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ZYMURGY

FOR THE HOMEBREWER AND BEER LOVER

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Designing Old Ales

Brew Paddlewheel Pilsener

**1997 National Homebrew Competition
Rules and Regulations**

16 Homebrew Recipes Inside

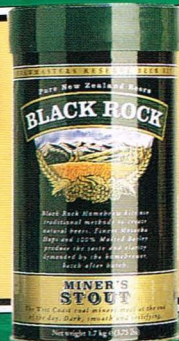
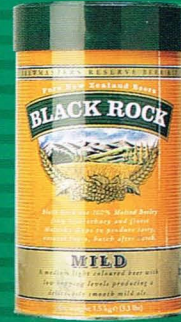
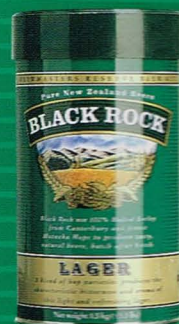
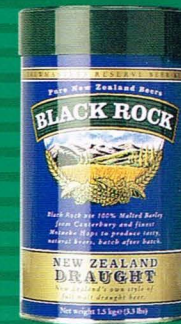
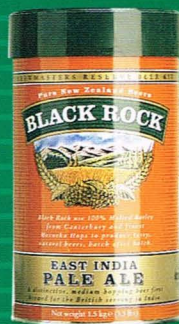


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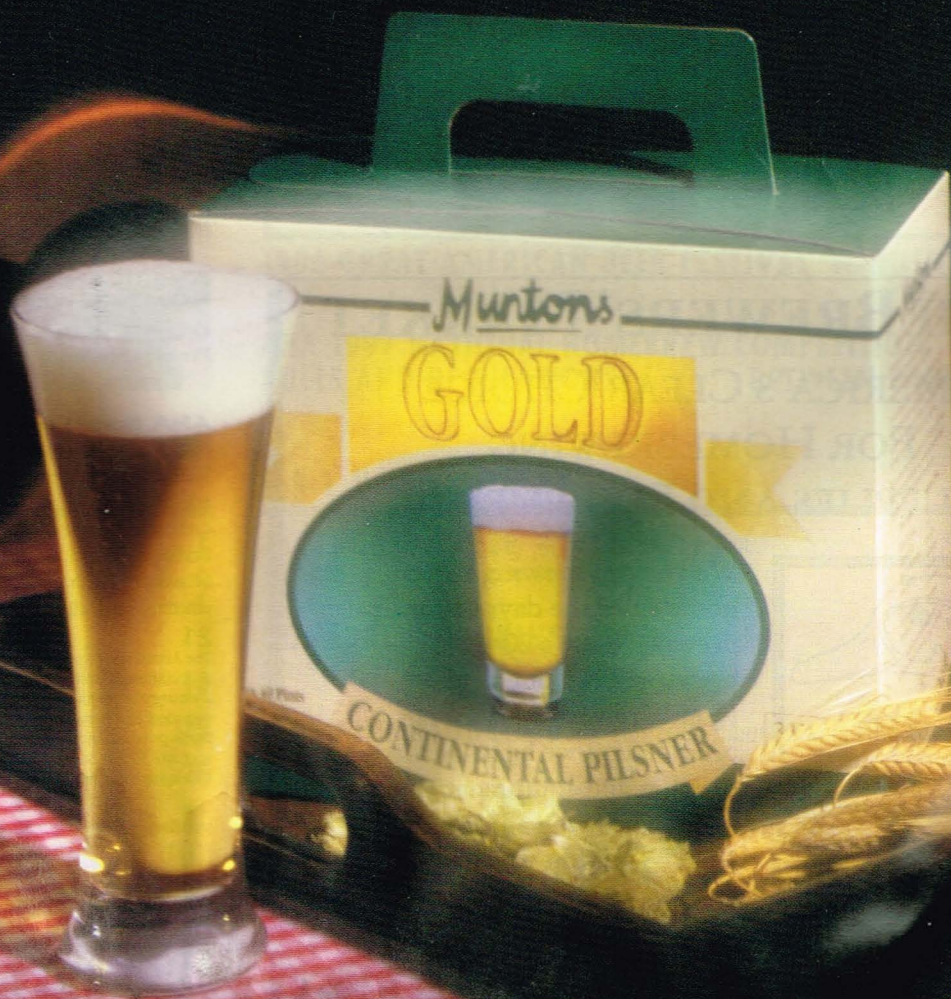
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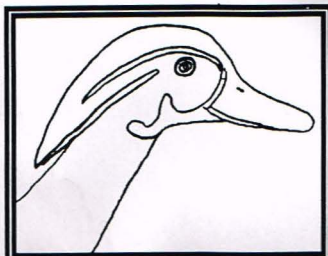
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To promote public awareness and appreciation of the quality and variety of beer through education, research and the collection and dissemination of information; to serve as a forum for the technological and cross-cultural aspects of the art of brewing;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

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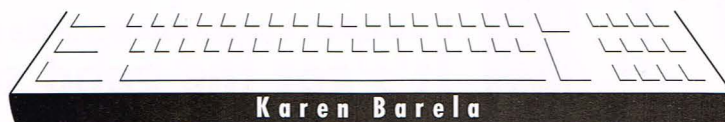


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EDITORIAL



Karen Barela

Inspiration + Innovation = Homebrew

At the Southern California Homebrewers Festival in Temecula, Calif., last May I saw one of the most amazing things. It was a beer bar designed and built exclusively for homebrewed beers and capable of cooling, storing and pouring 24 Cornelius kegs simultaneously. Built by the Society of Barley Engineers homebrew club, the bar included a wooden top that you could lean your elbows on while contemplating what you wanted from their homebrewed beer menu. The sides of the bar were beautiful, with peeled logs adding support as well as beauty. Under the hinged bar top where the 24 kegs were stored there was room for two 10-pound CO₂ cylinders; one to drive the beer, the second a spare.

The Southern California Homebrewers Festival convinced me that once again homebrewed beer is the best beer in the world. Only homebrew is available at this festival and I found several that not only rocked my taste buds but that sent a smile through my entire body. Not only did these beers exceed my expectations, they reaffirmed my faith in beer and homebrewing. More than 1,000 people attended the festival and got to choose from about 2,200 gallons of homebrew!

Sam Piper shared his Chocolate Mint Porter, based on a recipe developed by accident when he forgot he'd left some mint extract in a keg (awaiting a different batch), racked porter into it and rushed off to a club meeting. There he was surprised to find everyone raving about a mint beer. That minty beer was his. ("Mint? My beer didn't have mint.") The hot topic for the



The Society of Barley Engineers designed and built a 24-tap dispensing system for use at festivals and club events. Ray DiGangi, Andy Gamelin and Charlie Brass prepare the bar to serve their first sampler.

night has become a favorite recipe of his ever since. This beer, with the aroma of one of those little green-wrapped mints you get on your pillow in good hotel rooms, was refreshing and delightfully pleasing in my mouth with a rich, malty flavor softly surrounded by a hint of chocolate and touched with a kiss of mint.

I tasted Steve Casselman's and M.B. Raines' wedding cake imperial stout, 'Til Death Do Us Part. They added the leftovers of their wedding cake to the mash for a batch of stout. It had a delicate sweetness, creamy body and full flavors that swam in my mouth and tickled my throat on the way down to warming my belly.

Sheldon Jackson offered me an IPA hopped to heaven with 70 IBUs that was smooth, clean and tasted fabulous. Yep, these are beers I remember. These homebrewed beers thrilled me and left me smiling. It's in homebrew where ingenuity lives and the spirits of brewing history thrive. Let's continue to create the best beers in the world.

From the Society of Barley Engineers to your next batch of homebrew, the vitality and essence of beer is surviving in the creativity of homebrewers. Let the pages of *Zymurgy* guide and inspire you to keep up the great brewing.

Karen Barela, AHA president, loves adventurously crafted homebrews.



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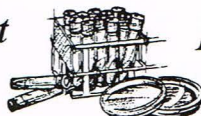
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DEAR Z Y M U R G Y

Our Readers

Corrections

In *Zymurgy* Fall 1996 (Vol. 19, No. 3), on page 58, The Beverage People's address should have been 840 Piner Rd. #14, Santa Rosa, CA 95403.

The "correction" printed in *Zymurgy* Fall Issue 1996 (Vol. 19, No. 3) on page 87 concerning the rights owned by Anchor Brewing Co. of the term "Steam Beer" as a trademark for beer and other malt beverages was inaccurate. Trademark law is exceedingly complex. Believing a discussion of trademark issues is best left to lawyers, we decline further comment and refer you to Fritz Maytag's "Dear *Zymurgy*" letter in this issue explaining that "Steam" is the exclusive trademark for beer owned by Anchor.

A Steamy Issue

Dear *Zymurgy*,

In *Zymurgy* Summer 1996 (Vol. 19, No. 2) Professor Surfeit reported "when a beer is referred to as 'Steam Beer' you would be referring specifically to a brand produced by Anchor Brewing Co., in San Francisco, Calif.," The Professor also reported that Anchor Brewing Co. "has produced this beer for several years and trademarked their name so it cannot be used by any other brewery."

The Professor was correct except Anchor Brewing Co. is the only brewer who has brewed and sold a "Steam" beer in the United States for many decades — a bit more than "several" years.

A correction was published in *Zymurgy* Fall 1996 (Vol. 19, No. 3) stating, "The Professor erroneously suggested in *Zymurgy* Summer 1996 (Vol. 19, No. 2) that Anchor's

trademark applied to the term "Steam Beer." We are happy to report that the Professor was correct in his first statement.

Trademark rights are created by use in commerce. Because Anchor Brewing Co. has been the sole user of "Steam" as applied to beer for many decades and has an incontestable U.S. Trademark Registration, no other brewer can use "Steam" in connection with the sale of beer in commerce. It was established more than 80 years ago by the famous Coca-Cola trademark cases that no other bottler could use a trade name merely by changing the typeface.

Any number of beer cases establish that old-time usage of a word does not count — it is the current use that counts. So how "Steam" might have been used for beer in the 1890s or early 1900s does not count for 1996 trademark purposes. Today, in 1996, we proudly hold "Steam" as our exclusive trademark for beer and use it on our "Anchor Steam Beer."

Your readers will want to know Anchor Brewing Co. is diligent in enforcing its trademark rights.

Keep up the good work at *Zymurgy* for brewers everywhere.

With all good wishes,
Fritz Maytag
President and Brewmaster
Anchor Brewing Co.
San Francisco, Calif.

Unexplained Hop Phenomenon

Dear *Zymurgy*,

I want to thank you for endless reading enjoyment. But in particular for "Spent



The Captain loves to wash down his doggy vitamins with fresh homebrew.

Hops Possible Dog Toxin," *Zymurgy* Summer 1996 (Vol. 19, No. 2).

I have never taken any precautions with my used hops and I wouldn't put it past my dog to eat anything. This will absolutely change however. Does this mean there is any danger for dogs to drink beer? My vet recommended brewers yeast in the dog's diet, and on a hot summer's day a cold homebrew sure makes the medicine go down in the most delightful way.

This occasional treat will have to stop if there is even the smallest risk. Unfortunately, my vet isn't a homebrewer so I'm hoping you can tell me if I'll ever be able to share another pint with my best friend.

If it weren't for *Zymurgy* I don't know where I would ever hear about stuff like this.

Thanks,
Dave Jamieson
Port Credit, Ont.

According to Lewis Brad, D.V.M., in Boulder, Colo., healthy dogs can consume small quantities of homebrew with no risk. Hops in fermented beer pose no danger. — Ed.



Dear *Zymurgy*,

With reference to "Spent Hops Possible Dog Toxin," *Zymurgy* Summer 1996 (Vol. 19, No. 2) I would like to make the following comment: The U.S. hop industry could do without such an article, as in my view this might damage the American hop industry. Your article gives us very little detail about what hop varieties were used in the particular brew. I hope the homebrewer concerned will admit to more detail.

American hops have less chemical sprays applied to them than European hops as the climatic conditions here in the Yakima Valley result in less pest and disease.

Whole hops are consumed by humans. Belgians and other Europeans serve hop shoots as a starter (salad) in the spring. Whole hops also are a delicacy to mice. However, they are quite choosy and, like many brewers, they prefer aroma hops, in particular East Kent Goldings! These little creatures and the humans do not die from eating hops, hence I wonder why a hound (greyhound) would die from eating spent hops.

Spent hops can be divided into two categories. In traditional brewing the hops are

used to add bitterness and aroma but then fulfill a third function as a natural filter bed for the wort. The wort contains mainly sugars and proteins from the malt and whatever the brewer might add, copper finings, etc. Some of those products will be found in the filter bed of spent hops. However, one cannot blame the original hops for whatever is found in the spent hops.

By the way, many spent hops are used in cattle feed production, so it is strange that cows have not died yet.

The second category of spent hops is from hop pelleting or hop extraction. In the spent or waste product of the hop extraction process some toxic chemicals might be found, depending on which chemicals were used for the hop extraction.

I hope this clarifies once again the good quality of American hops to provide excellent bitterness, aroma and quality!

Gerard W. Ch. Lemmens
Morris Hanbury USA Inc.
Yakima, Wash.

Zymurgy reported the possible hops toxicity for dogs to alert readers with pets. The properties in spent hops that cause the problem in dogs has not been identified. — Ed.

Extract Inspiration

Dear *Zymurgy*,

I always enjoy each issue more than the previous. I would like to comment on one article in *Zymurgy* Summer 1996 (Vol. 19, No. 2), Bill Metzger's "Extracting the Essentials." I found the article of interest because it stayed away from the technical aspects of extract use and focused instead on the theme, "You can make good extract beer." I intend to use both recipes and was pleased to see they were commercially brewed extract beers.

I have been toying with the idea of going all grain and investing in the equipment needed. I have been using a small-scale mash with all my beers just for the mashing and sparging experience. I'm not completely convinced that, for the scale on which I intend to brew, it behooves me to go the extra step. Owning a small farm

leaves me little extra time to devote to another hobby.

If you're interested in the malt extract beers I've brewed this spring and am enjoying now my recipes can be found on my home page.

Keep up the good work! I'm really glad to be a member.

Charles Aulds
caulds@redstone.army.mil
<http://www.redstone.army.mil/~caulds>
Redstone Arsenal, Ala.

U.K. Beer Voice

Dear *Zymurgy*,

Thank you for your coverage of CAMRA's activities in *Zymurgy* Summer 1996 (Vol. 19, No. 2). However, a slight error has crept into your story. Far from having only 20,000 members, CAMRA's membership is rapidly approaching 50,000.

Membership continues to grow and CAMRA will continue to lobby the U.K. government as well as the European Commission and the European Parliament. In May a CAMRA delegation made a presentation to the European Parliament on the importance of the tied house system to the U.K. brewing industry and the British beer consumer.

CAMRA is determined that the beer consumer's voice will continue to be heard in the corridors of power in Westminster and Brussels.

Cheers,
Iain R. Loe
Campaign for Real Ale
St. Albans, U.K.

Twinking the Content

Dear *Zymurgy*,

I just read *Zymurgy* Fall 1996 (Vol. 19, No. 3) and saw the responses to my "too many calculations" letter printed in Spring 1996 (Vol. 19, No. 1). It appears that some people completely misunderstood my point and extrapolated their own meaning.

For example, Mr. Hackett says that I "brew by the seat of my pants" and I "don't care about numbers." He implies I randomly toss

ingredients into the brewing pot. This could not be farther from the truth. Like most homebrewers, I keep a log of the ingredients, quantities of those ingredients and the brewing methods used for each batch. My log includes the alpha-acid levels of hops, the Lovibond color of grains and other such information.

My point was, some calculations are completely unnecessary for brewing consistent quality beers, and I believe *Zymurgy* goes overboard with this type of information.

For example, in Fall 1996 an article on brown ales has a chart with a variety of measurements. I would be willing to bet Mr. Hackett's proverbial quarter that most extract brewers would not take any of the information to the right of the "alcohol" column into consideration when brewing a batch. (No doubt, you will receive letters to the contrary.)

I find *Zymurgy* to be a very valuable resource from which I have learned a great deal. If this were not true, I would not have subscribed for the past three or four years. My previous letter was meant to be constructive criticism of a publication I care about. Unfortunately, my writing style can be venomous and I apologize.

Sincerely,
David Weiss
via e-mail

Metabisulfite Paranoia

Dear *Zymurgy*,

Having read the feature article on cleansing and sanitizing in *Zymurgy* Fall 1995 (Vol. 19, No. 3), I was surprised to find no mention whatsoever of the use of sulfur dioxide in homebrewing! While not given to conspiracy theories, I wonder. In the UK, SO_2 in the form of sodium metabisulfite ($\text{NaHSO}_3 \cdot \text{H}_2\text{SO}_3$) is almost universally used. It is cheap, easy to use, a reducing agent, fortuitously well-tolerated by brewers yeasts though not other microorganisms, hardly toxic at all (Italy, for instance, permits up to 450 ppm in wine) and is a very minor environmental pollutant compared to other sources of SO_2 . Given all this, why does it not merit so much as a peep?

On the subject of cleansers I can also recommend a product we have over here: Silana PF, a compound of dairy-grade soap and caustic soda.

Yours from the land of Abbot Ale,
Peter G. Luce-Gilmore
<http://www.ced.co.uk>
Cambridge Electronic Design Ltd.

Sulfur dioxide and sulfites are only active against certain bacteria, yeasts and molds. In many organisms sulfites do not actually kill the organism, but only delay the growth. In wine this works because the pH is low enough and the alcohol high enough to kill any surviving organisms. Also, wine is less nutrient rich than beer. In beer the alcohol content is not as high and the pH not so low as to inhibit organisms that may survive sulfite treatment. Also, the wort and beer themselves are more complex from a nutrient standpoint and thus support a much broader range of microorganisms.

Another concern with sulfur-based sanitizers is the taste they may leave in the way of sulfur flavors in the finished product. In the United States we have much more effective sanitizers such as chlorine or iodophor. Just because a substance is allowed in foodstuffs does not mean it is completely safe. Some people have sensitivities and allergies to sulfur compounds.

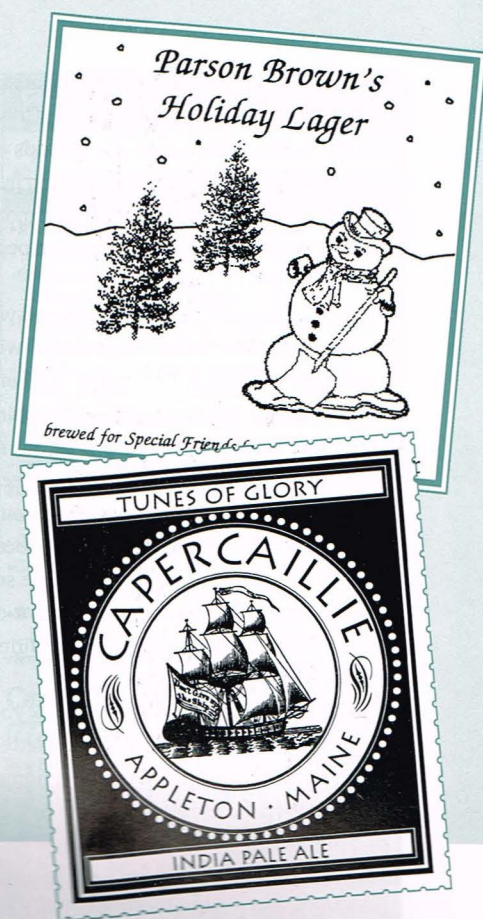
I am not familiar with Silana PF, but the use of caustic soda (sodium hydroxide) should be viewed with caution. It is a very strong base and will readily attack the skin and eyes. Always wear proper clothing, gloves and eye protection when using it.

