3. Use a quality liquid or dry lager yeast. Primary fermentation should ideally be conducted at about 55° F (12.5° C). Lager in your secondary at or below 40° F (4.5° C).
4. Be careful. Believe the numbers and calculations. Do not over-hop.

Here's a recipe for a beer I name after the black coast of the island of Hawaii. So let's cut the shuck and jive and get on with the recipe.

Puna Coast Black Lager Extract Recipe

Ingredients and recipe for 5 U.S. gallons (19 L)

- 2 3.3 lb cans (3 kg) pale/light malt extract syrup
- 6 oz (170 gm) German Caraffe or Belgian debittered black malt
- 1.3 oz (37 g) German Hallertauer (or formulate equivalent of Crystal, Mt. Hood, Santiam, Tettnanger or Saaz) (6 HBU/172 MBU) whole hops (60 minutes)

- 1 oz (28 g) hops (same as above)
 (4 HBU/112 MBU) whole hops or
 pellets (10 minutes)
 0.25 tsp powdered Irish moss
 0.75 cup (180 mL measure) corn sugar
 (priming bottles) or 0.33 cups (80
 mL) corn sugar for kegging
 Quality lager yeast for German style
 lagers
- Target original gravity: 1.048 (12° P)
 - Approximate final gravity: 1.012 (3° P)
 - IBUs: about 22
 - Approximate color: 28 SRM (56 EBC)
 - Alcohol: 4.8 % by volume
 - Apparent Yeast Attenuation: about 75%

Add the crushed black malt to one and a half gallons (5.4 L) of 160° F (71° C) water. Let steep for 30 minutes. Afterward strain out the spent grains, sparge with hot water and collect the liquid extract. Add 1 gallon (4 L) additional water, the malt extract syrup and 60 minute hops. Bring to a boil and continue to boil for 50 minutes. Then add the remaining one ounce of hops and Irish moss. After a total wort boil of 60 minutes, turn off the heat. Strain out, sparge hops and direct the hot wort into a sanitized fermenter to which 1.5 gallons (6 L) of cold

water have been added. If necessary, add additional cold water to achieve a five gallon (19 L) batch size. Add a starter culture of yeast when temperature of wort is about 70° F (21° C). When evidence of fermentation is seen, ferment at about the 55° F (12.5° C) range for about seven days or until fermentation is complete and appears to clear and darken. At this point rack (transfer) the beer into a secondary fermenter and lager between 35 and 40° F (2 to 4.5° C) for four to six weeks. Bottle or keg with corn sugar. Age and carbonate/condition at temperatures around 70° F (21° C).

Puna Coast Black Lager All-Grain Recipe

For a 5.5 gallon (21 L)—All Grain Recipe

- 8.5 lb (3.6 kg) Pilsener pale malt
- 4 oz (112 gm) Belgian aromatic malt
- 6 oz (170 gm) German Carafe or Belgian debittered black malt
- 1.3 oz (37 g) German Hallertauer (or formulate equivalent of Crystal, Mt. Hood, Santiam, Tettnanger or Saaz) (6 HBU/172 MBU) whole hops (60 minutes)
- 1 oz (28 g) hops (same as above) (4 HBU/112 MBU) whole hops or pellets (10 minutes)

HOMEBREW BITTERING UNITS (HBUs)

are a measure of the total amount of bitterness in a given volume of beer. Homebrew Bittering Units can easily be calculated by multiplying the percent of alpha acid in the hops by the number of ounces. For example, if 2 ounces of Northern Brewer hops (9 percent alpha acid) and 3 ounces of Cascade hops (5 percent alpha acid) were used in a 10-gallon batch, the total amount of bittering units would be 33: $(2 \times 9) + (3 \times 5) = 18 + 15$. Bittering units per gallon would be 3.3 in a 10-gallon batch or 6.6 in a five-gallon batch, so it is important to note volumes whenever expressing bitterness units.

INTERNATIONAL BITTERNESS UNITS (IBUs)

are a measure of the bitterness of a beer in parts per million (ppm), or milligrams per liter (mg/L) of alpha acids. You can estimate the IBUs in your beer by using the following formula:

$$IBU = \frac{\text{ounces of hops} \times \text{alpha acid of hop} \times \% \text{ utilization}}{\text{gallons of wort} \times 1.34}$$

Percent utilization varies because of wort gravity, boiling time, wort volume and other factors. Homebrewers get about 25 percent utilization for a full one-hour boil, about 15 percent for a 30-minute boil and about 5 percent for a 15-minute boil. As an example, 1 ounce of 6 percent alpha acid hops in five gallons of wort boiled for one hour would produce a beer with 22 IBUs:

$$IBU = \frac{1 \times 6 \times 25}{5 \times 1.34} = 22 \text{ IBUs.}$$

METRIC BITTERNESS UNITS (MBUs) are equal to the number of grams of hops multiplied by the percent alpha acid.

- 0.25 tsp powdered Irish moss
 0.75 cup (180 mL measure) corn sugar
 (priming bottles) or 0.33 cups (80 mL) corn sugar for kegging
 Quality lager yeast for German style lagers.