Jim Liddil
jliddil@azcc.arizona.edu

Back to Homebrewing

Dear *Zymurgy*,

This letter is a follow-up to one I wrote in October 1995 appearing in *Zymurgy* Summer 1996, (Vol. 19, No. 2) in which I revealed I had "graduated" from homebrewing to professional brewing. Reading it is bittersweet now that I have left the world of professional brewing after a mere eight months.



Why, an envious homebrewer might ask, did I leave so soon? There are several reasons, but one of the highest on the list had to do with the realization that I am unable to ride out what I perceive to be a sad trend in brewing.

There are many wonderful micros and brewpubs in the United States truly dedicated to maintaining the history, tradition and quality of beer. However, some are merely cash production facilities. In the latter case, the people who put together these "projects" have no love of beer, rather they simply have the love of money. Just five to seven years ago many of those who started up micros and brewpubs were brewers. These days, they are entrepreneurs. They hire a brewer like they hire a waiter, someone whose expertise can be overridden by the dollar when it benefits the beer-ignorant entrepreneur.

I am sad to say that is what happened to me. I blame myself for being naive early on and ignoring the signs. I enjoyed brewing very much, but eventually the compromises to the integrity of the beer and myself were so great I had to leave. I could say I was just unlucky and it was only my specific circumstances

that have soured my outlook on the fate of the so-called "craft-brewing" industry. However, from what I have seen of the kinds of people rushing into the industry, the next five years will see a lot of brewpubs that care more about money than about beer and the people who support its craft.

Clearly there will be a shakeout and we can only hope those interested in quality will be the ones to survive. That happy day will be a few years in the future and, at the point in life I find myself now, I cannot afford to wait. I have returned to my previous career. Younger brewers may be able to stick it out, assuming they do not fall into the trap of beer for money's sake above everything else set by business people not merely ignorant of beer but worse, with no interest in acquiring knowledge or appreciation of it.

In conclusion, I would like to thank you once again for printing my previous letter, written with all the enthusiasm of a homebrewer who had the opportunity to go professional. I urge all those who are, or long to be, in the same position to first, be careful who it is you might work for and second, whether brewing professionally or not, to hold onto your brewing integrity. Brew to the standard of quality, educate everyone you can, stick with the old traditions at the very same time you are creating new ones. Good luck.

Sincerely,
Alan Pagliere
Ex-Head Brewer
Ann Arbor, Mich.

Fluid Dynamics

Dear *Zymurgy*,

I am writing in regard to the article "Cool Coils, Immersion Chiller Road Test" in *Zymurgy* Fall 1996 (Vol. 19, No. 3). Regarding the use of any equipment, brewers should take special note of the authors' introductory comments, a testament that the technique used in the operation of even a simple device can produce widely varying results.

In this case, it is important to realize the wort will have a strong tendency toward temperature stratification, where the cooled portion of the wort will be driven downward

by its increased density, called "free convection, and accumulate at the bottom of the kettle. The addition of a recirculating pump to the trials was a good idea, and if the configuration was accurately reproduced in each setup, it likely provided consistent agitation for each test.

In a typical immersion chiller setup with manual intermittent agitation, such as most brewers use, free convection can actually be used to advantage. Particularly during the times when the wort is not being stirred, any practice that increases the temperature difference between the coolant and the wort it is exposed to will increase cooling effectiveness. Two such techniques come to mind.

First, because the hottest wort will rise to the top of the kettle, the chiller should be suspended as high up in the volume of wort as possible. If the chiller is allowed to rest on the bottom of the kettle cooled wort will quickly accumulate around it and lower the temperature differential. A unit with a compact arrangement of coils, where more of the length can be situated near the top of the wort, would seem to have an advantage.

Second, the coolant should be directed through the chiller in such a way that it flows from the bottom of the coil to the top. Again, this will tend to maximize the temperature differential because the portion of wort cooled by the top-most coils will be cascading down over the lower ones. The lower coils, then, should be made to carry the lowest temperature coolant similar to the operation of a counterflow wort chiller. I note that in the illustration on page 57, the coolant is shown to flow in the opposite direction.

Even with the recirculating pump set-up used in the trials, some effect might be seen from applying the techniques described above. Finally, to save time and water, one should take note of the cooling water temperature and set a reasonable goal for the final wort temperature. The cooling process should be stopped when the wort is a degree or two hotter than the available coolant.

Martin Manning
Cincinnati, Ohio

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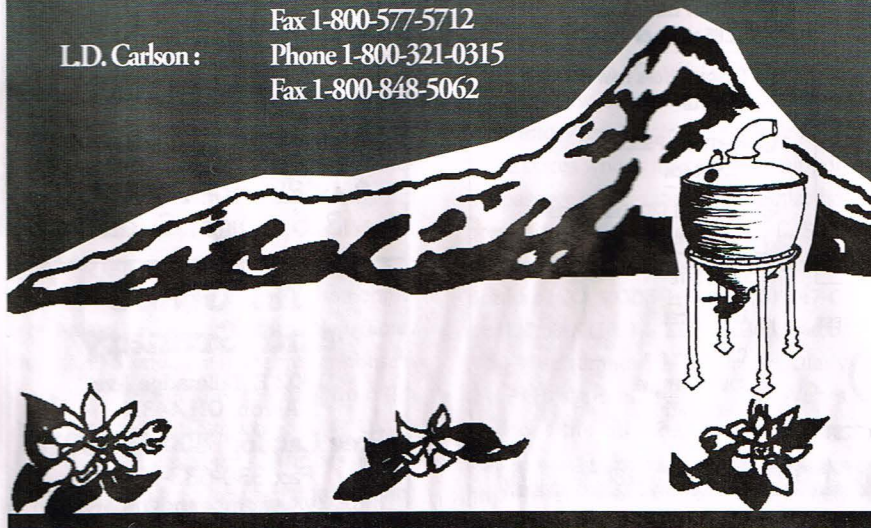
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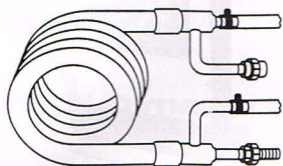
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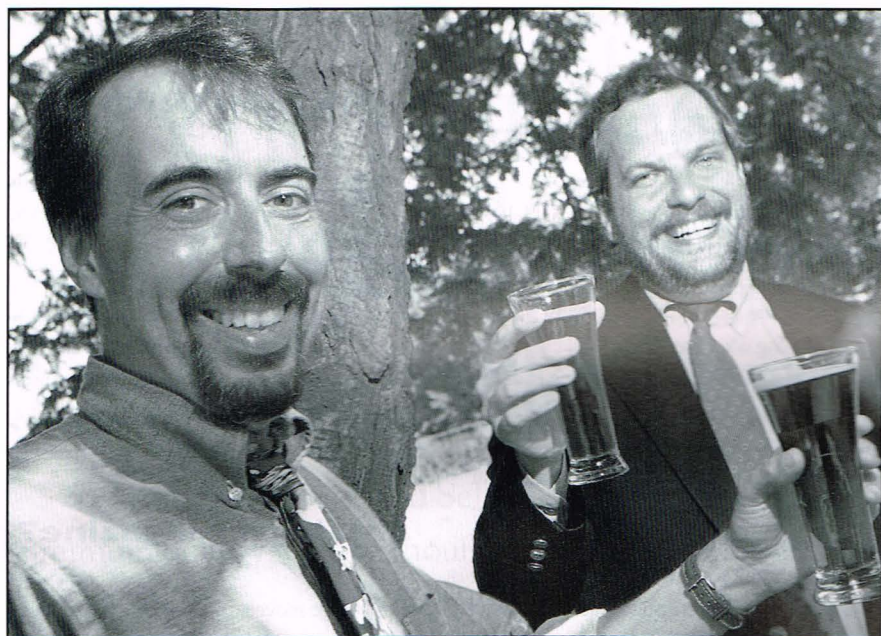
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A S S O C I A T I O N NEWS

← Karen Barela



Jim Zebora and Representative James Abrams celebrate after successfully overturning Connecticut state homebrewing laws.

The Power of Our Members

Jim Zebora was surprised to read in "Association News," in *Zymurgy* Spring 1996 (Vol. 19, No. 1) that Connecticut, his home state, was one of 14 without statutory recognition allowing homebrewing. Jim took action and Gov. John Rowland signed a bill into law in June allowing residents to manufacture beer and transport homebrew to organized events and tastings. Rep. James Abrams, D-Meriden, a homebrewer himself, sponsored the bill after learning from Jim about the article in *Zymurgy*.

The AHA campaign continues in the remaining 13 states where homebrewing has not been statutorily recognized (Alabama,

Delaware, Idaho, Indiana, Kentucky, Mississippi, Missouri, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee and Utah) as well as in the seven states where the law remains unclear, (Louisiana, Maine, Nevada, New Hampshire, New Mexico, New York and West Virginia). Anyone living in these states who is interested in supporting the passage of legislation to recognize homebrewing should contact Mark L. Snyder, campaign administrator, at PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816 ext. 137; FAX (303) 447-2825; Marks@aob.org. A 50-state summary is updated regularly on the AOB's e-mail service and Web site. Address the message to info@aob.org and include the key word "legal" or: <http://www.aob.org/aob/zymurgy/legal.html> on the Word Wide Web.

The Great Lakes Homebrew Rendezvous

Cleveland, Ohio, is the site of the AHA 1997 National Homebrewers Conference July 17-19. We had planned to take the Conference to Kansas City, Mo., but downtown hotels were unable to accommodate room rates below \$110 per night. Ohio has two large breweries, one regional brewery, four microbreweries and nine brewpubs. Cleveland is within 500 miles of 44 percent of all U.S. households. What more reason do you need to plan on attending the Great Lakes Homebrew Rendezvous? How about free beer? We'll have commemorative barley wine brewed by Mark Richmond, commemorative mead brewed by Jackie Rager and Invitational Homebrews, 25 kegs homebrewed by a select group of 1996 National Homebrew Competition winners and, of course, craft-brewed beer from around the country.

We encourage you to bring your families. Cleveland is ranked third in the nation for cultural activities, so while you're soaking up beer information and educating your mind and palate about beer and brewing, your family can enjoy the Cleveland Center for Contemporary Art, Cleveland Orchestra, Cleveland Museum of Natural History, Rock and Roll Hall of Fame and Museum, Great Lakes Science Center, Cleveland and Metroparks Zoo and Rain Forest, Sea World of Ohio, Pro Football Hall of Fame, or perhaps an Indians baseball game. Coinciding with the Conference is Celebration 201, Cleveland's annual riverside festival, July 18 through 20. For information about Cleveland, contact the Convention and Visitors Bureau of Greater Cleveland at (800) 321-1004 and ask for the official visitors guide. The Great



Join the AHA at The Great Lakes Homebrew Rendezvous July 17-19, 1997.

Lakes Homebrew Rendezvous will be at the Sheraton Cleveland City Centre Hotel in downtown Cleveland.

For information about the Sheraton Cleveland City Centre Hotel contact them directly: 777 St. Claire Ave., Cleveland, Ohio 44114; (216) 771-7600. Complete details, speakers and schedule for the AHA 1997 National Homebrewers Conference will be in *Zymurgy* Spring 1997 (Vol. 20, No. 1).

Agreement Reached With BJCP



The AHA and Beer Judge Certification Program (BJCP) have signed an agreement allowing the

AHA Sanctioned Competition Program access to BJCP judges and, specifically, for judging and stewarding points to be recorded by the BJCP for all AHA Sanctioned Competitions. The AHA and BJCP have been exchanging judging and point information under an informal agreement since the BJCP became an independent organization in April 1995. The BJCP is a volunteer organization and separate from any sponsoring companies.

The AHA sanctions more than 200 competitions each year. When a competition is sanctioned by the AHA, organizers receive a complete packet of information detailing the organization of a homebrew competition. The kit comes with a handbook explaining competition guidelines, staffing needs, an overview of judging beer and information to make post-competition cleanup easy. The kit also includes a judging procedures manual,

category descriptions, score sheets and lists of regional AHA registered clubs. Labels are included to personalize the score sheets and other materials with the name of your competition. Mailing labels for AHA registered clubs in your region are available on request. The BJCP sends a list of BJCP judges directly to organizers of AHA sanctioned events and invoices the AHA for use of the judge list. For information on sanctioning your homebrew competition with the AHA, contact Caroline Duncker, AHA project coordinator, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816 ext. 116; FAX (303) 447-2825 or Caroline@aob.org.

Brew, Enter and Win

The rules and regulations for the AHA 1997 National Homebrew Competition are included in this issue. Brew now to enter in April. Entries are due April 28 through May 9. First-round judging will take place at all eight sites on May 17 and 18. The final judging is at the Conference in Cleveland on June 17. The Competition is one of the AHA services for which members receive a discount, and that membership dollars support. Take advantage of your membership and support the goals of the competition: to provide quality feedback on homebrew and to encourage accurate brewing to style. While we would all agree brewing anything you like regardless of style is one of the things that makes homebrewing so great, brewing to style can be an educational tool.

Judges, stewards and volunteers are needed at all sites. For details on how you can participate contact Caroline Duncker, AHA project coordinator, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816 ext. 116; FAX (303) 447-2825 or Caroline@aob.org.

Zymurgy Writer Wins Award

Ray Daniels won third place in the brewing features category of the 1996 Quill & Tankard awards for his article "Malting and Mashing," which appeared in *Zymurgy* Special Issue 1995 (Vol. 18 No. 4). The award was presented by the North American Guild of Beer Writers Sept. 28, 1996 in Denver, Colo.

The Quill and Tankard awards are held each year to recognize excellence in writing on the topics of beer, brewing, appreciation of beer and food and increased understanding of brewing techniques, history and culture, through all forms of media including newspapers, magazine, books, online editorial and CD ROMS. For more information about the North American Guild of Beer Writers contact Lucy Saunders, 2412 E. Stratford Ct., Shorewood, WI 53211; (414) 962-8441; beerscribe@aol.com or Steve Williams, secretary, 18 South Dr., Hyde Park, NY 12538; stevew@mhv.net.

Gift Memberships



The AHA is offering unique gift packages this year for the holiday season, and we encourage you to present the gift of homebrewing to those on your gift list. You

can use the card enclosed in this issue or contact our customer service department at (303) 546-6514 for details.

Missing a Magazine?

If you've moved and have missed an issue of *Zymurgy*, we want to know. Chances are we don't have your current address. You can relay change of address information by mail, phone, fax or e-mail to the American Homebrewers Association, PO Box 1510, Boulder, CO 80306-1510; (303) 546-6514; FAX (303) 447-2825; orders@aob.org or service@aob.org. Additional information is available via internet by entering info@aob.org or expire@aob.org.

Correction

The address for the Hail to Ale Club-Only Competition published in the September Club Report included an incorrect zip code. The correct address is:

Hail to Ale
c/o Brew Better Supply
10207 C Chapel Hill Rd.
Morrisville, NC 27560

Karen Barela is president of the AHA. 



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CALENDAR



NOVEMBER

- 22** Great Brews of America Homebrew Competition, **AHA SCP**, Lake Harmony, Pa. Entries due Nov. 15. Contact Shelly Kalins at (717) 722-9111 ext. 800; <http://www.splitrockresort.com/beerfest.html>.
- 23** Salt City Brew Club 11th Annual Competition, **AHA SCP**, Syracuse, N.Y. Entries due Nov. 9. Contact Kieran O'Connor at (315) 449-2844 or koconnor@syrr.edu.
- 23** CABA's All About Ales Competition, BJCP Registered, Toronto, Ontario, Canada. Entries due Nov. 9. Contact Craig Pinhey at (905) 529-4388 or frogger@netaccess.on.ca.
- 23** CABA's Annual General Meeting and All About Ales Awards Dinner, Toronto, Ontario, Canada. Contact CABA at (416) 462-9981.
- 23** First Alewife Homebrew Competition, **AHA SCP**, Glastonbury, Ct. Entries due Nov. 23. Contact David Gourley at (860) 659-8588.
- 23** Humpy's Big Fish Homebrew Competition, **AHA SCP**, Anchorage, Alaska. Entries due Nov. 23 (11 a.m.). Contact Larry Williamson at (907) 243-5354 or 70107.1314@compuserve.com.
- 24** BJCP Exam, Toronto, Ontario, Canada. Contact CABA at (416) 462-9981.
- 30** 14th Annual Old Ale Festival, White Horse, London, England.

DECEMBER

- 7** Belgian Blockbuster Club-Only Competition, **AHA SCP**. Entries due Dec. 2. Contact Caroline Duncker at (303) 447-0816 ext. 116 or caroline@aob.org.
- 7** New England Fall Regional Homemade Beer Competition, **AHA SCP**, Deerfield, Mass. Entries due Dec. 2. Contact Charlie Olchowski at (413) 773-5920.
- 7** Happy Holidays Homebrew Competition, BJCP Registered, St. Louis, Mo. Entries due Dec. 1. Contact Jerry Dahl at (314) 822-8039 or JDAHLBMW@aol.com.

- 7** Harpoon Holiday Party, Boston, Mass. Call (617) 574-9551.
- 7-8** Open a Brewpub or Microbrewery Course, American Brewers Guild, Woodland, Calif. Call (800) 636-1331.
- 19** Great Trappist Ales Beer Tasting, Marina del Rey, Calif. Call the Ritz-Carlton at (310) 823-1700 ext. 5121.

JANUARY

- 12** BJCP Exam, Staten Island, N.Y. Contact Ken Johnsen at (718) 667-4459 or kbjohns@escape.com.
- 17** BJCP Exam, Brighton, Mich. Contact Bill Pfeiffer at (313) 295-5745 or (810) 229-0727.
- 18** Big Bend Brew-Off, **AHA SCP**, Tallahassee, Fla. Entries due Jan. 2-15. Contact Gary Essex at (904) 942-4947 or nedr@freenet.ih.il.us.
- 18** War of the Worts, **AHA SCP**, Montgomeryville, Pa. Entries due Dec. 26-Jan. 11. Contact Alan Folsom at (215) 343-6851 or folsom@ix.netcom.com.

FEBRUARY

- 1** Hail to Ale Club-Only Competition, **AHA SCP**. Entries due Jan. 27. Contact Caroline Duncker at (303) 447-0816 ext. 116 or caroline@aob.org.
- 1** National Bay Area Brewoff, **AHA SCP**, Pleasanton, Calif. Entries due Jan. 6-18. Contact John Pyles at (510) 791-0589 or JohnPyles@aol.com.
- 3-March 7** Intensive Craft Brewing Science and Engineering Program, Davis, Calif. Contact the American Brewers Guild at (800) 636-1331.
- 5-April 18** Craftbrewer's Apprenticeship Program, Davis, Calif. Contact the American Brewers Guild at (800) 636-1331.
- 10** Spring Issue of *Zymurgy* (Vol. 20, No. 1) mails. Please allow four to six weeks for delivery.
- 15** Florida State Fair Homebrewing Competition, **AHA SCP**, Tampa, Fla. Entries due Feb. 12. Contact Mark Stober at (813) 977-0141.

- 15** Third Annual Commander Saaz Interplanetary Blast-off, **AHA SCP**, Cape Canaveral, Fla. Entries due Feb. 8. Contact Lynn Seelos at (407) 633-6605.

- 20-21** Rocky Mountain Microbrewing Symposium, Colorado Springs, Colo. Call (719) 592-1894 or tac@usa.net.

- 21-22** 14th Annual Kansas City Bier Meisters Regional Homebrew Competition, **AHA SCP**, Merriam, Kansas. Entries due Feb. 8. Contact John Weerts at (913) 962-4323 or jweerts@sound.net.

- 22** Hampton Roads "Taming of the Brews," **AHA SCP**, Norfolk, Va. Entries due Jan. 24-Feb. 15. Contact Bill Bunning at (804) 766-7227 or BunningB@msn.com.

- 22** Heartland Homebrew Competition, **AHA SCP**, Decatur, Ill. Entries due Feb. 17. Contact Roger Meredith at (217) 428-7022 or kellums@aol.com.

- 28-March 2** Cheers One World Beer Festival, Miami, Fla. Call (800) 386-3839 or clusey@mail.aip.com.

MARCH

- 1** Knickerbocker Battle of the Brews '97, **AHA SCP**, Troy, N.Y. Entries due Feb. 22. Contact Paul Krebs at (518) 885-2581 or pkrebs@cris.com.
- 8** Fourth Annual America's Finest City Homebrew Competition, **AHA SCP**, San Diego, Calif. Entries due Feb. 25-March 4. Contact Dion Hollenbeck at (619) 459-8724 or hollen@vigra.com.
- 8** Sixth Annual Moon Madness Competition, **AHA SCP**, Reading, Pa. Entries due March 1. Contact Mark Johnston at (610) 944-0500.
- 8** Second Annual Classic City Brew-Fest, Athens, Ga. Call (800) 540-MALT or <http://www.negia.net/-brew>.
- 15** Luscious Lager Club-Only Competition, **AHA SCP**. Entries due March 10. Contact Caroline Duncker at (303) 447-0816 ext. 116 or caroline@aob.org.

- 21-22** Seventh Annual March Mashfest, **AHA SCP**, Fort Collins, Colo. Entries due March 13. Contact Brian Walter at (970) 493-2586 or walter@lamar.colostate.edu.

- 21-22** 11th Annual Bluebonnet Brew-off, **AHA SCP**, Fort Worth, Texas. Contact Darrell Simon at (214) 475-7571 or dsimon@iadfw.net.

- 22** CABA's March in Montreal Homebrew Competition, Montreal, Quebec, Canada. Entries due March 8. Contact Graham Bigland at (514) 683-8681.

- 22-24** Second Annual Big Red Liquors Homebrew Contest, **AHA SCP**, Bloomington, Ind. Entries due March 15. Contact Russ Levitt at (812) 331-8923.

- 22-23** Open a Brewpub or Microbrewery Course, American Brewers Guild, Woodland, Calif. Call (800) 636-1331.

- 23** Sixth Annual New York City Spring Regional Homebrew Competition, **AHA SCP**, Staten Island, N.Y. Entries due March 21. Contact John DeGeorge at (718) 667-4459 or kbjohns@escape.com; <http://virtumall.com/EastCoastBrewing/ECBMain.html>.

- 24-26** Flavor Reigns, Institute for Brewing Studies Craft-brewers Conference and Tradeshow, Seattle, Wash. Contact the IBS at (303) 447-0816.

- 28-May 9** National Homebrew Competition First Round entries received at eight U.S. sites and one Canadian site. Contact Caroline Duncker at (303) 447-0816 ext. 116 or caroline@aob.org.

- 29** The Great British Pub Crawl, United Kingdom. Contact Marlene Ginsberg at (800) 478-9188 or getsdr@aol.com.

APRIL

- 19** Ninth Annual Bluff City Brewers Homebrew Extravaganza, **AHA SCP**, Memphis, Tenn. Entries due April 16. Contact Patrick Rohrbacher at (901) 458-3090 or FTMK71B@Prodigy.com.

MAY

3 National Homebrew Day. Contact the AHA at (303) 447-0816.

3-4 Eighth Annual Sunshine Challenge, AHA SCP, Orlando, Fla. Entries due April 28. Contact Ron Bach at (407) 696-2738.

17-18 National Homebrew Competition First Round Judging in Portland, Ore.; Fresno, Calif.; Thornton, Colo.; Chicago, Ill.; Atlanta, Ga.; Lancaster, Pa.; Kansas City, Kansas; Ontario, Canada; Salem, Mass. (cider only).

24 Bock is Best Club-Only Competition, AHA SCP. Entries due May 19. Contact Caroline Duncker at (303) 447-0816 ext. 116 or caroline@aob.org.

JUNE

6-7 1997 CABA's Annual Great Canadian Homebrew Conference and Great Canadian Homebrew Competition Awards Dinner, Longbranch Legion, Toronto, Ontario, Canada. Contact CABA at (416) 462-9981.

12 First Round NHC results mail first class.

22 Buzz-Off, AHA SCP, Downingtown, Pa. Entries due June 16. Contact Robert Mattie at (610) 873-6607 or robert.mattie@sb.com.

JULY

7-11 National Homebrew Competition Second Round entries due. Cleveland, Ohio. Contact Caroline Duncker at (303) 447-0816 ext 116 or caroline@aob.org.

17-19 AHA National Homebrewers Conference and Festival, Cleveland, Ohio. Contact the AHA at (303) 447-0816.

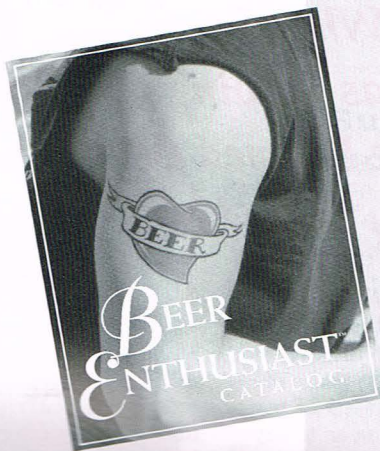
AHA SCP = American Homebrewers Association Sanctioned Competition Program

The calendar of events is updated weekly and available from the Association of Brewers: info@aob.org or <http://beertown.org> on the web.

To list events, send information to **Zymurgy** Calendar of Events. To be listed in **Zymurgy** Spring Issue 1997, information must be received by Jan 10, 1997. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months before the event. Contact Caroline Duncker at (303) 447-0816, ext. 116; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679; caroline@aob.org.

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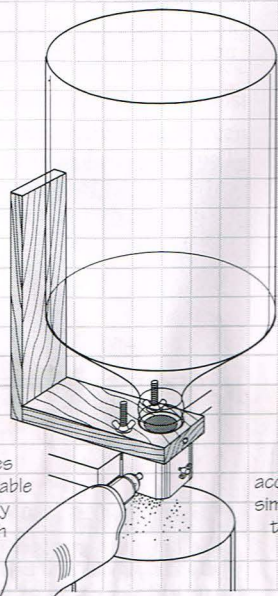
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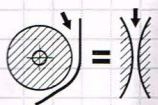
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"Can it really be any good?" a young woman whispered. "Heavens no," Thomas exclaimed. "He's never brewed a drop in his life."



They Laughed When I Told Them I Was Serving My Own Home Brewed Beer, But When They Tasted My Pale Ale!—

Thomas brought a gift of his latest micro-brew discovery that he wanted everyone to try. I decided that this would be a dramatic moment for me to make my debut. To the amazement of all of my friends, I strode confidently over to my Alephenalia Micro Brewery-Home Brew Kit and began to pull out the professional looking bottles that I had placed there.

"Chuck is up to his old tricks," somebody chuckled. The crowd laughed. They were all certain that I couldn't brew any more than I could make potatoes au gratin.

"Can he really brew?" I heard Thomas' partner whisper. "Heavens, no!" Thomas exclaimed. "He's never brewed a drop in his life. But just you watch him. This is going to be good."

I decided to make the most of the situation. Holding up the wing capper, I explained that I had bottled it just for this occasion. With mock dignity, I drew out a bottle and cradled it in my arms like a great wine. "Is this another of those disappearing ink trips," called a voice from the rear. The crowd rocked with laughter.

Then I began to pour.

Instantly a tense silence fell on the guests. The laughter died on their lips as if by magic. I poured a glass for everyone, even those who exclaimed "I don't like beer." I heard a gasp of amazement. My friends sat breathless, spellbound.

I sampled it myself and for a brief moment I forgot the people around me. I forgot the hour, the place, my fellow imbibers. The little world I lived in seemed to fade—seemed to grow dim—unreal. Only the ale was real. Only the ale and the visions it brought me. Visions as beautiful and as changing as an autumn sunset, with its amber hues, just like my homebrew.

A real Triumph!

As everyone finished tasting, the room resounded with accolades. I found myself surrounded by excited faces. How my friends carried on! Men shook my hand—wildly congratulating me—pounding me on the back in their enthusiasm! Everybody was exclaiming with delight, plying me with rapid questions. Chuck! Why didn't you tell us you could brew like that? Where did you learn? How long have you been brewing?

"I simply followed the complete instructions included with the Alephenalia Homebrew kit," I replied. "And just a short while ago, I didn't know hops from malt."

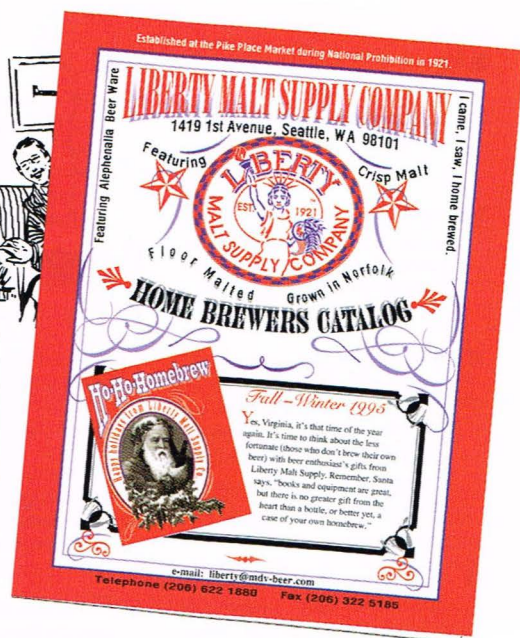
"Quit your kidding," laughed Thomas, a real beer enthusiast. "You've been brewing for years. I can tell."

"Only since Rosie gave me an Alephenalia Microbrewery for my birthday, less than three weeks ago. I decided to keep it a secret so that I could surprise all you folks." Then I told them the whole story. "Ever heard of Liberty Malt Supply Company?" A few of my friends nodded. "That's a home brew shop and mail order catalog!" One of the oldest in the entire country!

"Exactly," I replied. "They have a great program for learning how to brew beers like a professional, the Liberty Way."

How I learned to brew without a teacher.

And then I explained how for years I had longed to brew my own beer. I shared that dream with Rosie and when she saw the Alephenalia Microbrewery in the Liberty catalog, she knew it was the perfect gift for me.



A Complete Catalog!

Pointing to the colorful Alephenalia Micro-brewery carton, I explained, "It contains brewing equipment that can be used over and over to brew beers like the professionals." I told them how pleased I was with *The Brewer's Companion*, a real home brewers bible. The Liberty Pack included with the microbrewery contained enough pre-measured, concisely labeled ingredients to brew five gallons of the Pale Ale. I explained that each of the Liberty packs used the highest quality ingredients, exclusive to Liberty Malt and that packs for each of the classic brewing styles are available.

I proudly told them that I have already begun brewing Weekend Weiss, a Bavarian style wheat beer and Liberator Doppelbock, both promptly received by simply dialing Liberty Malt's own toll free number, 1-800-990-MALT (6258).

Favorite brewing styles

"Let's order Liberty's Pils Pack!" Thomas pleaded after seeing the Liberty catalog. He took another sip and said, "Which weekend is that Weiss going to be ready?"

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BREW NEWS

James Spence

HEAD LINES

Yeast Genes Sequenced



After nearly seven years of work, U.S. and European researchers have completed the genetic map of *Saccharomyces cerevisiae*, common brewing yeast. The yeast genome contains 12.5 million nucleotide base pairs in 16 chromosomes of about 6,000 genes each. The research is remarkable because yeast cells bear similarities to human cells, and can be used as guides to sequence and study human genes. The completion of the sequencing is the first time cells similar to human cells have been sequenced. In fact, the researchers found that about one-quarter of human genes match yeast genes. Researchers expect the human genome sequencing to take another seven to nine years. (*Science News*, Vol. 149)



The chemical breakdown of yeast DNA into the amino acid parts is shown on these electrophoresis gels.

Pharoah's Beer Sells at Harrods



Beer brewed to an ancient Egyptian recipe by Scottish and Newcastle was put on sale at Harrods department store in London in July. Nine hundred ninety-nine bottles were sold at \$75 each and the remaining bottle is priced at \$7500. Proceeds from the sale go to Egyptian archaeology.

The ale, dubbed Tutankhamun Ale, was created based on studies of sediment in old jars at Nefertiti's Sun Temple in Egypt. Researchers grew a special ancient variety of grain for the beer, which limited the quantity that could be brewed. (*Rocky Mountain News*, June 25, 1996)

Guinness IS Good for You

The same doctor who discovered the benefits of red wine and red grape juice on the vascular system has found similar benefits from drinking dark beer. Dr. John Folts of the University of Wisconsin-Madison believes certain pigmented antioxidants in dark beer reduce the "stickiness" of platelets in the blood, lowering the chance of blood clots forming that could lead to a heart attack or stroke. Folts found that tea has a similar effect, but coffee made the platelet clogging worse. For the study, dogs were given Guinness Extra Stout and Heineken. (*Alternatives For the Health Conscious Individual*, July 1996)



Guinness in The Gambia kept Dena and Sam Nishek feeling healthy.

Germans Want Genetic Labeling

Adhering to the 480-year-old tradition of *Reinheitsgebot*, the 1516 beer purity law, German lawmakers want to label beer that uses genetically altered ingredients. So far, the European Parliament has rejected the German motions to require breweries to label beers brewed with genetically altered ingredients. Genetically altered yeast can be used to cut the time and cost of brewing beer. (*The Denver Post*, July 6, 1996)

THE BIG WORLD OF BEER

Budvar Brews 1 Million Hectoliters



For the first time in its 100-year history, Czechoslovakia's famous Budvar Brewery will produce more than 1 million hectoliters in 1996 — 10 percent more than in 1995.

Also for the first time the brewery sold more beer in that country than it exported. Budvar produces the brand Budweiser Budvar. (*Brewing and Distilling International*, June 1996)



Top Five Beer Markets

While most of the world beer market has stabilized in growth, five markets have shown considerable increases in beer production. The five fastest growing beer markets in order are China, Turkey, Colombia, Argentina and South Korea. Annual growth rates between 1992 and 1994 ranged from 5.4 percent for South Korea, to a whopping 18.5 percent for China, which is second only to the United States in beer production. Leading the world in beer consumption is Czechoslovakia (159.6 liters per capita in 1994), followed by Germany, Denmark, Ireland and Austria. (*Brewing and Beverage Industry International*, No. 1/96 and No. 2/96)

NORTH AMERICAN BREWERY LIST

Information provided by the Institute for Brewing Studies, Boulder, Colo. A complete list of breweries and brewpubs is updated quarterly and available from the Association of Brewers for \$5. Check the Association of Brewers World Wide Web page <http://beertown.org/aob> for more frequent updates.

* Denotes microbrewery/brew-on-premises combination

OPENINGS

(As of July 17, 1996)

UNITED STATES

Microbreweries

Arizona: Lawler Brewing Co., Scottsdale
California: Indian Wells Brewing Co., Inyokern; Stone Brewing Co., San Marcos
Maine: Belfast Bay Brewing Co., Belfast
New Mexico: Second Street Brewing Co., Santa Fe
New York: Saw Mill River Brewing Co., Yonkers
Ohio: Black Swamp Microbrewery, Toledo
Washington: Elysian Brewing Co., Seattle
Wyoming: Checkers, Buffalo; Popo Agie Brewing Co., Lander

Brewpubs

California: B.J.'s Brewery, La Brea
Connecticut: Alewife Grille and Brewery, Glastonbury
Florida: Panama City Brewery and Cafe, Panama City Beach
Georgia: St. Simon's Brewing Co., St. Simon's Island
Illinois: Glen Ellyn Brewing Co., Glen Ellyn; O'Grady's Brewery and Pub/O'Grady's Brewing Co., Inc., Arlington Heights; Founders Hill Brewing Co., Downers Grove
Kansas: Kaw River Brewery, Lawrence
Louisiana: Old River Brewhouse, Madisonville
Massachusetts: Fort Hill Brewhouse, Boston; Salem Beer Works
Nebraska: Spilker Ales, Cortland
New Jersey: Jersey Jim's Brewing Co., Hillsborough
New York: Highlander Brewery/Highland Fling Brewpub Inc., New York; Malt River Brewing Co., Latham; Southampton Public House, Southampton; Typhoon Brewing Co., New York

South Dakota: Chances Are Brewpub/Rough Draft Brewing Co., Pierre
Texas: Breckenridge Brewery, Dallas
Utah: Moab Brewery, Moab; Pinnacle Brewing Co./Groggs, Helper
Washington: Dad Watson's/McMenamins, Seattle

Contract Breweries

California: Old European Brewery Co./Colonial Brewery Co., San Diego
New Jersey: Shore Brewing Co., Harvey Cedars

CANADA Microbreweries

Ontario: Lakes of Muskoka Cottage Brewery, Bracebridge
Alberta: Wild Rose Brewery (No. 9), Calgary

Brewpubs

British Columbia: Cog and Kettle Brewery and Restaurant, Campbell River
Saskatchewan: Hose and Hydrant Brewing Co., Saskatoon

CLOSINGS

UNITED STATES

California: Fullerton Hofbrau, Fullerton; J & L Brewing Co./JJ's Bar and Grill, Novato
Colorado: Mark's Brewing Co., Berthoud; Lone Wolfe Brewing Co., Carbondale
Washington D.C.: Dock Street Brewing Co. and Restaurant (No. 2), Washington
Kansas: Miracle Brewing Co., Wichita

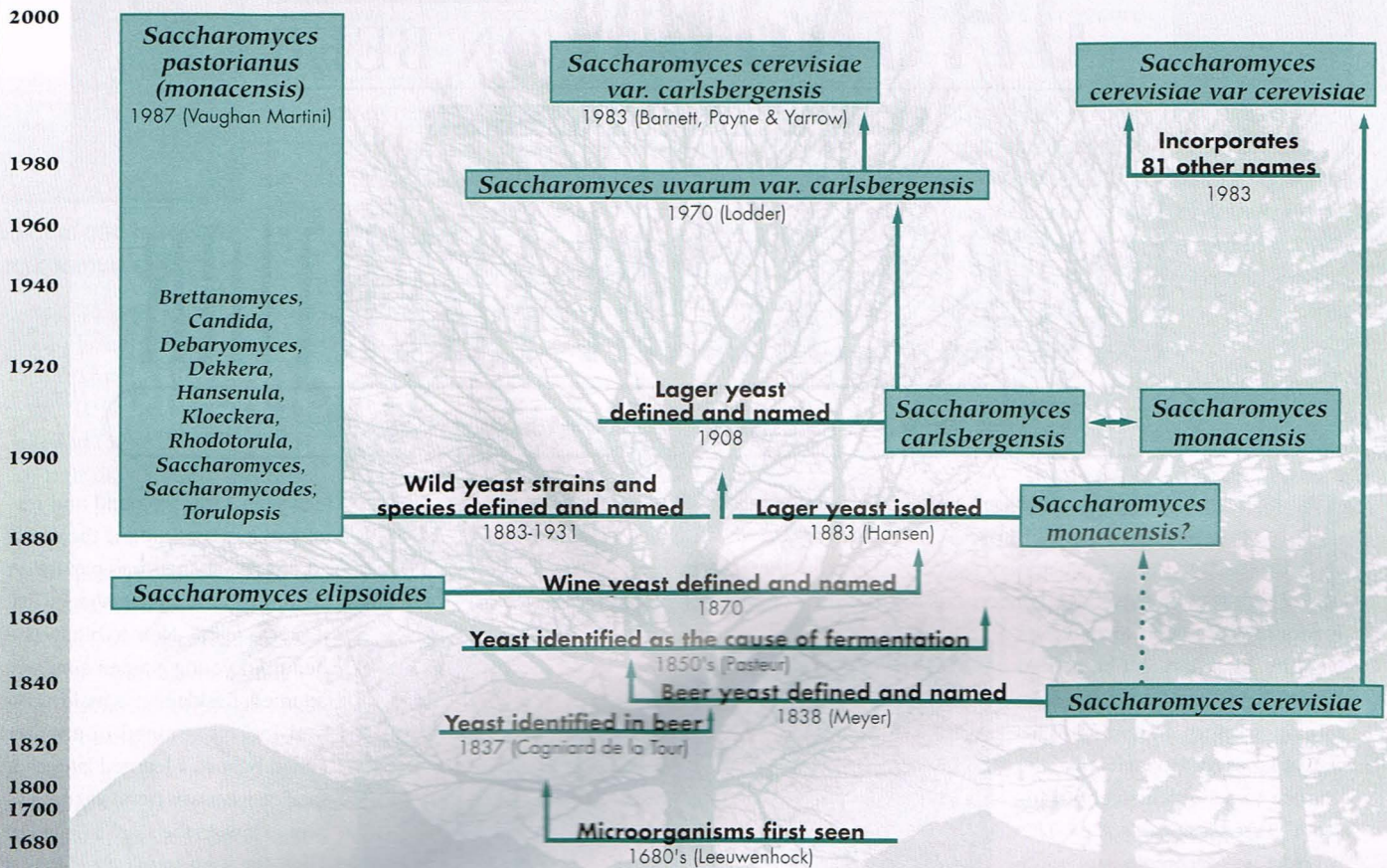
U.K. Competition Chooses Champs

With 850 entries from 200 breweries in 36 countries, the 1996 Brewing Industry International Beer Awards chose nine champion beers and announced the winners in April. Four of the nine awards went to breweries outside the United Kingdom. New Glarus Brewing Co. of Wisconsin won champion beer in the international specialty beers category for their Belgian Red. The next competition will be in 1998 at Burton upon Trent, England. (*Brewers Digest*, March 1996)



Deborah and Dan Carey hold the champion beer award they won for their Belgian Red.