- Target original gravity 1.048 (12° P)
- Approximate final gravity 1.012 (3° P)
- IBUs: about 22
- Approximate color: 24 SRM (48 EBC)
- Alcohol: 4.8% by volume
- Apparent yeast attenuation: about 75%

A step infusion mash is employed to mash the grains. Add 9 quarts (8.5 L) of 143° F (61.5° C) water to the crushed grain, stir, stabilize (continued on page 62)



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BY AMAHL TURCZYN

The question of when to drink beer and when to eat a meal is vital to the enjoyment of both experiences. Timing is everything, and there are styles that work best before, during and after a meal. In this edition of *Winners Circle*, there are examples of each of these.

Joe Buchan's Ordinary Bitter weighs in at a modest 1.050 original gravity, which would make it a great session beer. Made with lots of British hops, one could easily contemplate having a crisp, cool pint of this brew (or two, or three) before a meal. The hop bitterness would certainly stimulate the appetite, making it a great aperitif, and since it wouldn't be as filling as some of the other styles, you could probably just go on drinking it during the meal as well.

Both Steve Olson's "I'll Shovelator Doppelbock" and Marc Densel's colossal "Olde 14" Old Ale are rich, malty, powerfully alcoholic beers. Not the sort of thing one would want during a meal! In fact, one could easily skip the meal altogether when drinking these liquid feasts. How soon 'til Lent?

Tony Kuligowski, on the other hand, seems to have brewed a perfect digestif with his "Master-Hunter," a historically-inspired Biere de Mersebourg. What? Never heard of the style? Well, if you'll remember, it was discussed in Randy Mosher's article "The Outlaw Brews of Germany" in the September/October 2000 issue of *Zymurgy*, and that in turn inspired Kuligowski to brew an award-winning version of his own. It calls for the clean bitterness of gentian root, an old bittering hop substitute, as well as an addition of birch oil. It's also a big beer—a French brewing text, *Fabrication de la Biere*, by P. Boulin, describes the style this way: "The beer of Mersebourg is very brown, very alcoholic, with a bitterness due to Gentian being used in addition to the hops." Gentian is, according to Mosher, used in bit-

ters like Jagermeister and Unterburg, and not only possesses a "very clean, pure bitterness," but is also soothing to the stomach. And for many Germans, a shot of bitters after a meal helps settle the stomach and aid digestion. So this beer should be just the thing to follow a meal.

Finally, S. Zemo Holat brings us a deliciously floral metheglin mead, with a pastoral bouquet of lavender, heather and honey. You wouldn't want to have this one with or after any strong-flavored food that might interfere with the delicate balance—I'd say this one would be best for dessert, or perhaps as a nightcap.

So let me see, a beer before dinner, two beers for dinner, a beer to finish off dinner, and then a mead for dessert. Whew. I'm going to bed.

Bock



AHA 2001 NATIONAL HOMEBREW COMPETITION

BRONZE MEDAL

Steven Olson, Menasha, WI

"I'll Shovelator Doppelbock"

Doppelbock

Ingredients for 7 US. gal (26.5 L)

15.6	Ib Weyermann Munich (7.08 kg)
1.95	Ib Weyermann 75° L caramel (0.88 kg)
1.37	Ib Weyermann Vienna (0.62 kg)
0.6	Ib Weyermann Carafla (0.27 kg)
1.5	oz Northern Brewer whole hops, 7.5% alpha acid (43 g) (80 min.)
1	oz Tettnanger whole hops, 4.7% alpha acid (28 g) (60 min.)
1	oz Saaz whole hops, 3.5% alpha acid (28 g) (15 min.)
	Wyeast No. 2206 Bavarian lager yeast
	Forced CO2 to carbonate

- Original specific gravity: 1.075
- Final specific gravity: 1.018
- Boiling time: 90 min.
- Primary fermentation: 10 days at 50° F (10° C) in steel
- Secondary fermentation: 14 days at 40° F (4° C) in glass
- Tertiary fermentation: 42 days at 34° F (1° C) in glass

Brewer's Specifics

Mash grains using a standard decoction mash schedule with main saccharification rest at 152° F (67° C).

Judge's Comment

"Maltiness of a well aged beer. Alcohol very apparent. Full bodied. I really like this beer."

English & Scottish Strong Ale



AHA 2001 NATIONAL HOMEBREW COMPETITION

SILVER MEDAL

Mark B. Densel, Oceanside, CA

"Olde 14"

Old Ale

Ingredients for 5 U.S. gal (19 L)

8 lb John Bull pale malt extract (3.63 kg)
0.5 lb 40° L crystal malt (0.23 kg)
0.5 lb dextrin malt (0.23 kg)
4 oz chocolate malt (113 g)
1 lb amber candi sugar (0.45 kg)
1 oz Fuggle pellet hops (28 g) (60 min.)
0.5 oz Kent Golding pellet hops (14 g) (10 min.)
0.5 oz Kent Golding pellet hops (14 g) (5 min.)
White Labs English ale yeast
0.5 cup corn sugar (118 mL) to prime

- Original specific gravity: 1.164
- Final specific gravity: 1.014
- Boiling time: 60 min.
- Primary fermentation: 14 days at 68° F (20° C) in glass
- Secondary fermentation: 20 days at 68° F (20° C) in glass

Brewer's Specifics

Steep crushed grains in 150° F water (65.5° C) for 30 minutes. Remove grains, dissolve candi sugar and extract and boil 60 minutes.