TECHNOTES



Yeast Taxonomy in Flux

Since the discovery of yeast, researchers have worked to develop ways of classifying the wide variety of brewing yeasts available. Scientists have used microbiological and physiological characteristics such as fermentation patterns and reproductive traits to classify yeast. Developments in molecular and genetic biology, however, have enabled researchers to use multiple tests to better define yeast taxonomy based on chromosomal characteristics. The research has led scientists to believe that yeast genomes are dynamic: genetic material is moved, added and lost, making it difficult to classify yeast strains that are closely related. One result of classification efforts is the hypothesis that *S. carlsbergensis* ("lager yeast") is a hybrid of *S. cerevisiae* ("ale yeast") and *S. monacensis*. The authors also suggest that these findings

should make a case for the reintroduction of *S. carlsbergensis* as a specific name for lager yeast. (*Cerevisia*, No. 4, 1995, pp. 28-33)

New Hop Varieties Released

At least five new U.K. hop varieties, three of the dwarf variety, are scheduled to be released in 1996. First Gold, a 6.5 to 8.5 percent alpha acid multipurpose dwarf hop; Herald, an 11 to 13 percent alpha acid bittering hop; and Pioneer, a semidwarf 8 to 10 percent alpha acid bittering hop were developed at Wye College, England. Dwarf hops make cultivating and harvesting more economical because lower trellises can be used. Phoenix and Admiral are two new hops with high alpha acid, 8.5 to 11.5 and 11.5 to 14.5 respectively, combined with good aroma characteristics for multipurpose use in brewing. (Morris Hanbury press materials)

Mitochondria May Play Higher Role

The presence of dissolved oxygen is known to be critical in fermentation performance, particularly in high-gravity brewing where fermentations can become sluggish. The role of yeast mitochondria has been considered irrelevant in fermentation, but a review of recent studies suggests mitochondrial development may play a more important role than previously thought. Researchers speculate the adaptive response of yeast cells in high-gravity worts that facilitates fermentation could be a result of mitochondrial function, indicating proper mitochondrial development is necessary for good fermentation. (*Journal of the Institute of Brewing*, 1996, Vol. 102, No. 1, pp. 19-25)

James Spence, a National BJCP judge, has been homebrewing since 1989.

JACKSON ON BEER

Michael Jackson

BREW LIKE AN EGYPTIAN



Britain has always been a cosmopolitan country, but people are still surprised that its most famous department store, Harrods of Knightsbridge, London, has

for some years been owned by a wealthy Egyptian, Mohamed Al Fayed. Being both a propagandist for things British and proud of his native Egypt, Al Fayed leapt at the chance to sell exclusively in his store "Tutankhamun's Ale." This product was a three-barrel batch brewed on the basis of archaeological exploration in Egypt by the Edinburgh pilot plant of Scottish and Newcastle Breweries.

The odd conjunction of luxury store, exotic owner and "ancient" brew created an astonishing amount of media interest. When I arrived at the launch in a function room adjoining Harrods' restaurant, the place was a forest of television crews, blimped mikes aloft. One of the mikes was shoved in my face. "What do you think of it, Mr. Jackson?" demanded the reporter.

"I would tell you if I had a sample," I responded. One was duly placed in my hand. "It tastes surprisingly beerlike," I managed, "perhaps because they used modern yeast."

The reporter's face fell. "That's much too technical," he growled. "Just tell us whether you like it or not."

Resignedly, I tried again: "This is pretty decent. I could certainly go a pint or two." From the corner of my eye, I could see fellow beer-writer Roger Protz surrounded by tabloid

news on television." My profound and reasoned comments had rung around the world.

The next day newspapers had pictures of Al Fayed wearing a gilded helmet shaped like

a sacred feline. Next to him was a beautiful young woman similarly adorned. Beside him, a male assistant looked strained in another gilded helmet. I learned later that the headgear was normally used in promotions in the store's Egyptian Hall, the area in which Harrods sells expensive gift items. In some of the pictures Al Fayed was seen drinking the beer. "Isn't he a Muslim?" I asked one of the public relations people. This elicited an impatient shrug.

The publicity quickly sold the beer. Nine hundred and ninety-nine bottles had gone, at \$75 a pop, when I called just more than a month later. Only the one reserved as "the world's most expensive bottle of beer," priced at \$7,500, had thus far failed to find a buyer, but was awaiting one in Harrods' wine department.

The proceeds will go toward funding further academic research. What the razzmatazz perhaps obscured was the seriousness of that research.

It began in 1990 when remnants of a massive kitchen and brewery complex were found at a dig in Tell el Amarna, in the desert 200 miles south of Cairo, by a team of archaeologists



Harrods owner Mohamed Al Fayed introduces the recreated ancient Egyptian beer.

journalists. One was asking him, "Is it a lager or an ale?" Roger, always the gentleman, was trying to be patient.

That night I had a call from a friend in Montreal, "We saw you on the main evening



Dr. Samuel and a bottle of "Tutankhamun's Ale."

including researchers from Cambridge University.

Amarna was built by the Pharaoh Akhenaten and Queen Nefertiti in honor of the sun god. This was during a brief 17-year period of monotheism in

ancient Egypt. When the country returned to a plurality of deities, Akhenaten's son Tutankhamun destroyed the city. It is because the city existed for such a short time that it is of such interest. Research there provides information that can be dated far more precisely than anything from elsewhere.

The researchers called in Dr. Delwen Samuel, an archaeobotanist at Cambridge, to look at the beermaking equipment. Samuel, a Canadian who grew up in Montreal, specializes in analyzing ancient food and drink. The team also decided they would like the help of a brewery. Scottish and Newcastle became involved through one of its executives, Jim Merrington, whose son had been studying ancient graffiti.

Samuel's work suggests that in 1350 B.C. brewers were using both emmer wheat and barley, some proportions of the grain were gelatinized by heat and a technique of drum malting also may have been used. Whatever may have happened earlier, these brewers seemed not to have used bread as a starting point. It appears the mash was squeezed to produce a relatively clear wort, leaving behind spent grains that may have been used for "beer bread" or as an ingredient for further "instant beer." (Either way, Germans still talk about beer as "liquid bread.") Nor at this stage was there any evidence of dates as a flavoring on this site, or at another dig farther south at Deir el-Medina near Luxor where the material covered a wider period, from 1400 to 1200 B.C. Through the years historians have found references to a "sweet thing," perhaps

that simply meant wort. (After all, we still talk about "sweet wort.")

In Egypt, coriander and juniper may have been used as flavoring. These plants were grown at the time, but were not at either site. Peels of orangelike bitter gourds were, but they dated back only to the period A.D. 400 to 700.

Scottish and Newcastle went to considerable trouble to recreate the Pharaoh's beer, even to the extent of bringing emmer wheat seeds from Turkey, cultivating them in England and malting them in Scotland. The brewery took an educated guess and used coriander and juniper as flavorings.



At the Amarna excavation site, archaeologists uncovered a room used for dehusking emmer wheat.

I found the clear amber brew grainy, toffeeish, sweetish, spicy and surprisingly beerlike. The reconstruction of Sumerian beer a few years ago by Anchor Brewing Co. in San Francisco, Calif., was similar, albeit drier. So was a thinner neolithic Scottish brew recreated by Glenfiddich in 1987. All used modern brewing yeasts, and I think that is, indeed, the key to their beeriness.

As far as I can see, no one took seriously the influence of yeast on the flavors of beer until after World War II. Even today, several German brewers tell me their yeasts confer no flavor. I think this is nonsense. I don't think we will have a real glimpse of ancient beer until we brew on site using wild yeast. Even they will have changed, but at least the wild yeast will give us a better clue.

Meanwhile, Samuel's research poses several thoughts in my mind. One is that the "squeezing" of the wort sounds similar to a stage in the production of saké (although that uses unsprouted grain). Another is that

orange peels, coriander and juniper have remained important in the Low Countries and Scandinavia respectively. (I always imagined that the orange and coriander were introduced from the Caribbean during the colonial period.)

I have always believed that brewing spread in concentric circles from the fertile crescent of the Middle East with the cultivation of grain, giving us saké (China and Japan), "traditional" millet beers to the south (Africa) and more recognizable brews to the north and west (Europe and the Americas). The alternative is that brewing developed separately in several places. These might have included the Celtic cultures of central and western Europe, and perhaps some pre-Columbian civilizations in the Americas. Many questions remain unanswered.

Why did the Middle East cease to be suitable for the growing of grains for brewing? Why, given that hops were mentioned in relation to "strong drink" in the Talmud, were they not confirmed as an ingredient in beer until the 1100s?

We need the detail, as researched by Samuel and tested by Merrington, before we can have the big picture. Until then, I hope patient people keep chipping away.

(A paper by Delwen Samuel on her study appears in *Science*, Vol. 273, July 26, 1996, published by the American Association for the Advancement of Science).



Michael Jackson is internationally the best-known writer on beer. His *Beer Companion* (Running Press, 1993) was awarded the 1994 Glenfiddich Trophy



and the Andre Simon Award. His articles, books, documentary videos and CD-ROM introduce beer styles to countless drinkers and brewers outside their native lands.



Ancient spikelets of emmer wheat found at the site.

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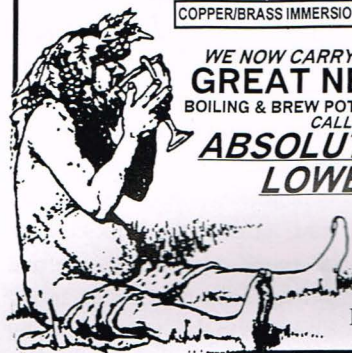
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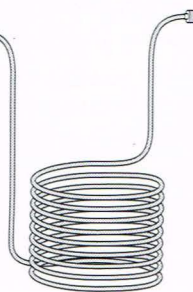


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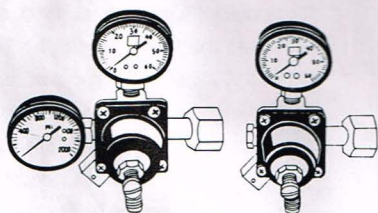
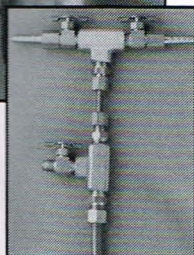
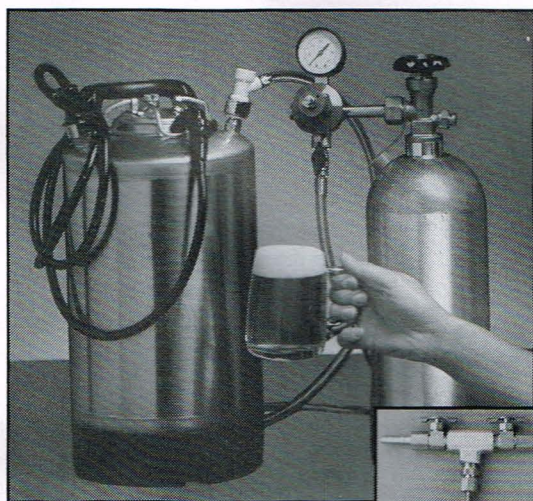
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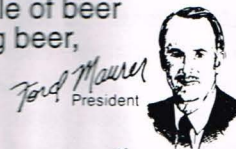
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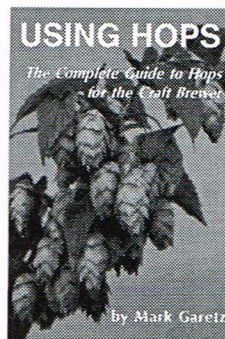
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HOMEBREW COOKING

Joseph Ascoli

A Brewer's Holiday



I remember the winter holiday season as a child — full of endless days off from school, snowdrifts that loomed like mountains, the bitter cold and harsh wind outside and delicious food enjoyed in front of a fire. Some memories seem faded, but recurring thoughts of the fabulous feasts I enjoyed do not. The winter holidays are a time for families and loved ones to gather and trade tales of holiday traffic, shopping nightmares, snow forecasts and prize-winning homebrew recipes.

The one vital link tying all holiday customs is the sharing of food and drink. We are fortunate, being creative homebrewers, that we may add a new and unexpected dimension to the holiday meal by bringing along some of our best-kept secrets and sharing them with those who will appreciate them most. Imagine the praise when you open a bottle of mead or malty barley wine with the famous family dessert.

The holiday meals of my youth were plentiful and luscious in every way. We usually invited half the neighborhood just to help us finish the meal. My mother would slave over the hot ovens for days to produce a repast that would be consumed in 30 minutes. Sometimes it hardly seems worth the effort, but the gathering of those close to us and the sharing of our labors is what holidays are all about.



Many of us do not have whole free days, especially during the holidays, to conjure up a world-class menu let alone several more to prepare it. Fortunately there are alternatives. The first step is to slip into some casual clothes, open a wheat beer or pumpkin ale and relax! After you shake off the cares of the workplace you will be ready to create and enjoy, all in the same breath!

The following menu is a collection of dishes that give a twist to the conventional

holiday dinner. The incorporation of several different beer styles reflects the flexibility of the meal itself. The winter affords a chance to clean out our cellars and enjoy the beverages we brewed in the past year.

This menu uses hard cider, mead, India pale ale, porter, lambics and spiced ales. Feel free to experiment as your own beer cellar dictates. There are no strict guidelines to follow — just have fun, have a homebrew and happy holidays.



Cider and Mead Steamed Mussels

Makes one serving

- 1 tbsp unsalted butter (14.8 mL)
- 1 1/2 lb mussels*, cleaned and rinsed (680 g)
- 1 tbsp finely chopped shallots (15 g)
- 3 sprigs fresh thyme
- 1 clove minced garlic
- 1 bay leaf
- 4 oz hard cider or sweet sparkling mead, refrigerator temperature (118 mL)
- 6 oz heavy cream (177 mL)
- dash of salt

8 to 9 cracked peppercorns

(1) Place shallots, garlic, thyme, bay leaf, salt, pepper and butter in a shallow pot over medium heat. Cook until shallots become translucent, being careful not to burn the garlic or it will have a bitter taste.

(2) Add the mussels, cider or mead and cream, cover tightly and steam for six to eight minutes.

(3) Remove cover and check mussels to see that all are open and cooked. Discard any that have not opened.

(4) Place contents in a large heated bowl and pour liquid over all.

(5) Have a large French baguette handy, you will want to use it to sop up all the liquid!

*Mussels can be purchased year-round in markets virtually everywhere either fresh or flash frozen, which is closer to fresh than you might think. To clean, soak one hour in cold water with salt, pepper and one heaping tablespoon of cornmeal.

Beer Pairing:

Cider Jack Hard Cider, sparkling mead or Samuel Adams Boston Lager

Spinach Salad with Chevre and IPA Walnut Dressing

Makes two servings

- 12 oz fresh spinach, stemmed and rinsed (355 g)
- 2 oz sliced red onion (59 g)
- 6 oz chevre cheese (177 g)

Dressing

- 1/2 cup toasted walnut pieces (64 g)
- 1/4 stick cinnamon (14 g)
- 1/8 tsp ground nutmeg (1 g)
- 1/8 tsp ground clove (1 g)
- 3 oz honey (88.7 mL)
- 3 tbsp brown sugar (34.5 g)
- 5 oz India pale ale, refrigerator temperature (148 mL)
- 3 tbsp canola oil (44.4 mL)
- 1 tsp vanilla (5 mL)

(1) Place the walnuts, cinnamon stick and spices in a dry sauté pan over medium heat and toss quickly (if they burn they will taste bitter) until the walnuts take on a light, crisp toasted appearance. Remove the cinnamon stick and cool the walnut mixture.

(2) Place the honey, brown sugar and cinnamon stick (from above) in a small sauté pan over medium heat. Let the sugars melt and start to simmer gently.

(3) Add the IPA and simmer for one or two minutes.

(4) Drizzle in the canola oil in a thin stream while stirring until a loose emulsion forms, add vanilla. This dressing is served warm and should be very thin in consistency.

(5) Arrange the spinach leaves in a serving bowl and top with the sliced onions and chevre cheese. Pour the dressing over all and serve. The heat of the dressing will partially wilt the spinach and coat the chevre pieces, which is the desired effect.

Beer Pairing:

India pale ale or nut brown ale

Stuffed Long Island Duckling

Serves 2 to 4

- 5 to 6 lb Long Island duckling washed, fat trimmed, giblets removed (2.5 kg)

Marinade

- 8 oz clover honey (236.6 mL)
- 6 oz raspberry or strawberry lambic at room temperature (177 mL)
- 1 tbsp lavender leaves (2 g)
- 3 crushed juniper berries

Stuffing

- 1 tbsp unsalted butter (14.8 mL)
- 2 strips smoked bacon (85 g)
- 1 large Vidalia or Spanish onion, coarsely chopped
- 1 Granny Smith apple, coarsely chopped
- 2 tbsp shallot, finely diced (30 g)
- 3 cloves garlic, finely diced
- 4 oz pine nuts toasted in a 350-degree-F (177-degree-C) oven until lightly browned (118 g)
- 1 tsp dried sage (4 g)
- 1 tsp dried tarragon (4 g)
- 1 tsp dried thyme (4 g)
- 4 oz robust porter, room temperature (118 mL)
- 8 oz chicken, duck or vegetable stock (236.6 mL)
- 3 to 4 cups cubed stale country bread salt and pepper to taste

(1) Preheat oven to 425 degrees F (218 degrees C). Remove the giblet packet from inside the body cavity of the duckling. Remove any excess fat and reserve for later use. Wash the duck thoroughly inside and out and pat dry. Refrigerate while marinade and stuffing are prepared.