Judges' Comments

"Very sweet malty flavor, fruity, sherry character. The alcohol character is too strong for the other elements. Perhaps age will mellow this more."

"Treacle flavor or licorice. Very good effort."

Bitter and English Pale Ale



AHA 2001 NATIONAL HOMEBREW COMPETITION

BRONZE MEDAL

Joe Buchan, San Diego, CA

"Ordinary Bitter"

Ordinary Bitter

Ingredients for 6.5 U.S. gal (25 L)

8.5 lb English pale malt (3.9 kg)
1.25 lb 60° L crystal malt (0.57 kg)
0.25 lb dark carastan malt (0.11 kg)
1.5 oz UK Progress pellet hops, 6.3% alpha acid (42.5 g) (90 min.)
0.5 oz UK Bramling Cross pellet hops, 5.9% alpha acid (14 g) (90 min.)
1 oz Fuggle whole hops, 5.2% alpha acid (28 g) (15 min.)
1 oz Fuggle whole hops, 5.2% alpha acid (28 g) (3 min.)
2 oz Kent Golding whole hops, 5.9% alpha acid (57 g) (3 min.)
White Labs English ale yeast
Forced CO₂ to carbonate

- Original specific gravity: 1.050
- Final specific gravity: 1.013
- Boiling time: 90 min.
- Primary fermentation: 13 days at 68-70° F (20-21° C) in glass

Brewer's Specifics

Mash grains at 153° F (67° C) for 90 minutes.

Judges' Comments

"Up front bitterness. Good example of style. Would like more malt flavor."

"A nice beer. Hop bitterness is a touch too high for balance with malt level present. This is a very clean beer. I'd also suggest using a somewhat more 'interesting' yeast to [increase] esters and other fermentation components."

Specialty/Experimental/Historical Beer



AHA 2001 NATIONAL HOMEBREW COMPETITION

BRONZE MEDAL

Tony Kuligowski, Evergreen Park, IL

"Master Hunter' Biere de Mersebourg"

Historical Beer

Ingredients for 5 U.S. gal (19 L)

6 lb Muntons amber dry malt extract (2.7 kg)
3 lb Muntons pale dry malt extract (1.36 kg)
1 lb 90° L crystal malt (0.45 kg)
0.25 oz chocolate malt (7 g)
0.75 oz Spalt pellet hops, 3.7% alpha acid (21 g) (60 min.)
0.25 oz gentian root (60 min.)
12 drops birch oil (secondary)
Wyeast No. 1007 German Alt yeast
0.75 cup corn sugar (177 mL) to prime

- Original specific gravity: 1.080
- Final specific gravity: 1.025
- Boiling time: 70 min.
- Primary fermentation: 7 days at 64° F (18° C) in glass
- Secondary fermentation: 21 days at 60° F (15° C) in glass

Brewer's Specifics

Steep crushed grains at 150° F (65° C) for 30 minutes. Add extract and boil.

Judges' Comments

"Malty caramel sweetness is bolstered by birch flavor. Clean, balanced bitterness. A neat beer! Soda-pop for grownups!"

"A nice beer. Medicinal quality detracts a bit."

BY AMAHL TURCZYN

UNC chemists figure out details of 'skunky beer' reaction

Many people think beer is supposed to taste "skunked," while others believe it gets that flavor and aroma only when it isn't handled properly. Now chemists at the University of North Carolina at Chapel Hill say they have figured out precisely what goes wrong with beer to give it that offensive "light-struck" flavor.

"Historically, beer has been stored in brown or green bottles to protect hop-derived compounds from light in a process we call photodegradation," said Dr. Malcolm D. Forbes, professor of chemistry. "Hops help flavor beer, inhibit bacterial growth and are largely responsible for the stability of the foam in the head," Forbes said.



"Hops, however, are light-sensitive, and the three main compounds in them identified as being light-sensitive are called isohumulones. When attacked by either visible or ultraviolet light, these break down to make reactive intermediates known as free radicals that lead to the offensive taste and skunked odor."

Using isohumulones supplied by brewing companies and a sophisticated technique called time-resolved electron paramagnetic resonance spectroscopy, the UNC scientists and colleagues determined what happens chemically during photo degradation. Lasers served as the light source for producing the chemical reactions they studied.

"This light problem is a phenomenon that was reported in the literature as early as 1875, but until now the detailed mechanism had not been unraveled," Forbes

said. The final product of the reaction is a "skunk thiol," an analog of a compound found in skunk glands that produces a very bad taste and smell. This molecule has an extremely low taste and smell threshold in humans, just a few parts per trillion. A report on the findings will appear in the Nov. 5 issue of a publication called *Chemistry — A European Journal* and appeared online this week.

The new paper describes the free radicals, working out their structure, explaining reactions that made them and learning precisely where the isohumulone breakdown takes place.

Coopers Brewery Introduces Home Winemaking Kits in Canada

Coopers Brewery, of Adelaide, Australia, has recently released a line of home winemaking kits. The brewery is already famous for its homebrew kits and malt extract production, as well as for one of

the most famous examples of Australia's indigenous Sparkling Ale, Cooper's Sparkling Ale. The company expects to have sales in the wine kit market of at least ten million Australian



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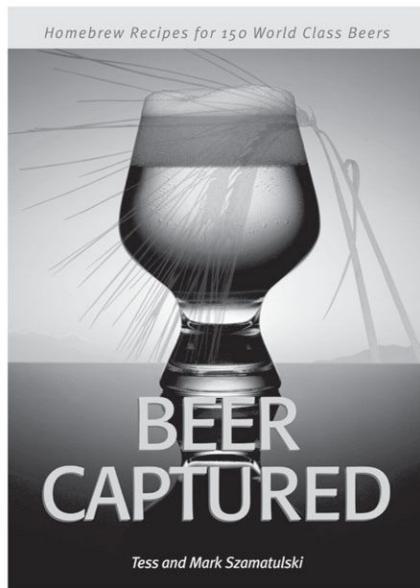
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dollars by 2006. Canada is the world's largest home winemaking market. The wine kits are made from 100 percent pure Australian grape juice concentrate sourced entirely from the famous South Australian wine regions, renowned for producing many of Australia's greatest wines. The kits contain 100 percent Australian concentrate and do not contain any added sugar or juices that are commonly found in other kits. This purity enables the home vintner to produce wines true to their variety. The company plans to release their two premium wine kits, Chardonnay and Shiraz, into the Australian market later this year.

FlavorActiV Releases 'Magnificent Seven'

FlavorActiV Ltd. has extended its range of beer flavor standards with the launch of seven new reference materials. The new standards are Alkaline, Grainy, Vanilla, Spicy, Sulphitic, Salty and Smoky. Their addition to the company's product range brings the total number of beer flavors

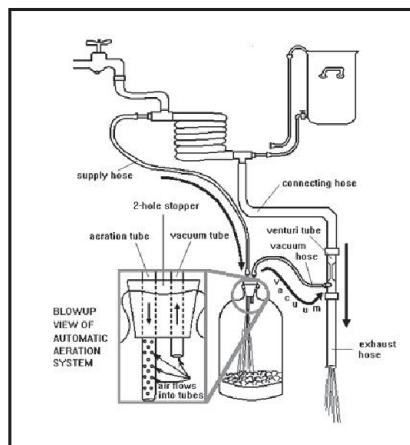
available to 33. Six of the seven standards comply with the Recommended Methods of the European Brewery Convention and American Society of Brewing Chemists, while the grainy standard has been developed by FlavorActiV in collaboration with several brewing companies. One of the standards, alkaline, has already been used frequently over the last year by one of FlavorActiV's brewery customers to help address an ongoing problem related to intermittent caustic contamination of beer. The grainy standard has already been selected by another brewery customer as a key flavor attribute in two of their most successful brands.

Training in the recognition and scaling of the character, together with several other key flavor attributes is currently taking place within the company using the new flavor standard. FlavorActiV beer flavor standards have been widely adopted by both brewing hobbyists and professionals. Brewers in almost 100 countries now use them to train technical beer tasters and judges, validate their perfor-

mance, and to improve their awareness of beer flavor. The flavors are provided in pre-weighed capsules, in package sizes of 5 or 20 capsules, and are produced to pharmaceutical-grade standards to assure quality and safety. A comprehensive set of notes describing the importance, origins and methods of analysis for each flavor is also provided. www.flavoractiv.com

Wort Wizard Chilling and Wort Transfer System

The Wort Wizard chilling system acts like a pump to transfer hot wort from a brewpot to a fermenter, aerates and chills the wort, and removes the headspace of foam automatically as the fermenter fills. The unique venturi design generates a pow-



erful vacuum from the energy of running water to power-vac wort into the carboy, replacing the need to siphon. The Wort Wizard creates the vacuum using the warm water runoff from your chiller before it goes down the drain. Even if you do not use a wort chiller in your brewing system, you can use the Wort Wizard kit to transfer your wort. Simply direct water from any faucet through the venturi device to draw wort into your fermenter. The Wort Wizard kit consists of a #6.5 two-hole stopper (#7 available on request), a venturi device, a thread-to-barb adapter, a 15-inch aeration tube and a three-inch vacuum tube. Two combo packages offer counterflow cooling and pumping power for under \$70 (Fearless) and \$115 (Chillzilla). For more information, go to www.wortwizard.com.

Amahl Turczyn is the associate editor of Zymurgy magazine.

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Extract Experiments (from page 19)

Brewers Specifics: Heat 4 quarts water to 178° F (81° C). Gypsum added when heating water for mash. Add grain. Mash at 168° F (76° C) for 45 minutes. Sparge with 1.5 gallons, 170°F (77° C) water. Bring wort to a boil adding water to make five gallon batch. Turn wort off before adding extract. Bring extract/wort back to boil and add hops. Fermentation at 63°-59° F (15-17° C) room temp for eight weeks.

Comments: Golden color and flavor. You could definitely taste the wheat in this beer.