(2) To prepare marinade heat the honey and lambic and simmer gently in a heavy saucepan. Add lavender and juniper berries and stir gently, simmer for one to two minutes, turn off heat and let steep for five to six minutes, set aside.

(3) To prepare stuffing heat the butter over medium heat in a large saucepan. Coarsely chop the bacon and add to the butter. At this point, you are rendering some of the smoked bacon fat, which will enhance the flavor of the stuffing. Add shallot and garlic, cook until translucent. Add onion and apple and cook until softened but not mushy. Finely chop the giblets (liver and heart) and sauté until tender. Toss in the pine nuts. Add spices and stir one minute. Add porter and stock and reduce for one minute. Pour entire mixture over bread cubes and season with salt and pepper. Toss mixture and check for consistency; it should be moist but not overly so.

(4) Remove duck from the refrigerator and coat liberally with the marinade. Fill body cavity with the stuffing mixture, place duck in the oven and roast for 20 minutes at 425 degrees F (218 degrees C). Reduce heat to 275 degrees F (135 degrees C) and roast for roughly one hour and 10 minutes or until medium rare on a meat thermometer (140 degrees F or 60 degrees C*). You may wish to pour off some of the fat and save it for other uses.

(5) Remove duck from oven. The skin should be an even golden or light mahogany color. Let the duck rest for 10 minutes before carving and serving.

(6) Serve with steamed haricot verts (French green beans) and gingered sweet potatoes.

*Current health guidelines suggest cooking all poultry to 165 degrees F (74 degrees C) to make sure all *salmonella* bacteria is destroyed. The final temperature when the duckling is removed from the oven is up to individual discretion and cooking practices.

Beer Pairing:

Bass Ale or India Pale Ale

Apple Galette with Spiced Caramel Sauce

Makes 2 galettes (8 servings)

Galette Dough*

- 2 cups all-purpose flour (340 g)
- 2 tbsp granulated sugar (28.4 g)
- 1 tsp salt (4.7 g)
- 6 oz unsalted cold butter (170 g)
- 2 oz shortening at room temperature (50 g)
- 4 oz ice water (118 mL)

Filling

- 8 Granny Smith apples
- 4 oz unsalted cold butter (113.4 g)
- 1/3 cup granulated sugar (75 g)
- 2 tsp ground cinnamon (5 g)

Spiced Caramel Sauce

- 1 cup granulated sugar (227 g)
- 3 oz water (88.7 mL)
- 4 oz spiced ale, room temperature (118 mL)
- 1 oz bourbon (29.6 mL)
- 6 oz heavy cream (177.4 mL)

(1) To prepare dough place the flour, sugar and salt in the bowl of a food processor. Add the cold butter pieces and pulse until the texture resembles coarse cornmeal.

(2) Add shortening and pulse a few times more.

(3) Add ice water and pulse until a large ball forms. Do not overbeat because the dough will become tough.

(4) Remove from bowl, knead by hand for a few strokes, wrap in plastic wrap and refrigerate for at least one hour.

(5) To prepare filling peel, core and slice the apples into fairly large slices and set aside in lemon water to retard browning.

(6) Mix the sugar and cinnamon and set aside. The butter will be used in the final assembly.

(7) To prepare sauce place sugar in a heavy-bottomed saucepan and set over medium heat. Add water and allow it to soak into all of the sugar.

(8) The sauce will soon begin to simmer and the sugar will dissolve. At this

point it is important that no crystals begin to form on the sides of the pan or in the mixture itself. To avoid this, use a small brush dipped in water and gently wash down the sides of the pan every few minutes. This will help dissolve the sugar crystals on the sides of the pan so the entire sauce won't harden. Placing a cover on the pan will help as well.

(9) Check sauce every few minutes to see if the color of the mixture changes to a light caramel hue. When this happens, swirl the pan to mix evenly and remove from heat. It will continue to color even after removed from heat, so the earlier you catch it the better.

(10) Add the ale, bourbon and heavy cream. The mixture will boil violently for a moment but keep stirring and it will subside. Place on the heat again and simmer until all is dissolved and a thick caramel sauce is achieved.

(11) To assemble galette remove the dough from the refrigerator and roll out on parchment paper that has been floured until a one-quarter-inch thick by 12-inch circle is formed. (The recipe makes two galettes).

Place some of the cinnamon sugar mix on the dough and arrange the apple slices in the middle. Dot with cold butter, more sugar mix and fold up the edges until a small outer ring is formed. The edges need only come up an inch or so; you want most of the filling to be exposed.

Place galette with parchment paper on a baking sheet in a 400- to 425-degree F (204- to 218-degree-C) oven for 20 to 25 minutes or until the apples are softened and the dough is golden brown. Remove and cool slightly before cutting.

Serve a wedge of galette over the warmed caramel sauce and top with a scoop of homemade vanilla ice cream.

*A galette is dough that is formed into a flat and round (and often open) shape and baked. It can contain sweet or savory fillings.

Beer Pairing:

Anchor Christmas Ale, pumpkin ale or barley wine

Joseph Ascoli, a homebrewer for three years, is the executive chef of the 122-year-old Camden Harbour Inn in Camden, Maine.
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Onion Tote

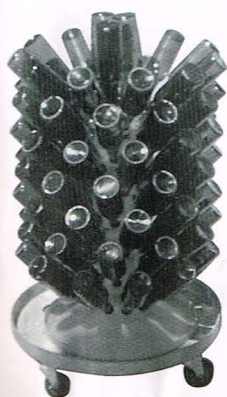


and keeps the glass in one handy collection should you drop it.

Ted Pilkons, The Tuckasee Homebrewers, Clarksville, Tenn.

The standard five- or six-gallon carboy fits neatly into a 50-pound onion bag often available free from restaurants. The bag makes carboys easier to carry when full

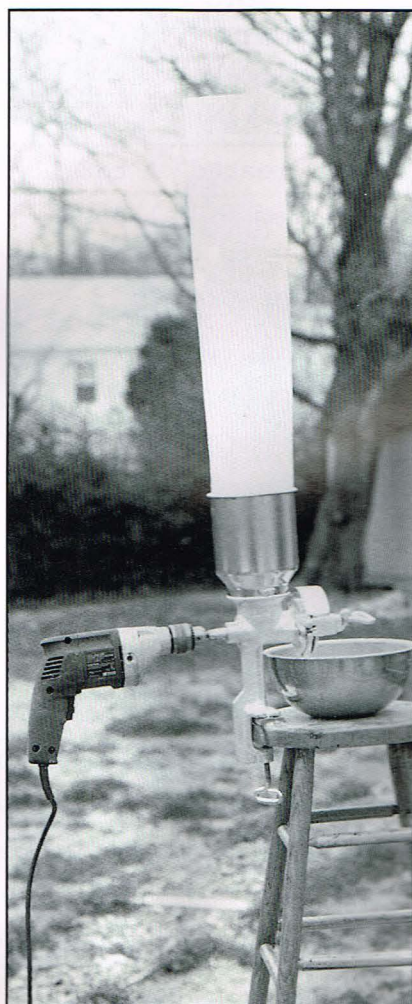
Bottle Tree on Wheels



dolly for drainage. You also can use the dolly to move your carboy.

Jeffrey L. Lee, Sons O' Beaches Brewers, Hermosa Beach, Calif.

An easy way to move a full bottle tree is to use a drum dolly with three-inch casters. Place the bottle tree on the dolly and you are ready to roll. Because I clean my bottles outside the house, I have drilled holes in the bottom of the bottle tree and drum

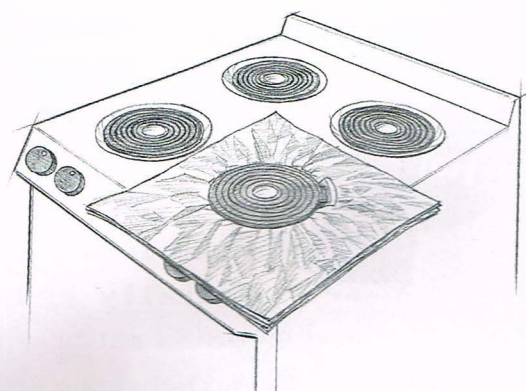


Hopper Helper

A single piece of construction paper will extend the hopper capacity of a Corona mill to 12 pounds, allowing for one continuous crush.

Ted Pilkons, The Tuckasee Homebrewers, Clarksville, Tenn.

Heat Shield



To prevent damage to electric stoves from heat buildup during prolonged wort boils, cover the burner area and surrounding surfaces with about four layers of heavy duty aluminum foil. Be sure the foil does not contact the burner's electrical connections. The removable foil makes for easy cleanup.

Dan Hughes, Gaithersburg, Md.

Carboy Drying Rack

A large, tall pot works well as a drying rack for five- and six-gallon carboys. Make sure the assembly is in a place where it won't be bumped.

Ted Pilkons, The Tuckasee Homebrewers, Clarksville, Tenn.

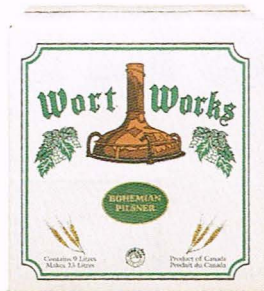


If you have a quick tip or a tested gadget to share, send a brief description and photos to Tips and Gadgets, PO Box 1679, Boulder, CO 80306-1679.



This is Sean. He's our beer guy.

Matter of fact, around Brew King, we call him "The Beer Guy". After all, he knows a thing or two about beer. And as you can see, he's pretty happy right now. Why? Because after months of self-imposed exile in Brew King's (windowless) brewing lab, Sean has emerged with Wort Works, an



all-malt brewing kit even by Sean's Sean belongs to that brewing purists - commercial brews and for their own brewing Sean would never cut

standards. You see, elite group of home the ones that scoff at most insist on choice natural ingredients masterpieces. With Wort Works,



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ingredients used. Sean's no dummy. He made Wort Works with his fellow homebrewers in mind, but he also made sure that its user friendly, no-boil method would be perfect for beginners too. Keep Sean happy. Make his Mom proud. Try Wort Works. The results will make you (and your friends) happy too.



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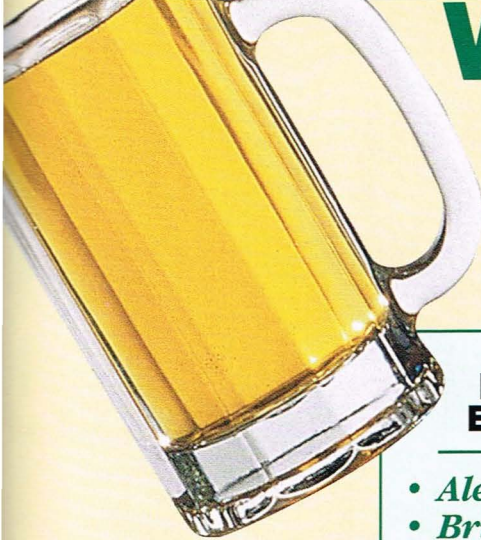
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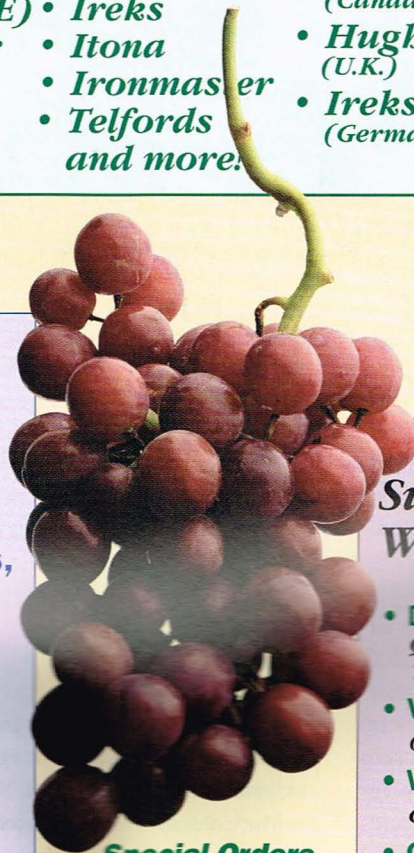
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Inside Berlin's Own Beer

By Dennis Davison

“Ich bin ein Berliner” (I am a Berliner) was uttered more than three decades ago by President John F. Kennedy. For more than 30 years I understood the words in the context Kennedy spoke them. But since being introduced to Berliner Weisse five years ago I can truly say, “Ich liebe Berliner” (I love Berliner).

In the last few decades, the terms *weisse* and *weizen* have been used interchangeably to refer to the Bavarian-style wheat beers. Around the turn of the 20th century they meant two different varieties of beer. *Weisse* referred to the northern style, predominantly the Berliner style, and *weizen* referred to the southern or Bavarian style. At that time *weizen* was almost left to extinction and the *weisse* style dominated. Today the roles have reversed and Berliner *weisse* has almost disappeared.

Berliner *weisse* is a refreshingly light beer, low in alcohol and bitterness, light in body and traditionally acidic.

There are only two commercial examples of Berliner *weisse*. Like *Kölsch* in Cologne and the surrounding county, Berliner *weisse* has to be brewed in Berlin to use the name of the city, according to German law. If the style is brewed elsewhere it has to be referred to as Berliner-style *weisse*. The two commercial examples are Schultheiss Berliner *Weisse*, formerly produced in East Berlin and since reunification in the West, and Berliner Kindl.

Not all *weisse* beers are Berliners. Several micros and pubs are producing *weisse* beers either in the form of honey *weisse* or some sort of berry *weisse*, but the lactic character is missing in most of these beers. The Vermont Pub and Brewery in Burlington,

Rotterdam Brewpub in Toronto, Ont., and Widmer in Portland, Ore., have produced *weisse* beers with some lactic character. Leinenkugel of Chippewa Falls, Wis., produced a berry *weisse* this year with a light lactic character. Though the initial flavor is sweet it ends with a light lactic finish.

In Germany, Haake-Beck Brewery produces a Bremer *Weisse* modeled after Berliner. This beer is slightly more bitter at 12 IBUs and has only about half the level of lactic character as its Berliner counterpart. All other aspects of this beer fit the description of a Berliner *weisse*.

The history of Berliner *weisse* is vague. Early records indicate this beer had a strong following in Berlin as early as 1680, when special German tax laws began recording various beer styles. By looking at how the beer was brewed around the turn of the cen-

“...Berliner *weisse* has to be brewed in Berlin to

PHOTO BY VICKI HOPEWELL

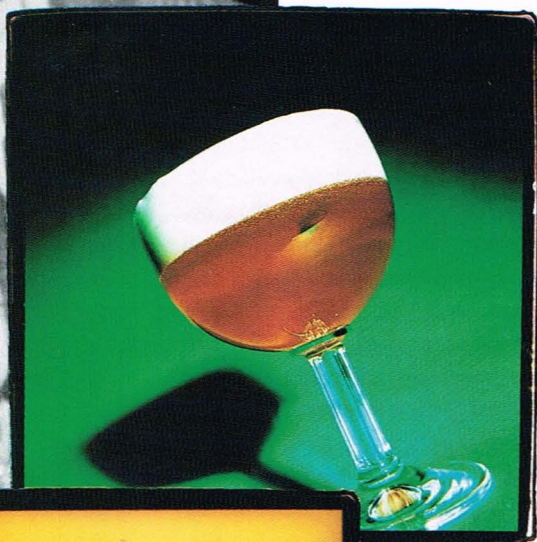
of the clove or banana aromas and flavors of its cousin, hefeweizen from Bavaria.

Fresh weisse should have an intense lactic aroma and immense lactic flavor. With the low hop rate and low starting gravities, there should not be any hop or malt aromas. Malt flavor should almost be nonexistent, but a slight fruity character is expected. As Berliner weisse ages, some of the lactic character gives way to a softer fruitiness similar to ripe apples or pears. Bottled versions often oxidize causing wet cardboard-like to sherrylike aromas. The sherrylike aromas are appropriate for weissebiers. The flavor of oxidized weisse has a softer fruitiness and not as sharp a lactic character. The lactic flavors still dominate, but some of the harshness will have mellowed and rounded. These rounded lactic flavors coupled with lots of pear or apple flavors make a Berliner comparable to a fine Champagne.

Berliner-style weisse is considered a schankbier by German tax law because it has an original starting gravity range of 1.028 to 1.032 (7 to 8 °Plato). Schankbiers must have original gravities equal to or lower than 1.032 (8 °Plato). The hopping rates are between 4 and 8 IBUs, not enough to be noticeable. Alcohol contents range from 2.2 to 2.7 percent by volume. Berliner weisse is the original light beer, with lower alcohol content and lighter malt and hop flavors, predating American light lagers by more than 300 years. With finishing gravities around 1.004 (1 °Plato), there is little residual sugar.

The pH levels of Berliner weisse can be as low as 3.0 or as high as 3.2, making this a rather acidic beer. By comparison, the pH of Belgian lambics range from 3.2 to 3.9. Most of this acid is lactic, created by the *Lactobacillus delbrückii* bacteria strain. Some lactic character would have been found in most ales prior to the end of the 19th century when yeast was isolated and became better understood.

Dissolved CO₂ levels can be as high as 4.1 volumes, not unlike weizen beers of the south, while German lagers range from 2.2 to 2.8 volumes. This makes a Berliner highly effervescent, almost Champagnelike.



tury, one could make the following assumption about Berliner weisse's accidental development: a container of malt might have been soaked and forgotten for several weeks. Upon rediscovering his mash, the brewer, fearing all was ruined, sampled it. This sampling proved him wrong and thus Berliner weisse was born.

Not until 1809 when Napoleon's troops called Berliner weiss the "Champagne of the North" did it become a dominating and desired style in Europe. A Berliner's wonderful bouquet and lactic bite can be reminiscent of fine wines produced in Reims and Epernay.

As German immigrants came to the United States in the later half of the 19th century they brought a thirst for the beers they were accustomed to in their homeland. Some of these immigrants started their own

breweries, several dedicated to Berliner weisse. Two breweries were Berlin Weisse Brewing Co. and Berlin Imperial Weisse Brewing Co. the latter located in St. Louis, Mo., but both closed as a result of Prohibition. The Berlin Weisse Brewing Co., located in La Crosse, Wis., had a short-lived existence, only producing between 1897 and 1906.

Berliner Basics

Berliner weisse is a refreshing, extremely tart wheat beer. It is similar to Belgian gueuze or lambic in lactic flavor, but with a lighter body and not as complex a flavor profile. Berliners' flavors improve with age as the lactic acid esterifies. Two or more years in the bottle will greatly enhance the desired fruitiness. This style does not contain any

use the name of the city, according to German law."



Berliners ran the gamut of color during their early years. Poor malting techniques and deep-colored malts were the standard. Lighter Pilsener-style malts did not gain popularity in Germany until the 1800s, when lighter colored Pilsener-style beers

were first brewed in Czechoslovakia. With the inferior malting and brewing techniques of the 17th century, a Berliner's color could have been as deep as 10 SRM, taking into account the low specific gravity. In the 17th century 10 SRM would still have been considered a light-colored beer by German standards. The light color, coupled with the sour, refreshing flavor and extreme carbonation prompted Napoleon's troops to call Berliner weisse the "Champagne of the North."