Randy Oskey & Kerry Wyckoff's Backyard Wheat

6.6 lb of Munton's wheat extract (3.0 kg)
1 lb crystal malt 20° L (0.45 kg)
1 lb wheat malt (0.45 kg)
1 oz Hallertauer hops (28 gm) 60 minutes

1 oz Hallertauer hops (28 gm) 10 minutes

Wyeast No. 3638 Bavarian wheat

Brewers Specifics: Steep the grains in a couple of gallons of water. Add to boiling kettle to make about seven gallons. Bring to boil and add extract and 1 ounce of hops. This is a 60-minute boil. Add finishing hops 10 minutes prior to end of boil.

Comments: Again, great color. This wheat had that great cloudy wheat look that we all love so well. The flavor was full and satisfying.

Cheryl Fuentes de Rehm & Bill Rehm's Wicked Wicket Wit

3.3 lb Munton's wheat extract (1.5 kg)
2 lb wheat malt (0.9 kg)
4 lb pale malt 2-row (1.8 kg)
1.5 oz Hallertauer Mittelfruh (42 gm) 45 minutes
0.5 oz Saaz (14 gm) 2 minutes

1 oz bitter orange peel (28 gm) 15 minutes

1 oz coriander seed (28 gm) 5 minutes

0.2 oz ginger (5.6 gm) 5 minutes

Brewers Specifics: Mash grains with 6 quarts (5.7 L) water at 150° F (66° C) for 60 minutes, sparge. Add extract, bring to boil. Add remaining ingredients so that they are boiled for the times indicated.

Comments: Nice gold/amber color. Head retention is great. The orange peel and coriander are evident but not overwhelming. A good example of a Wit.

Thankfully we did not have one bad batch. We hope you enjoyed our little experiment. I am off to have a homebrew, or two!

Cheryl Fuentes de Rehm began brewing extract beers in 1996 with her then boyfriend Bill Rehm and got hooked on homebrew when they made a framboise. They have since married and started a family and construction of a HERMS all-grain system. 

Oatmeal Stout (from page 39)

Nevertheless, American craft brewers have embraced the style. Forty brewers entered beers in the oatmeal stout category at the 2001 Great American Beer Festival. Among the best-known American examples is Barney Flats Oatmeal Stout from the Anderson Valley Brewing Co. in Boonville, CA. With an original gravity of 1065 and an alcohol content of 5.9 percent by volume, this is a bigger beer than the Samuel Smith stout. According to general manager Fal Allen, the recipe calls for just over six percent rolled oats. Head brewer Brit Antrim has had remarkably few problems with the run-off, says Allen. He attributes this to Anderson Valley's 100-barrel German-manufactured brewhouse. "A lot of microbrewers have undersized mash tuns, so their mash bed is very deep," Allen explains. "Having a larger surface area facilitates an easy run-off."

Kelly Taylor, head brewer for Heartland Brewing Co. in New York City, has also mastered the art of brewing with oats. "We've never had a stuck run-off," he boasts, even though his Farmer Jon's Oat-

meal Stout contains 10 percent flaked oats. The secret, he confides, is to add the oats halfway through the mash-in so they mix thoroughly with the other grains. Farmer Jon's (a three-time GABF medalist) is another hefty example of the style, at 1060 OG and six percent alcohol. It is brewed with six grains, including flaked barley and wheat.

Oatmeal stout is often listed as a subcategory of sweet stout, but some examples are really quite dry. Shakespeare Stout, from Rogue Ales in Newport, OR, contains nine percent rolled oats, states head brewer John Maier. Hopped with a generous portion of Sterling and Cascades, the stout measures 69 IBUs. It finished as runner-up in the 2001 Alpha King Challenge, an annual freestyle competition for America's hoppiest beers. For a stout to compete successfully in a field of imperial IPAs is really extraordinary.

Asked what the oats contribute to the beer, Maier answers, "Earthiness and viscosity." He doesn't believe they add any specific flavor, however.

When it comes to pairing beer with foods, oatmeal stout excels. Graham Auton, mar-

keting manager for Samuel Smith, recommends serving it alongside pizza and salad; pasta and other Italian foods; lobster with drawn butter; steak and kidney pie; ploughman's lunch; dark breads; and British and French cheeses. Perhaps he should have listed what Samuel Smith Oatmeal Stout doesn't go well with; it might have been a shorter list.

Oatmeal stout also makes an excellent accompaniment to many desserts. Michael Jackson advises serving it with *atholl brose*, a blend of oatmeal, honey and whisky. Merchant du Vin's Alan Shapiro was kind enough to contribute a chocolate cake recipe, in which the stout is an ingredient in both the cake and frosting.

Kelly Taylor notes that at Heartland's three branches in Manhattan, Farmer Jon's Oatmeal Stout goes into the barbecue sauce that coats the ribs. But Taylor's favorite combination is a scoop of Ben and Jerry's vanilla ice cream in a mug of his stout.

You won't find a beer float on the menu, however. "Every time I mention it to the bartenders, they kind of scowl at me."

Greg Kitsock is the editor of *American Brew-er* and a regular contributor to *Zymurgy*. 

Mild Ale (from page 47)

A more radical change, popular these days in Major League Baseball, involves contraction—the reduction in the number of styles via consolidation. Combining mild with southern brown ale is a logical step. In Michael Jackson's book *Ultimate Beer*, Manns Original Brown Ale is one of five featured mild ale examples, yet it is also considered a classic commercial southern brown example in the BJCP guidelines. And there's also the fact that many British beer experts simply consider brown ales to be slightly stronger bottled versions of draft milds.

The profusion of beer styles may be a boon for home and commercial brewers interested in competitions, but they can be pretty baffling to the uninitiated. Perhaps it's time our community began focusing more on commonalities between styles. It's much easier to understand that there is a broad family of dark ales, all emphasizing the flavor and aroma of roasted malts, but varying in their alcoholic strength and hop expression. Think of mild as the foundation stone of this class of beers, once bigger and stronger, but growing once again, still surviving and evolving.

Steve Hamburg is a freelance writer and speaker on many beer subjects. He is the co-founder and cellar master for the annual Chicago Real Ale Festival and has judged at the Great British Beer Festival. Hamburg began homebrewing in 1984, has been a BJCP judge since 1990, and is an Honorary Master Judge in Japan.

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Where to find Mild Ale

In the UK, the Midlands (area around Birmingham, extending to the Northwest and centering on the cities of Wolverhampton and Dudley) is still the prime area.

London and the Southeast have long been considered a mild wasteland, but there still are a few dedicated publicans who insist on having at least one on offer. The Wenlock Arms, near the Regents Canal, between the Old Street and Angel (Islington) tube stations, routinely has the best variety of milds, mostly from newer micros, but often from a well-known regional (like Brakspears or Batemans). Of course, the highly regarded White Horse at Parsons Green always features Highgate Mild, and offers others at its many beer festivals throughout the year.



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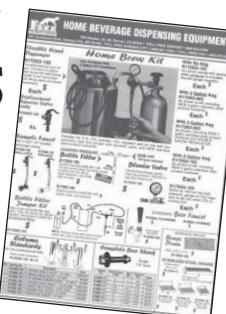
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Winners Circle (from page 54)

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"Laventhal"

Metheglin with Lavender Flowers

- Original specific gravity: 1.100
- Final specific gravity: 1.010
- Boiling time: n/a
- Primary fermentation: Unknown
- Secondary fermentation: Unknown

Brewers' Specifics

Cold extract lavender flowers in distilled water.

Judges' Comments

"Very good effort—well balanced. Heather and lavender together create a floral tour-de-force."

"This is a delicious metheglin, fairly well balanced and clean. Nice job."

Amahl Turczyn is the associate editor of *Zymurgy* magazine.

Ingredients for 1 U.S. gal (3.8 L)

3 lb heather honey (1.36 kg)
2 cup lavender flowers (0.47 L)
0.5 tsp yeast nutrient (2.46 mL)
0.5 tsp citric acid (2.46 mL)
Red Star Premier Cuvee wine yeast



World of Worts (from page 52)

and hold the temperature at 132° F (53° C) for 30 minutes. Add 4.5 quarts (4.5 L) of boiling water and add heat to bring temperature up to 157° F (69.5° C) and hold for about 30 minutes. Then raise temperature to 167° F (75° C), lauter and sparge with 4 gallons (15 L) of 170° F (77° C) water. Collect about 6 gallons (23 L) of runoff and add "60 minute" hops and bring to a full and vigorous boil.

The total boil time will be 60 minutes or long enough to end up with 5.5 gallons (21 L) of wort. When 10 minutes remain add remaining one ounce hops and Irish moss. After a total wort boil of at least 60 minutes (5.5 gallons should remain) turn off the heat and cool all of the wort. Use an immersion cold-water bath or heat exchanging coils. Then strain and sparge into a sanitized fermenter.

Pitch a good dose of healthy active lager yeast and primary ferment at temperatures at about 55° F (12.5° C); make sure that nearly all of the fermentation is complete before lagering. Rack from the primary to the secondary. Your net yield will be 5 gallons (19 L) to the secondary. Lager between 35 and 40° F (2 - 4.5° C) for 4 to 6 weeks.

Prime with sugar and bottle or keg when lagering is complete.

World traveler Charlie Papazian is the founding president of the Association of Brewers and the author of numerous best-selling books on homebrewing. His most recent books are *Homebrewers Gold* (Avon, 1997), a collection of prize-winning recipes from the 1966 World Beer Cup Competition, and *The Best of Zymurgy* (Avon, 1998) a collection of the best articles and advice from 20 years of *Zymurgy*.

Last Drop (from page 64)

I use this along with Orange Mango and Emperor's Choice for my Christmas beer called, "Blit-Zen". My raspberry stout that uses 12 bags of Wild Berry Zinger is called, "Very Berry Stout". I call my honey and Lemon Zinger beer, "Papa Beer". In addition to being an easy way to flavor beer, it is very economical, too. You have to try this!

These are the highlights of things I've tried over the years. Some ideas didn't pan out so well, (like Peppermint Porter, for example) and I've left them out. I'm always on the lookout for fermentables or flavorings that people don't usually put in beer. If you have other ideas, let me know!

Dana Johnson has been making strange brews since 1989. He is a member of the Keg Ran Out Club (KROC) in Broomfield, CO. Dana can be reached at: thecruizer@hotmail.com.