Today's weisse is extremely pale to light straw — 2 to 4 SRM. This indicates the base barley malt should be a good-quality Pilsener malt. Pale ale malts will lead to a deeper color than desired.

The head of a Berliner, like other German wheat-style beers, should be gigantic if the beer is poured into the center of the glass. The head is a result of the proteins left by the wheat malt and the higher than normal carbonation levels associated with German wheat beers. Because Berliners lack dextrins, the head will be short-lived with no lacing on the glass.

Berliner weisse is an ideal beer style for summer months with its reduced alcohol levels and sharp lactic flavors. With the addition of sweet-flavored syrup this beer is a great replacement for soda water around the pool or lake on those 90-degree days.

Water in Berlin has medium hardness. Kindl Brewery does soften its water prior to brewing, but the exact levels of hardness and mineral content are unavailable. I suggest adjusting the brewing water to medium to slightly hard levels, between 200 and 300 ppm of total hardness.

Berliners are brewed with as much as 70 percent wheat malt but have contained as little as 30 percent. Today the grist comprises 50 percent malted wheat and 50 percent malted barley. No cara malts are used because it is meant to be light and refreshing with no body.

Schultheiss has been using Hallertauer hop extracts for bittering. Even with a bittering range of 4 to 8 IBUs, quality and quantity of hops will make a difference. Hops do add a slight color to beer. If large quantities of low-alpha-acid hops are used, the color could deepen beyond the acceptable range for the style. Hop quality also is important. With reduced malt flavors, poor-quality hops could highlight a multitude of off-flavors. Traditional German hops are appropriate for the style: Hallertauer, Tettnanger and Spalt. Some American-grown hops could also be used, Liberty, Perle and American Hallertauer, to name a few.

Lactic Bacteria By James Liddil

For the purpose of this article we will only discuss *Lactobacillus delbrückii*. *Lactobacillus delbrückii* is one of many species of bacteria of the genus *Lactobacillus*. This species is rod shaped with a size varying from 0.5 to 0.8 microns in width and 2 to 9 microns in length. Using the gram stain method (named after the Danish physician who developed it) this bacteria retains the violet dye and is thus classified as gram-positive. This bacteria does not sporulate as do some other bacteria and fungus when faced with unfavorable growing conditions.

L. delbrückii follows a fermentative metabolic pathway and is classified as homofermentative. This means the pathway it follows results in the formation of two moles of lactic acid being formed from every mole of hexose (6 carbon sugar) consumed. For the record, there are other lactic acid bacteria that follow a heterofermentative pathway and produce CO₂, ethanol (or acetic acid) along with lactic acid, but these bacteria are irrelevant to this discussion.

L. delbrückii are microaerophilic which means they will grow in air but will grow much better under conditions of reduced oxygen tension. Also they tend to grow best at 113 degrees F (45 degrees C) and will even grow at temperatures as high as 125 degrees F (52 degrees C). The bacteria have complex nutritional requirements including a need for carbohydrates, amino acids, peptides and vitamins, particularly pantothenic acid and niacin. They will ferment fructose, glucose, mannose and sucrose with some strains also fermenting maltose. A pH of between 5.2 and 6.2 provides for optimal growth, with lower and higher pHs tending to inhibit growth. Finally, *L. delbrückii* are hop sensitive and their growth is inhibited when isoalpha acid levels are above 20 IBUs.

Lactobacilli Sources

Yeast Culture Kit Co.
1308 W. Madison
Ann Arbor, MI 48103
(800) 742-2110
YCKCo@aol.com

<http://oeonline.com/~pbabcock/yckcotbl.html>

Aeonbrau
256 Cherokee Ridge
Athens, GA 30606
(706) 548-7051

1206-1 *Lactobacillus* #1
1206-2 *Lactobacillus* #2 (Ypsilanti isolate)

Brewing a Berliner

Several methods can be used to brew a Berliner weisse, each producing a well-balanced beer. In the more traditional method the unboiled wort is inoculated with a mixture of *Brettanomyces* ale yeast and a heterofermentative lactic acid bacteria. Once

Shank My Bier

Ingredients for 5 gal (19 L)

- 3 1/3 lb Munton and Fison wheat malt extract (1.5 kg)
- 2 lb two-row Pilsener malt (0.9 kg)
- 1/2 oz Hallertauer Hersbrucker whole hops, 3.6% alpha acid (14 g) (45 min.)
- Yeast Lab A04 German ale
- 1 cup corn sugar (237 mL) (to prime)
- Original specific gravity: 1.030
- Final specific gravity: 1.006
- IBUs: 7

This will be a fairly easy recipe for extract brewers and uses a sour mash technique. Begin by preparing a starter for the liquid yeast three days before you plan to brew. The day before, crush the two pounds of two-row malt and place in a grain bag. Cover with one gallon of 95-degree-F (35-degree-C) water. Let steep up to 24 hours. To maintain the temperature, place in a gas oven with a pilot light or use a small picnic cooler. Remove the grain bag and run hot water through it to extract some of the trapped sugars. Place all of the liquid on the stove and bring to a boil. Add the wheat malt extract and, once the boil resumes, add the Hersbrucker hops. Boil 45 minutes. Cool and add the wort to a primary fermenter. Bring the volume to 5 1/2 gallons (20.8 L) with additional water that has been preboiled and cooled. Pitch yeast when the temperature is around 70 degrees F (21 degrees C). Ferment four days before racking to secondary. Age in secondary up to two weeks.

Though this beer may not have a strong enough lactic character for a Berliner weisse, it will prove to be a very refreshing beer. With the lactic base, you can now dose the beer, if desired, with 88 percent lactic acid to increase the bite. No more than five milliliters would be needed. Bottle with corn sugar or fresh krausen. Allow at least six weeks for the beer to mature. Save some bottles for a year to enjoy the more complex fruity nature this style can bring.

fermented, this beer is primed with gyle and bottled. Secondary fermentation takes place in the bottle for up to two years. Schultheiss Berliner Weisse originally was produced in this fashion.

Not boiling the wort seems strange to homebrewers, but without modern knowledge of yeast and bacteria, unboiled wort was more susceptible to a lactic acid fermentation. The other feature considered odd is the use of hops in the mash. Hops were boiled with the mash in a decoction to extract their bittering qualities. These hops in the mash also provided a bit of filter material to the predominantly wheat grist.

With the increased popularity of Berliner weisse in Germany, Schultheiss has modified their brewing procedures to expedite the process. Today the beer is boiled just enough to settle unwanted solids and a mixture of multistain ale yeast and *Lactobacillus delbrückii* are used. Schultheiss adds a percentage of three- to six-month-old Berliner to the fermenter. The beer is fermented at 68 to 77 degrees F (20 to 25 degrees C) for four days then aged in secondary from three to six days at 59 to 77 degrees F (15 to 25 degrees C). The beer is then krausened and bottle conditioned for up to four weeks before release, but never pasteurized.

Berliner Kindl uses a nontraditional method. The initial wort is divided in half and each is fermented separately, one with a standard ale yeast, *Saccharomyces cerevisiae*, the other with a homofermentative

strain of *Lactobacillus delbrückii*. These worts are fermented at 59 to 77 degrees F (15 to 25 degrees C) for at least one week. The two batches are then blended in the secondary and aged for only a few months at 41 to 50 degrees F (5 to 10 degrees C). The beer is bottled with fresh krausen and the original *Saccharomyces cerevisiae* yeast and allowed to carbonate. This method produces fewer esters compared to the traditional method, and less lactic intensity. Some of this can be attributed to the somewhat cooler primary temperatures and cold stabilization in the secondary.

Proper sanitation in the brewery is always a necessity, but extra care is required if you plan to use a *Lactobacillus* strain. It's a good idea to dedicate one set of brewing equipment — fermenters, stoppers, airlocks, siphon hose, racking cane, kegs and anything else that may come into contact with the finished product — for lactic beers. This will reduce your risk of every beer you make tasting like a Berliner.

As homebrewers, most of us have tried some weird things to produce unique beers and sour mashing certainly qualifies as one of them. Sour mashing is accomplished by holding the mash at low temperatures (95 to 105 degrees F or 35 to 40 degrees C) for an extended period. This process, because

Krausen

Krausening is the art of priming beer using a portion of unfermented wort (gyle). Several methods can be used. The easiest for the homebrewer is to collect extra wort when the beer is produced and save it in sanitized bottles in the refrigerator until bottling time. Gyle must be collected before any yeast is pitched. The alternate method is to brew a small batch of beer the same day you plan to bottle and use that as the gyle.

$$\text{Quarts of Gyle} = \frac{\text{priming rate} \times \text{gallons of wort}}{(\text{specific gravity of gyle} - 1) \times 1000}$$

The priming value for most beer styles is 12. Berliners with a higher level of dissolved CO₂ have a rate of 16. The above example would look like this:

$$\text{Quarts of Gyle} = \frac{16 \times 5}{(1.030 - 1) \times 1000} = \frac{80}{0.030 \times 1000} = \frac{80}{30}$$

or 2.67 quarts of gyle to carbonate five gallons (19 L) of Berliner.



of the *Reinheitsgebot*, is still used by German breweries to acidify mashes rather than using food-grade lactic or phosphoric acid. Acidification of the mash with sour mashing produces a wort with simple sugars. These simple sugars are completely fermentable, resulting in a very light-bodied beer appropriate for the Berliner style. The sour mash method enables homebrewers to brew a sour beer style without the risk of infecting the whole brewery with *Lactobacillus*. Sour mashing will produce lactic acid in the sweet wort, but once this wort is boiled any lactic acid bacteria will be killed and the acid level stabilized.

Using Lactic Bacteria

You will first need to generate a *Lactobacillus* starter using MRS (DeMan, Rigosa and Sharpe) media, available from lactic culture suppliers. This media, similar to sterile wort, provides the required nutrients, vitamins and amino acids to promote healthy growth for lactic cultures. Incubation tem-

perature for the culture requires heat in excess of 86 degrees F (30 degrees C). This is not difficult to maintain. A 40-watt light bulb in a covered box will maintain the temperature. Allow the bulb to hang freely, never letting it contact any surfaces of the box. If the box gets too warm, vent some heat to adjust the temperature. Or place the culture on top of a refrigerator or other appliance that stays warm.

Don't be alarmed if you don't see gas coming from the airlock. Homofermentative yeasts will not produce carbon dioxide, while heterofermentative cultures will. The culture should grow as a white sediment, not the familiar cream-colored sediment of *Saccharomyces* yeasts. After a week in MRS media it is time to acclimate the *Lactobacillus* to wort. This sterile wort should be produced as you would any starter: three or four tablespoons (14.8 to 19.7 mL) of dry malt in eight ounces (237 mL) of water. Do not add hops to the starter because *Lactobacilli* are sensitive to hops and will not perform well in their presence. Rapid growth can be accomplished if this starter is held at 86 degrees F (30 degrees C). After four days you are ready to begin brewing. Depending on the fermentation method you plan to use, you should either begin a starter of *Saccharomyces* yeast now, or you will have already created one when you made the last *Lactobacillus* starter. Preferred ale yeast strains are Wyeast No. 1007 German or No. 2565 Kölsch, Yeast Lab A06 Düsseldorf ale, Yeast Culture Kit Co. No. 1200-A04 German ale or No. 1200-A37 altbier or Brewtek CL-400 Old German ale.

Ich Liebe Berliner

Ingredients for 5 gal (19 L)

- 2 1/2 lb Durst two-row barley (1.13 kg)
- 4 lb Durst wheat malt (1.81 kg)

or

- 2 lb Northwestern dry wheat malt extract (0.91 kg)
- 2 lb Munton and Fison light dry malt extract (0.91 kg)

- 1/2 oz Hallertauer Hersbrucker whole hops, 3.4% alpha acid (14 g) (60 min.)

Lactobacillus culture

Brewtek CL-400 Old German ale

- 1 cup corn sugar (237 mL) (to prime)

- Original specific gravity: 1.032
- Final specific gravity: 1.004
- IBUs: 6

Start *Lactobacillus* culture ahead. On brew day crush grains and add 1 1/2 gallons (5.7 L) of 130-degree-F (54-degree-C) water and allow temperature to stabilize at 122 degrees F (50 degrees C) for 20 minutes. Add boiling water to raise temperature to 152 degrees F (67 degrees C). Hold for 30 minutes or until starch conversion. Raise to 165 degrees F (74 degrees C), then sparge and lauter to collect 6 1/2 gallons (24.6 L).

Boil 60 minutes, chill to 90 degrees F (32 degrees C) and pitch the *Lactobacillus* culture. Ferment between 75 and 85 degrees F (24 and 29 degrees C). Begin a starter for the ale yeast. After four or five days allow the fermenter to cool to cellar temperatures and add ale yeast. Ferment for another five days in primary and rack to secondary. Leave in secondary at least eight weeks and bottle with corn sugar or fresh krausen.

Beer Profile Comparisons

	Berliner weisse	Lambic	American lager
Lactic acid (mg/L)	3137-5549	492-13446	40-150
Acetic acid (mg/L)	122-867	530-3944	55-145
pH	3.0-3.2	3.2-3.9	3.8-4.7
Diacetyl (mg/L)	0.01-0.02	45	20-200
Ethyl acetate (mg/L)	3.8-33.9	12.2-539.8	8.0-23.0
Dimethyl sulfide (mg/L)	1	100	59-106
Alcohol by volume	2.8-3.4	5.0-7.0	2.6-5.6
Original gravity	1.028-1.032	1.044-1.072	1.024-1.056
Final gravity	1.002-1.006	1.000-1.016	1.002-1.014

Berliner Splits

Ingredients for 5 gal (19 L)

- 3 lb Durst two-row barley (1.36 kg)
- 3 lb Durst wheat malt (1.36 kg)
- 2 oz Hallertauer Hersbrucker whole hops, 3.4% alpha acid (57 g)
- Lactobacillus* culture
- Wyeast No. 1007 German ale liquid yeast culture
- 1 cup corn sugar (237 mL) (to prime)
- Original specific gravity: 1.030
- Final specific gravity: 1.004
- IBUs: 4

Plan your starters ahead. On brew day crush grain, add 1 1/2 gallons (5.7 L) of 130-degree-F (54-degree-C) water and hold mash at 122 degrees F (50 degrees C) for 20 minutes. Raise the temperature to 150 degrees F (66 degrees C) with the addition of boiling water. Boil the hops in this water for 15 minutes before adding it to the mash. Stir the mash gently to incorporate the hops. Hold at 150 degrees F (66 degrees C) for 30 minutes or until starch conversion. Again, increase the mash temperature by adding boiling water to 165 degrees F (74 degrees C), then sparge and lauter. Collect 5 1/2 gallons (20.8 L) of wort.

Bring the sweet wort to a boil, turn off the heat and chill to 90 degrees F (32 degrees C). Siphon half the volume into one fermenter and pitch with the *Lactobacillus* culture. Chill the remainder in the kettle to 65 degrees F (18 degrees C), siphon into a second fermenter and pitch the ale yeast. Keep the *Lactobacillus* fermenter warm, wrapped in a blanket at 75 to 85 degrees F (24 to 30 degrees C). Keep the ale yeast fermenter between 65 and 70 degrees F (18 to 21 degrees C).

After four to six days rack both fermenters into one secondary and allow to age for eight weeks before bottling. Bottle with corn sugar or fresh kraeusen. Allow four weeks in the bottle before sampling. Save a few bottles to try the following year.

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Dennis Davison is president of the Beer Judge Certification Program. He produces the Homebrew Color Guide and works at the Purple Foot in Milwaukee, Wis. A homebrewer for five years and judge for four, he is a fan of Belgian-style beers. He won a gold medal in the AHA 1996 National Homebrew Competition for his Berliner weisse.

Gimme a straw

Serving Berliners

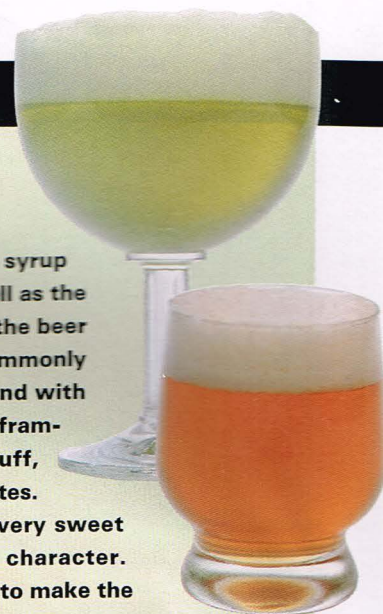
Like a lemonade made four times its recommended strength, Berliners can be painfully sour without the addition of something sweet. Weisse traditionally is served with a straw and a shot of syrup called a schuss. These syrups color the beer as well as the head because they are added to the glass before the beer is poured. When ordering a Berliner, bartenders commonly ask, "red or green?" The red is raspberry syrup and with its addition the flavor profile resembles Belgian framboise. The green is the herbal essence of woodruff, fragrant with hay, lemon grass and cough-drop notes.

With the addition of syrups Berliners have a very sweet flavor up front, giving way to the strong lactic character. Syrups are considered essential by most Berliners to make the weisse more palatable.

Flavoring weisse is left up to your imagination.

Kindl Brewery produces a booklet of recipes and serving suggestions, one of which is "Buck's Fizz" containing fresh orange juice. Hofbräu throughout Berlin have a vast assortment of syrups, juices and schnapps for addition to weisse beers.

Several types of glasses are used to serve Berliners. Jackson describes the molle as a short tumbler similar to the type used for Old Fashioneds and the kneipe as an oversized Champagne saucer or goblet as two examples. The glass is nearly twice as thick as our domestic pint glasses, an interesting contrast for the light delicate flavors associated with this beer.

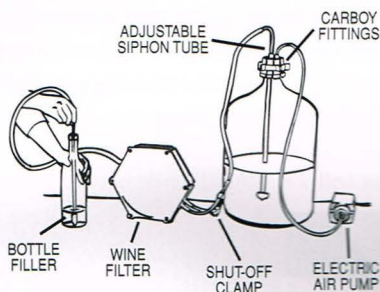


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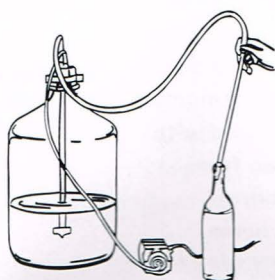
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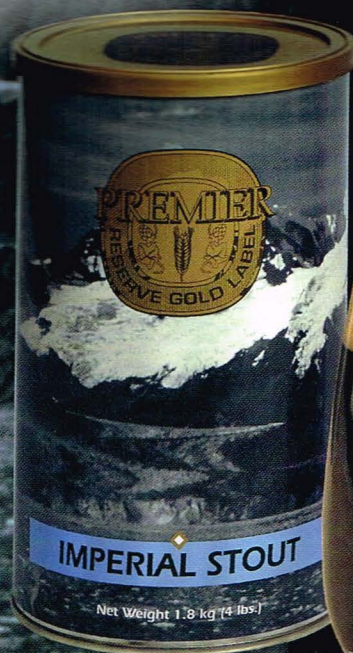
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UNLOCK THE

Old ale has been around as a style for a long time, yet many brewers know little about it. Furthermore, good commercial examples are hard to come by in the

SECRETS OF

United States. But in Britain, where many breweries include an old ale in their lineup, this style provides a lot of variety and interest to the beer scene.