Clone Brews (from page 15)

Hops too can be domestic; Willamette would make a suitable substitute for the Fuggles, while Yakima Goldings could take the place of the East Kent. Just watch your alpha levels please; with a beer this delicate, you can easily over- or under-bitter it.

Both yeast strains recommended here are good, clean English strains with impressive flocculation characteristics—you won't be waiting around too long for them to clear out. Fermentation at around 65° F (18° C) is my preference, though these strains can certainly tolerate temperatures a bit higher. Because of the relatively low gravity involved, this beer usually has a really fast turnaround. For further clarification, gelatin finings and a week or two of cold conditioning (50° F or 10° C) work well to get a bright, clear beer.

For packaging options, forced carbonation is certainly an option—I've given this beer about half the carbonation I normally use for English ales, then serve at high pressure to mimic the creamy, fine bead of the nitro Boddingtons. However, to really get the most out of this beer, try the real ale method of either bottle or keg conditioning.

Amahl Turczyn is the associate editor or Zymurgy magazine.

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Zymurgy (ISSN 0196-5921, USPS 018-212) is published bi-monthly by The American Homebrewers Association, a division of The Association of Brewers, with headquarters at 736 Pearl Street, Boulder, Colorado 80302. The Managing Editor is Ray Daniels with address same as above. The annual subscription price is \$24.00 and \$33.00 with a membership to The American Homebrewers Association. The publication is wholly owned by The Association of Brewers, a not-for-profit corporation. The purpose, function and not-for-profit status has not changed during the preceding twelve months, and the average number of copies of each issue during the preceding twelve and the actual number of copies published nearest to the filing date (September/October 2001 issue) are noted below. This information taken from PS Form 3526, signed by Robert Pease, the Vice President, and filed with the United States Postal Service in Boulder, Colorado.

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Strange Brew...It Just Might Work For You, Too!

Germany came up with a purity law for beer in the 1500s called Reinheitsgebot, which states that only water, malted barley, hops and yeast can be used to produce commercially made beer. But I've always found these four ingredients are far too limiting when it comes to producing my own brew at home. After all, just imagine how creative you can be considering the myriad flavorings, adjuncts, herbs and spices out there to explore.

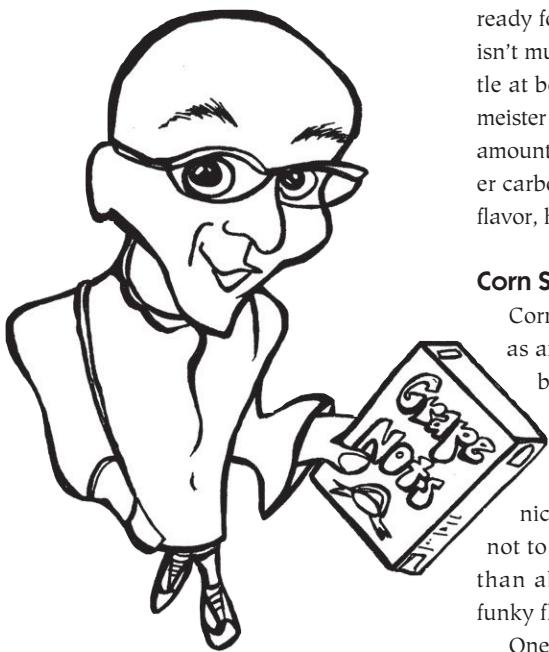
In order to create new and distinctive beer flavors, I enjoy trying out different things to flavor my homebrew. From spiced teas to fruit to liqueurs, I've tried just about everything. Heck, I've even been known to throw a little breakfast cereal in the batch, just for fun! What follows are some of the more successful and repeatable things I've used over the years. The beers have one thing in common, they are all made with ingredients that aren't normally associated with making beer. These are what I call "Strange Brew" recipes.

Post Grape Nuts Cereal

One day while brewing about ten years ago, I happened to be looking at a box of Post Grape Nuts and noticed the ingredients on the side of the box: wheat, malted barley, salt, and yeast.

"Hmm," I wondered, "What would happen if I added this stuff to a batch of beer?"

So, I tried it. Rather than put the cereal in the kettle, I steeped about a cup in a pint or so of water over low heat until the cereal was extremely mushy. Then, I strained the liquid portion into the kettle. It worked! The beer (a Kolsch) had a nice flavor and attenuated nicely. I later came to realize why this is such a good thing to do: the vitamins and minerals added to the cereal act as a yeast nutrient, especially the zinc oxide. I regularly use Grape Nuts for this purpose now,



and I save the spent cereal for pancakes the following day. They are very tasty indeed!

If you boil the cereal, you get a nice banana/clove flavor, by the way, so be careful. One time, I accidentally steeped too much Grape Nuts, probably almost a pound. I pitched the yeast on a summer Friday night, went to check on it Sunday evening and it was done! I couldn't believe my eyes, the yeast had flocculated out and it was definitely finished. I bottled it and was drinking the beer by the following weekend! Talk about a quick batch.