OLD ALE



BY
RAY DANIELS

T. MCNERNE



THEAKSTON'S *Old Peculier*

A dark and vinous old ale from Theakston's Masham brewery in North Yorkshire. Toffee

Ingredients for 6 U.S. gal (23 L)

In the mash tun

- 10 lb pale malt (4,500 g) (72%)
- 1 2/5 lb crystal malt (620 g) (10%)
- 1/3 lb black malt (120 g) (2%)

(ALL-GRAIN & EXTRACT VERSIONS)

In the copper

- 1 lb maltose syrup or corn syrup (500 g) (8%)
- 1 lb invert cane sugar or standard cane sugar (500 g) (8%)
- 1 oz Challenger hops (28 g) (120 min.)
- 1 1/5 oz Fuggles hops (35 g) (120 min.)
- 2/5 oz Fuggles hops (12 g) (15 min.)

- Original specific gravity: 1.058
- Final specific gravity: 1.012
- Alcohol content: 6.2% alcohol by volume (4.9 by weight)
- Bitterness: 30 EBU

and roast malt in the mouth; deep, bitter sweet finish with delicate hop underpinning.

Mash grains in 3 1/2 gallons (13 L) of water at 151 degrees F (66 degrees C) for two hours. Sparge with 170- to 176-degree-F (77- to 80-degree-C) water until the gravity of the runoff is 1.005. Boil wort for two hours. Cool and pitch a top-fermenting ale yeast.

To brew an extract version of Old Peculier, replace pale malt with 7 1/3 pounds (3,300 g) of nondiastatic, medium-colored malt extract and brew a four-gallon (18-L) batch. Heat the water to 104 degrees F (40 degrees C), stir in the malt extract and other grains, but not the sugar or hops. Bring to boil, then make the first hop addition.

This recipe is reprinted from Brew Your Own Real Ale At Home by Graham Wheeler and Roger Protz with permission from CAMRA Books, The Campaign for Real Ale, 34 Alma Rd., St. Albans, Herts AL1 3BW; camra@camra.org.uk.

Current commercial old ale offerings span a wide range of gravity, bitterness and color. Actual data on nearly 70 British-brewed old ales show the following ranges.

Gravity:	1.040 to 1.125	(10 to 31 °Balling)
Bitterness:	15 to 75 IBUs	—
Color:	7 to 30 SRM	light amber to dark brown

The highest end of the range is generally three to five times greater than the lowest value in each case. Thus these commercial examples define a "style" so broad it could encompass three or four other styles of beer at the same time. Indeed, Michael Jackson reports on three types of old ales that include strong mild ales, dark (and in some cases strong) biters and strong ales. (These observations come from the annual Old Ale Festival organized by Mark Dorber at the White Horse in London.)

A lot of good beers are being made commercially in the United States, but old ales aren't among them. If you want to drink a good old ale you'll have to travel to Britain every time you want a pint, or make it yourself. Unless you are made of money you'll be doing the latter rather than the former.

There is a nearly infinite number of variations of old ales to brew. If you're thinking you won't be able to explore the style as an extract brewer, think again. Commercial brewers in Britain use extract in their old ales.

The Origins of Old Ale

Today we group old ales with strong ales and often think of them as being the same. Indeed, the two appear to be closely related throughout beer history.

During the 17th century, it would have been redundant to say "strong" ale because the word "ale" denoted strength and the word "beer" was reserved for "small malt liquors" (Bickerdyke, 1965). From our perspective this continued to be true during the 19th century when most ale recipes had a starting gravity greater than 1.060 and many of them were above 1.090.

One source of recipes from the mid-1800s is Amsinck's *Practical Brewings*, a collection of more than 60 actual recipes from working breweries of the time. In this collection, most ales are labeled from X to KXXXXX to indicate their relative strength in a range from about 1.055 to 1.140 original gravity. Among these British ale recipes we find two for "Old Ale" that provide hints of how this style differed from other strong ales.

One recipe was for "London XXX Old Ale" (Amsinck, 1868) that had a starting gravity of 1.086, lower than the other XXX ales in the same publication. This old ale had only a slightly lower hopping level but

significantly higher saccharification temperature than other XXX ales. The higher mash temperature gave a more dextrinous wort that resulted in a lower degree of apparent attenuation — 58 percent for the old ale versus 62 to 71 percent for the others. In addition to these processing differences, the recipe notes make clear that the old ale was aged one full year before distribution.

A second recipe from this source, labeled "Dorset XXX Old Ale" shows many similar characteristics including a relatively high mash temperature that produced low attenuation at 58 percent. Aging is not explicitly stated, but after fermentation the beer was transferred to a "vat," which is the usual resting place for aging beers. These old ales were brewed for low attenuation and that seems to have been a key characteristic in distinguishing them from other ales brewed to a similar starting gravity. Today this can still be a useful characteristic in distinguishing old ales from other styles.

The aging issue appears to have been another important element of the style in the mid-1800s and that is still true in some cases today. Another reference from 1881 supports the fact that extensive aging may have been the chief trait of old ales (Corran, 1975). It lists two old ales, giving their ages as two and three years old respectively. The listings appeared as follows:

Somerset Old Vat	OG	% Alcohol (by Volume)
2 years	1.071	6.5
3 years	1.085	8.6

From other sources we know aged beer was a common element in porters and stouts at this time and it is generally acknowledged that such aging played an important role in developing the flavor profile of ales as well. During aging, beers developed a distinctive flavor trait, an acidic and perhaps fruity character along with a horsey or leathery character and some solventlike notes. Many of these flavors are produced by the presence of *Brettanomyces* and various other microbes in the aging vats (Lodahl, 1994). We find a description of this in 1890, in a report from a consultant to the English hop industry (Coran, 1975):

"There was formerly a taste among English consumers for old ale, which had to be vatted for at least a year and probably more, before it was consumed, and acquired a sub-acid flavor, particularly relished by the consumer ..."

Consistent with this, laboratory analyses from the late 1800s show the aged beers from Britain displayed a rather high level of acidity (Wahl and Henius, 1908).

From the data we have reviewed, it is clear that old ales were aged before distribution and an acidic taste was part of the flavor profile. What remains unclear is the exact rationale for naming the beers "old ale." This appellation may indicate the use of an "old" recipe or "old" brewing methods as is seen with the German alt beers. However, given the aging used, the term "old" may simply refer to the maturity of the product it describes. Given the distinct flavor profile attributed to such products above, this seems to be the most likely explanation.

ADJUNCT – Any grain or fermentable ingredient added to barley malt for brewing.

ATTENUATION – The degree to which residual sugars have been fermented.

DEXTRINOUS – High in unfermentable sugars.

IBU – International Bitterness Units are numbers used to describe the bitterness of a given beer. They represent the parts-per-million of isomerized alpha acids present in beer.

Today's Old Ales

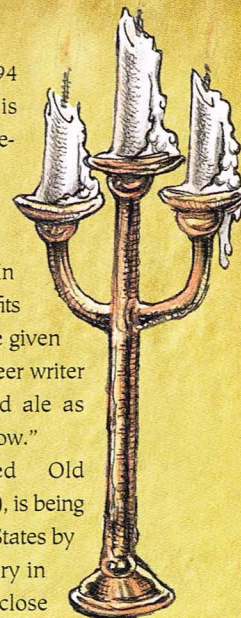
Today's old ales include some for which significant age is a defining characteristic. At the same time, many products labeled "old ale" today in Britain are no older than many other beers sold at the same pub. Several classic British examples of old ale can be readily obtained in the United States. The best known is Thomas Hardy's Ale (Eldridge Pope). At 1.125, this beer has an original gravity well into the barley wine range, but Britain's beer writers continue to classify it as an old or strong ale. Between presentation and flavor impact, this beer is hard to forget. It is intensely malty and sharply alcoholic with a soft vinous character underneath that makes it very drinkable. This example is vintage dated and the brewer recommends additional aging by the consumer.

The arrestingly named Old Peculier (Theakston) has a heritage dating back to 1890 and Jackson says it is "arguably the definitive example" of the middle gravity (1.055 to 1.080) old ales. Fruity and soft, it reminds some observers of black currants.

It clocks in at 1.094 with 48 IBUs and is quite fruity but intensely dry with hints of raisins and some acidic notes (Wheeler and Protz, 1993). In my opinion this beer fits the description once given by a 19th-century beer writer who described aged ale as being "racy but mellow."

Another, called Old Thumper (Ringwood), is being made in the United States by the Shipyard brewery in Portland, Maine. A close relationship between Shipyard and Ringwood brewery in England, which originated the brand, ensures that the U.S. brew is quite similar to the original. At original gravity 1.058, it is pale to light amber, soft and fruity like peaches or apricots. On the sweet side, some consider it cloying. It has lingering fruitiness in the finish.

Two other English examples are Old Buzzard and Old Navigation. Old Buzzard



"If you're thinking you won't be able to explore the style as an extract brewer, think again."

With an original gravity of 1.057 and 28 IBUs, this product is close to the median of all contemporary commercial examples.

Gale's Prize Old Ale is another example with a long heritage and widespread renown.



GLOSSARY

MALTODEXTRIN – Unfermentable soluble sugar that adds body and mouthfeel.

SACCHARIFICATION – The conversion of starch to sugar via enzyme activity in the mash.

(Cottleigh) has an original gravity of 1.045, it is light brown with a nice caramelly note, some nuttiness and a slight fruitiness. It has a very soft finish with lingering caramel and fruit notes. Old Navigation (Hoskins and Oldfield) has an original gravity of 1.071, it is deep brown in color and tastes a bit fruity. This well-attenuated beer is sweet with malt and alcoholic warmth.

Old Ale Grain Bills

In these commercial examples you can see the variety of products encompassed by the old ale style designation today. One division of this style offered by Jackson is based

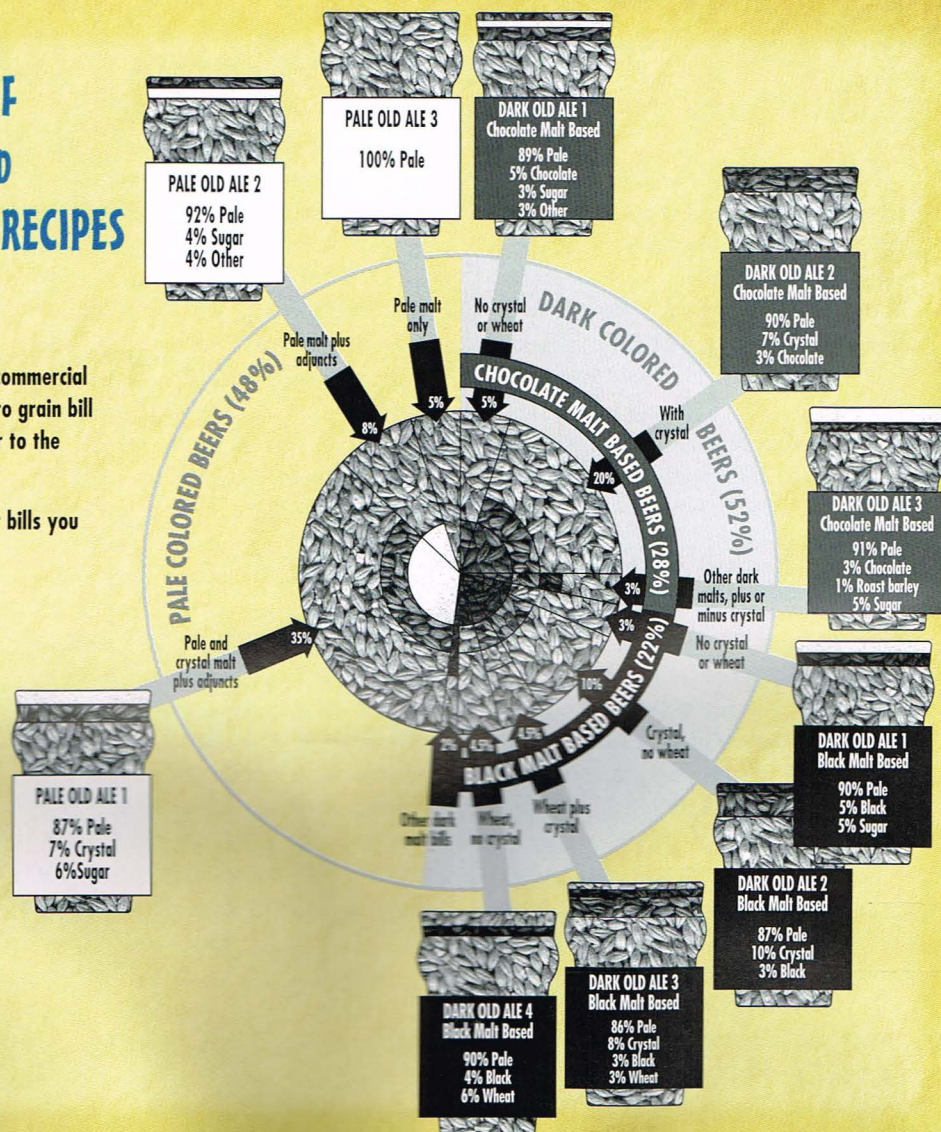
FIGURE 1. CATEGORIZATION OF COMMERCIAL OLD ALES AND GRISTS FOR 10 OLD ALE RECIPES

The round chart represents an analysis of 67 commercial old ale recipes showing brewer's approaches to grain bill formulation. In all cases, the percentages refer to the total data base of 67 recipes.

The glasses contain corresponding old ale grist bills you can use.

NOTES:

- ± Crystal malt may be included at the discretion of the brewer.
- Light or pale malt extract can be substituted for pale malt in the following ratios: Replace one pound of pale malt with 0.6 pounds dry malt extract or 0.75 pounds malt syrup.
- Wheat includes wheat malt, torrefied wheat, wheat flour and wheat syrup.
- Sugar includes invert, cane and brown sugar; maltose syrup and glucose syrup.
- Other includes flaked barley, flaked maize, amber malt and malt extract.



on flavor. In my research on the style, I analyzed the recipes used and identified another classification system that may be more useful to brewers.

The analysis is based on 67 recipes, most of which come from Roger Protz's *The Real Ale Drinker's Almanac* (Neil Wilson Publishing, 1993). The analysis divides the classification of old ales into two major categories: pale colored and dark colored. The commercial examples are nearly evenly split between these two groups.

Within the pale group, most recipes include crystal malt as well as some adjunct — wheat, maize, flaked barley or sugar. A small number of recipes exclude crystal malt or rely solely on pale malt. Within the dark group, the recipes are fairly evenly split between two camps. In the first, chocolate malt is used, in the second black malt is pre-

ferred — it is extremely rare for these two color malts to be used together in an old ale recipe. When chocolate malt is used, crystal malt is included 80 percent of the time. When black malt is used, crystal is used slightly less often — only 67 percent of the time. Also, within the black malt group, wheat is included about half the time.

The use of sugar in about one-third of the recipes is consistent across the major groupings of this analysis. Also, the distribution of these major malt bill types is consistent across the range of gravities represented by current old ale styles. All recipe groups including pale colored beers and dark colored beers have examples below 1.045 and above 1.065 and each group's mean gravity falls between 1.052 and 1.062.

The one exception to this even distribution of gravity is above 1.080. These

high-gravity old ales are twice as likely to come from the "pale" group as from a "dark" group. This observation supports the distinction of a contemporary substyle of "strong ale" as mentioned by Jackson. It could be said that these strong ales generally are made without dark malts and possess a gravity of 1.080 or greater. One feature that further sets these strong ales apart from the other old ales is the relative lack of commercial old ales with gravities between 1.070 and 1.080.

Further analysis reveals the relative amount of each grain used in these recipes as shown in Figure 2. This tells us that pale malt accounts for the vast majority of the gravity in most of the old ale recipes and adjuncts such as sugar and corn may account for the lion's share of the remaining fermentable material. More important, however, it shows the amounts of crystal, chocolate

and black malts that appear in these recipes. From these data we can formulate an initial recipe and adjust it across the full range of values used as we explore the style.

By combining the data from the light and dark colored categories we can quickly sketch suitable malt bills for the 10 major subgroups of this style.

Once you have decided on the type of malt bill you will have to decide what gravity of ale to make. Since the commercial examples span such a broad range, you can throw together just about any quantity of ingredients according to these ratios and produce a product that fits the bill. To get in the range of 1.055 to 1.070 where the majority of old ales fall, you'll want a total of 10 to 15 pounds (4.5 to 6.8 kg) of grain per five-gallon (19-L) batch. (This assumes an extract efficiency of about 70 percent.)

For example, if we wanted to make a 1.055 original gravity version of the Dark Old Ale No. 2 chocolate-malt-based recipe from Figure 1 we would need a total of 10 pounds (4.5 kg) of grain for a five-gallon (19-L) batch as follows: 8.9 pounds (4 kg) pale malt, 0.5 pounds (227 g) chocolate malt, 0.3 pounds (136 g) sugar and 0.3 pounds (135 g) of other fermentables, such as flaked barley.

FIGURE 2: Grain Proportion by Weight in Commercial Old Ale Recipes

Proportion of Total Grain Bill, When Used

Grain	Average	Maximum	Minimum
Pale	89%	100%	74%
Crystal	7%	17%	3%
Chocolate	3%	10%	1%
Roast	3%	3%	3%
Black	3%	5%	1%
Wheat	6%	10%	1%
Sugar	8%	18%	2%
Other	8%	16%	1%

Notes:

- Wheat includes wheat malt, torrefied wheat, wheat flour and wheat syrup.
- Sugar includes invert, cane and brown sugar; maltose syrup and glucose syrup.
- Other includes flaked barley, flaked maize, amber malt and malt extract.

Of course, those who really want to explore this style will stretch these malt bills to the lower and upper limits of the original gravity range. There is just one caveat to keep in mind as you brew this style. You want to achieve a fairly low level of attenuation, so plan to mash at a high temperature, say 155

At the beginning of this article, we saw a broad range of bitterness values in the old ale style, from 15 to 75 IBUs. Because the gravities encountered in this style also cover a broad range, we don't really know what the balance should be. To solve this problem, I use a ratio called bitterness units to

"You could spend years making old ales without having tried every possible variation."



to 158 degrees F (68 to 70 degrees C). If you use extract, select one that gives a low level of attenuation or use some maltodextrin to increase the body of the finished beer.

Extract can be substituted for some or all of the pale malt in these recipes. Simply multiply the weight of the pale malt by 0.75 to arrive at the amount of extract syrup needed or by 0.6 to get the amount of dry malt extract to use. For the pale malt use pale or light malt extract, for the wheat use wheat extract and steep any specialty grains. Of course, unhopped extracts give the brewer more control over finished flavor.

The Rest of the Recipe

Malt bill is the biggest issue in making an old ale, but there are other factors critical to producing an authentic rendition of the style. First, hops. Not surprisingly, British brewers use English hops. Among the commercial beers the favorite hops were Whitbread Golding variety, Kent Golding and Styrian Golding. They appeared in 74 percent of all the commercial old ales analyzed. Next popular was a variety called Challenger, found in 47 percent of all recipes, and then Fuggles, found in 42 percent of all the old ales. While Challenger may be difficult to come by in the United States, Kent Goldings and English Fuggles can be found and substituted. U.S.-grown Fuggles or Willamette varieties also can be used.

gravity units, or BU:GU, to assess the balance of each style. Bitterness is gauged in IBUs while the gravity units are simply the last two or three digits of the original gravity. Thus a 1.040 beer has a GU of 40, a 1.075 beer has a GU of 75 and a 1.120 beer has a GU of 120.