Jagermeisterbrau

I really don't remember how I came up with this one. But I decided to add some Jagermeister Liqueur at bottling time to a batch of Oktoberfest (aka Märzen). The black cherry and licorice flavor imparted by the Jagermeister seemed to compliment the German-style beer quite nicely. I make this

one after a long, hot summer so it will be ready for fall. The amount of Jagermeister isn't much, only one "airline" (50 ml.) bottle at bottling time. The amount of Jagermeister is so small that it doesn't change the amount of priming sugar required for proper carbonation. It definitely adds a subtle flavor, however, that I like.

Corn Syrup

Corn sugar is pretty well known for use as an adjunct and for priming finished beer at bottling. I've found that Karo corn syrup adds something else, however. There is also vanilla and a little salt, which makes for a nice flavor, but you have to be careful not to add too much to the kettle. More than about a cup full gives the beer a funky flavor.

One time, a friend of mine at work was trying to duplicate Miller MGD Light. He used a whole quart bottle of corn syrup in a five-gallon batch of light beer. It was amazing how close he came to what he was shooting for!

Celestial Seasoning Teas

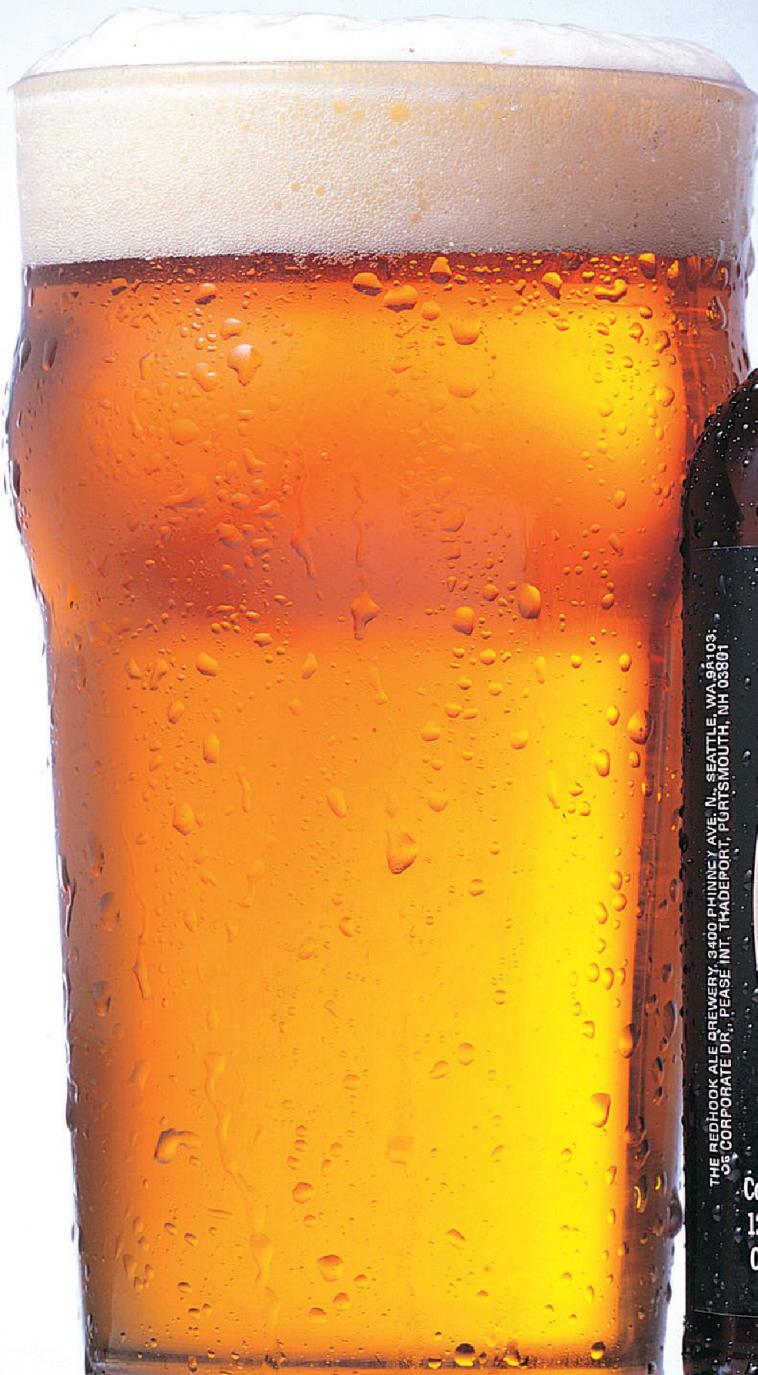
A quick and easy way to flavor beer that I've used for years is to add Celestial Seasoning Tea after shutting off the boil. I steep the tea for about five minutes—along with finishing hops, if the batch calls for it. About five to 10 bags of tea seem to work nicely for a five-gallon batch. I fish out the tea bags before transferring the wort into the fermenter and pitching the yeast.

My favorite teas are Lemon Zinger for wheat beer, Wild Berry Zinger for making flavored porter or stout and Harvest Spice for making Christmas beer—although this flavor has now been discontinued. As an alternative for the Christmas beer, Cinnamon Apple Spice works fine. (continued on page 63)

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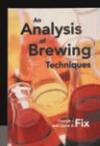
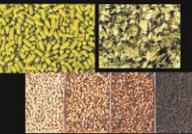
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