As it turns out, the average BU:GU ratio for commercial old ales is 0.58, with a range from 0.45 to 0.79. This means, on average, an old ale with an original gravity of 1.055 will have 32 bitterness units. To get this, multiply the gravity units of your recipe (in this case 55) by the BU:GU ratio (0.58). Using the maximum and minimum BU:GU values, we see that the same beer might have as little as 25 (55 x 0.45) or as much as 43 IBUs (55 x 0.79).

If you are new to hop calculations and need a simple way to determine your bitterness, assume that you will need 1.75 ounces (50 g) of a 4 percent alpha acid hop boiled for 60 minutes to achieve the necessary bitterness level in a five-gallon (19-L) batch of beer. (This assumes utilization of 25 to 35 percent.)

Looking at both commercial and successful homebrewed recipes for old ale, I find that most brewers include one or two late hop additions. These late additions can be made anytime during the last 30 minutes of the boil, steeped in the hot wort after the boil or dry-hopped in the secondary fermenter. Among homebrewed old ales that made it to the second round of the AHA National Homebrew Competitions of 1993 and 1994, the average flavor hop addition

(added 10 to 30 minutes before the end of the boil) was 0.86 ounces (24 g) in five gallons (19 L). The average aroma hop addition (added during the last 10 minutes of the boil) was a bit smaller at 0.61 ounces (17 g). Dry-hop additions averaged one ounce (28 g).

Compared to a lot of styles, the late hopping for old ales is relatively simple, although there is still plenty of room for variation. If you are looking for someplace to start, for a five-gallon (19-L) batch I recommend 0.75 ounces (21 g) at 20 minutes before the end and 0.75 ounces (21 g) steeped in the hot wort after the boil.

Because old ales have been brewed all across Britain, there is no one water chemistry profile associated with the style. More carbonate waters will be better suited to dark-type old ales and they may not tolerate high levels of bitterness. If you want to make a dryer or paler version, you might try using slightly softer water.

When making your yeast selection keep in mind the goal of low attenuation. Selecting a strain such as the low-attenuating Irish yeast will work, as will some of the strains that promise "woody" or "full-bodied" results. Here, as with other aspects of the style, you have plenty of room for experimentation.

If you consider the vast spectrum of opportunity available to you in making old ales, it is clear that you could spend years making this style without having tried every possible variation. On the other hand, if you want to taste the full spectrum of old ales but don't have the patience to brew them all yourself, you might adopt the style as a club project. Just divide up the style into a dozen or more examples, assign them and bring them together for one tasting. The results of brewing any one of these wonderful old ales should be enjoyable. The taste of a dozen collected all in one place would truly be sublime.

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Ray Daniels is an avid homebrewer who regularly writes and speaks about beer and brewing. He is the author of *Designing Great Beers: The Ultimate Guide to Brewing Classic Beer Styles* (Brewers Publications 1996).



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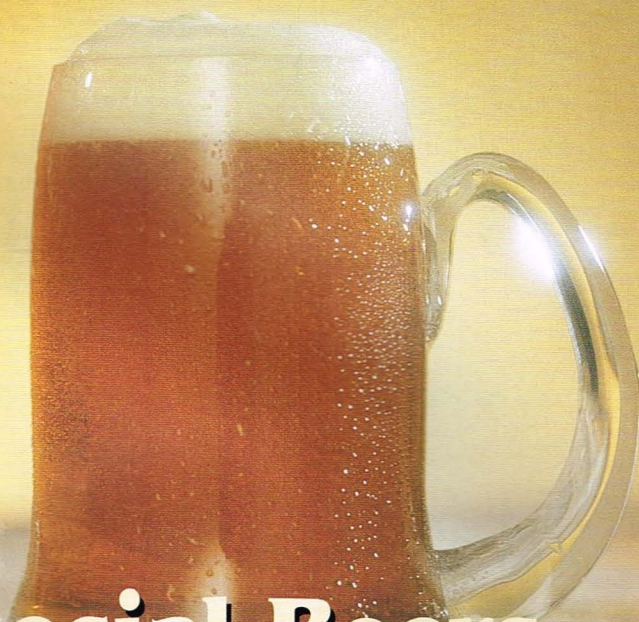
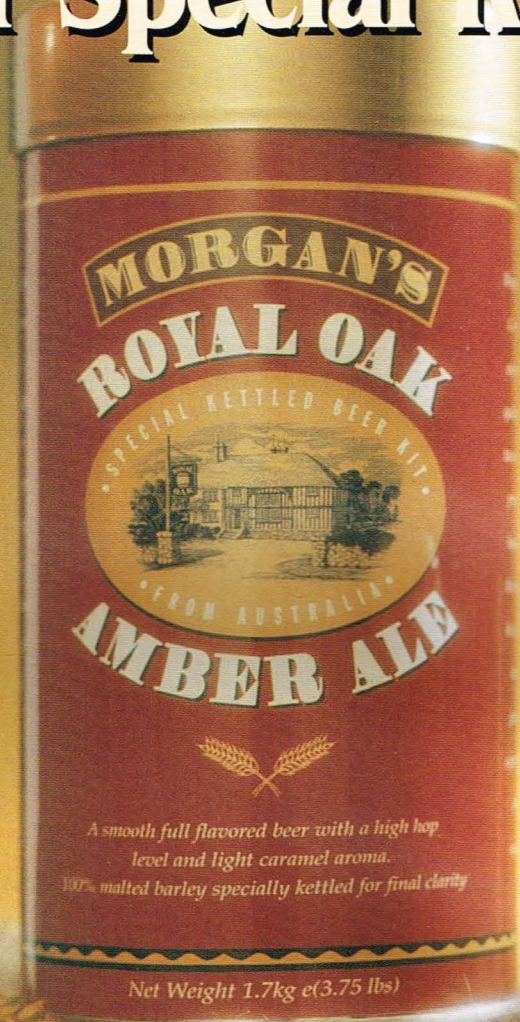
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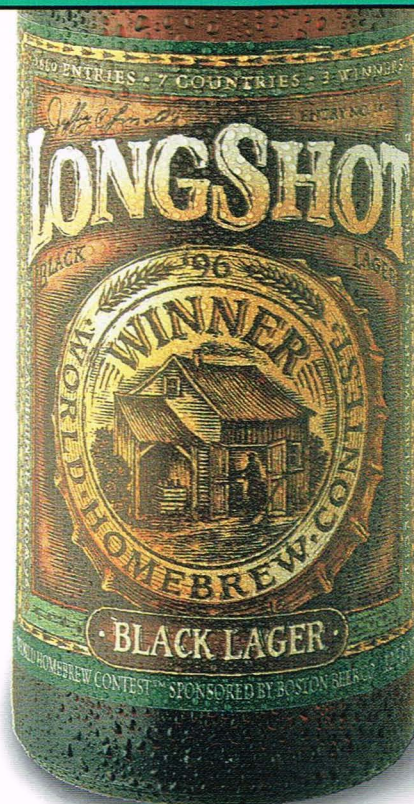
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LAGERING IN LOUISIANA

The Brewing of Paddlewheel Pilsener



In mid-1995, Karen Barela, president of the American Homebrewers Association, asked Doug Lindley if he would brew a classic Pilsener for the AHA 1996 National Homebrewers Conference in New Orleans the following June. Doug, an accomplished homebrewer since 1980 and then professional brewmaster at Acadian Brewing Co. of New Orleans, jumped at the chance to show some southern hospitality homebrew style.

Doug joined the Crescent City Homebrewers of New Orleans in 1984 and has served as president in 1993. Batches are regularly made by members for club functions and meetings, so the club owns various pieces of equipment including large pots and lauter tuns. In addition, Doug and other club members have equipment that can be used to make large-scale batches for club functions. Between his own equipment and that of the club, accommodating the uncommonly large batch size would be no problem.

About 180 gallons (681 L) of beer would be needed so each conference registrant could receive a bottle and to provide draft beer at conference functions. At his house Doug has a system capable of brewing up to 60 gallons (227 L) of beer at a time, so it would take three consecutive brews to make the 180 gallons. Because the club had large stainless-steel pots and other equipment available, Doug decided to brew two 90-gallon (340.6-L) batches on consecutive weekends.

Doug fermented the batches in 15 1/2-gallon (59-L) stainless-steel kegs. Conveniently, the author has an 8- by 8-foot walk-in cooler at his house, so finding a place to keep the 12 kegs cool during fermentation was no problem. Doug has a reverse-osmosis water filtration



by Ralph Latapie

PHOTOS COURTESY OF RALPH LATAPIE
LOGO DESIGN BY WENDY LYONS



Denis Finigan helps Doug Lindley by stirring the wort. Propane burners heated the 50- and 60-gallon brewpots for the boil. The shorter brewpot used to be part of a commercial stainless-steel washing machine.

Paddlewheel Pilsener

Ingredients for 5 gal (19 L)

- 8 3/4 lb two-row malt (4 kg)
- 1/3 oz 60 °L crystal malt (9 g)
- 3 1/2 oz Saaz hop pellets, 2.2% alpha acid (99 g)
- 1/3 oz Saaz hop pellets, 2.2% alpha acid (9 g)
- Wyeast No. 2206 Bavarian lager liquid yeast
force carbonate in keg

- Original specific gravity: 1.048
- Final specific gravity: 1.012
- Boiling time: 90 min.
- Primary fermentation:
10 to 12 days at 50 degrees F
(10 degrees C)
- IBUs: 35

Ingredients for 90 gal (340.6L)

- 145 lb Briess two-row pale malt (65.8 kg)
- 6 oz 60 °L Briess crystal malt (170 g)
- 63 3/4 oz Saaz hop pellets, 2.2% alpha acid
(1.8 kg) (boil)
- 6 oz Saaz hop pellets, 2.2% alpha acid
(170 g) (aroma)

system so soft water for the classic Pilsener was readily available. Doug and his helpers brewed at the Acadian Brewing Co. on two consecutive Sundays using club and members' equipment.

Use a reverse-osmosis water filter or other water treatment procedure to soften the mash and sparge water to 25 to 50 ppm hardness. Adjust the pH to 5.4 with food-grade phosphoric acid. Hold the grain and 40 gallons of treated water at 122 degrees F (50 degrees C) for 25 minutes, then raise to 150 degrees F (66 degrees C) for one hour. Once conversion is complete raise the mash temperature to 170 degrees F (77 degrees C) and place the mash in three lauter tuns. Sparge with 168-degree-F (76-degree-C) water.

The specific gravity of the first wort was 1.088 (22 °Plato). Doug sparged until the specific gravity of the last wort was about 1.012 (3 °Plato). In the end about 90 gallons (340.6 L) of wort were collected at a specific gravity of 1.048 (12 °Plato). Add treated water to the boiling pots during the boil to maintain a total volume of 90 gallons. Cool the wort with a counterflow wort chiller and pitch Wyeast No. 2206 Bavarian lager yeast. Attach airlocks and ferment between 50 and 52 degrees F (10 and 11 degrees C).

Fermentation took about 10 days. When the beer had fermented down to 1.012 (3 °Plato) Doug cooled it to stop fermentation and then racked the beer into kegs. During racking, the total volume of the beer was

reduced from 12 kegs to 10 and aged at 34 degrees F (1 degree C) for about 30 days.

Because the beer was not fermented or aged in one container, there were flavor variances between kegs. For consistency in the finished product, blending was necessary. To accomplish this, Doug made two manifolds, one for the CO₂ gas to push the beer and the other for the beer itself. All the hoses going to and from the manifolds earned the apparatus the nickname of the "octopus." Carbon dioxide went from the tank to one manifold which had 10 separate valves with blue gas lines going to each of the 10 kegs. (At this time the valves had been replaced in each of the 10 kegs.) A clear beer line went from each of the 10 kegs to a mani-



Doug shows the inside of a lauter tun lid. The perforated copper pipe is connected to a stainless-steel pan attached to the top of the former ice chest.



Above: Wort from three lautertuns drained into a one-quarter-barrel keg and was then pumped into the boiling pots. Right: Doug bottled Paddlewheel Pilsener with a counterpressure bottle filler. The beer was both fermented and aged in an eight- by-eight-foot walk-in cooler.



fold with one line exiting the manifold and going through a Gelman filter using a one-micron cartridge. From the filter the beer was transferred into clean kegs.


When the setup was attached to the 10 kegs Doug turned the gas to 10 psi and bright beer started flowing into the nine final cleaned and sanitized kegs. The contraption worked perfectly and all of the original 10 kegs were emptied at nearly the same time. Best of all, the beer tasted the same from all of the final nine kegs.

The beer was force carbonated with CO₂ prior to counterpressure bottling the 600 six-ounce bottles for conference attendees and 50 750-mL bottles for the banquet tables. The kegs and bottled beer were transported and stored at the Acadian Brewing Co. cooler. Kegged Paddlewheel Pilsener was available at the first night's activities and the trade show on the final day of the conference.

The beer received rave reviews from conference attendees and somehow Doug still has two kegs (one full barrel) of Paddlewheel Pilsener in the cooler. If it holds up, perhaps we will get another taste of it at the 1997 conference.

Ralph Latapie is a member of the Crescent City Homebrewers of New Orleans. A winemaker for 13 years he has been homebrewing on a regular basis since he discovered kegging three years ago. He is a marine fisheries biologist who also enjoys hunting alligators and cooking.

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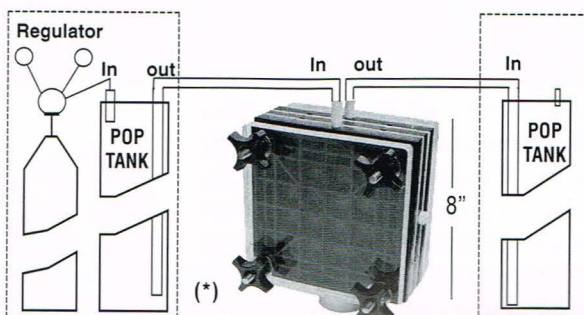
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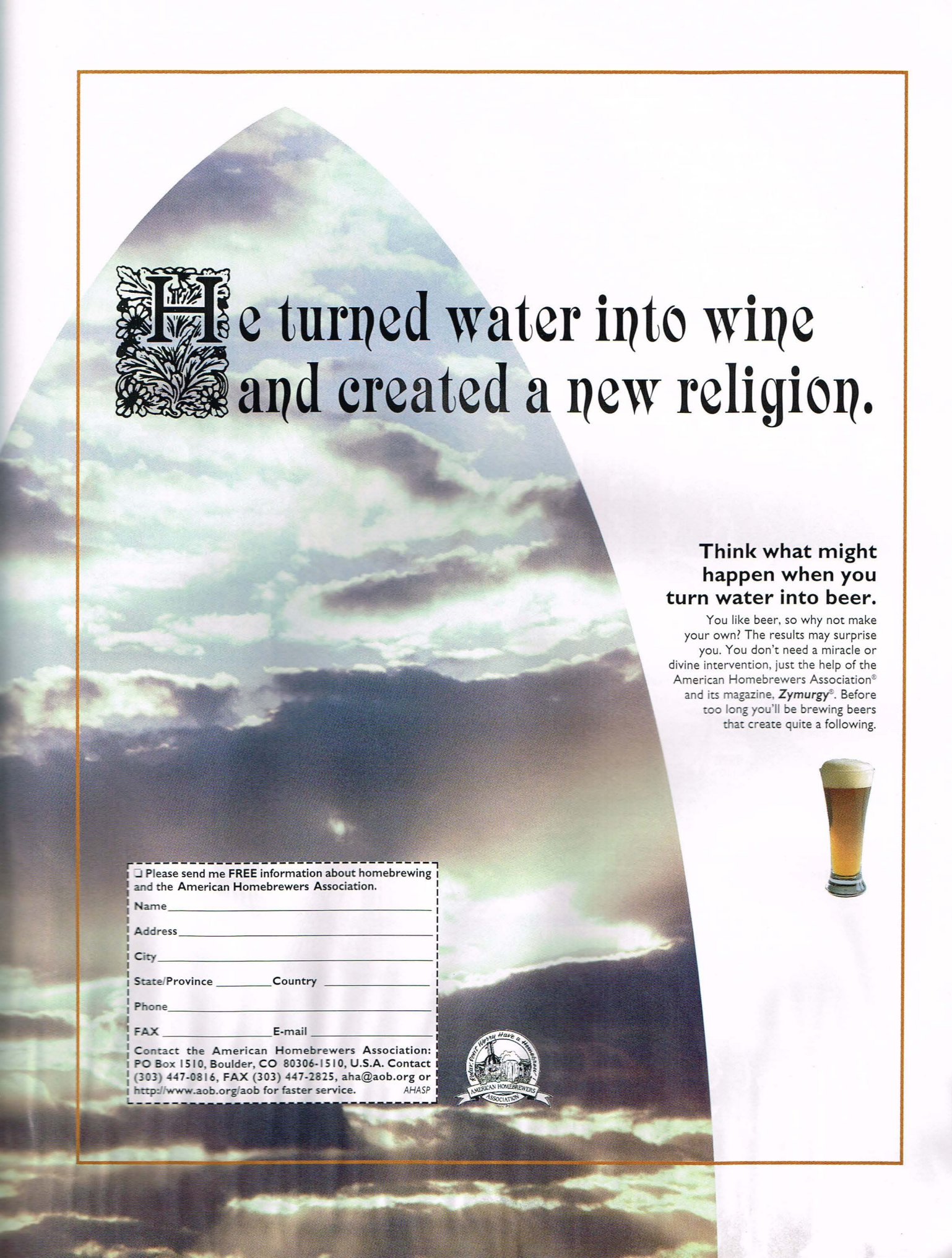
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BROWN PORTER

GOLD: Black Butte Porter, Deschutes Brewery, Bend, OR
SILVER: Total Disorder Porter, Big Horn Brewing Co., Englewood, CO
BRONZE: St. Charles Porter, Blackstone Restaurant & Brewery, Nashville, TN

DRY STOUT

GOLD: Skookum Stout, Captains City Brewery Inc., Coupeville, WA
SILVER: Mambe Stout, Mile High Brewing Co., Denver, CO
BRONZE: Heart of Darkness XXX Stout, Twenty Tank Brewery, San Francisco, CA

SPECIALTY STOUT

GOLD: Kinnikinnick Old Scout Stout, Twenty Tank Brewery, San Francisco, CA
SILVER: Rodeo Stout, Crested Butte Brewery & Pub, Crested Butte, CO
BRONZE: Holy Cow! Stout, Holy Cow! Casino, Cafe & Brewery, Las Vegas, NV

STRONG ALE

GOLD: Imperial Stout, Valley Forge Brewing Co., Wayne, PA
SILVER: Jeremiah Red, BJ's Pizza, Grill & Brewery, Brea, CA
BRONZE: Auld Lang Syne Holiday Ale, Coast Range Brewing Co., Gilroy, CA

BARLEY WINE

GOLD: Big 12 Barleywine, Little Apple Brewing Co., Manhattan, KS
SILVER: Centurion Barleywine Ale, Golden City Brewery, Golden, CO
BRONZE: Old Weasel Barleywine, Steelhead Brewery, Burlingame Station, Burlingame, CA

BELGIAN-STYLE ALE

GOLD: Abbey Belgian Style Ale, New Belgium Brewing Co., Fort Collins, CO
SILVER: Blue Moon Honey Blonde, Blue Moon Brewing Co., Denver, CO
BRONZE: Celis Grand Cru, Celis Brewery, Austin, TX

BELGIAN-STYLE SPECIALTY ALE

GOLD: Little Red Raspberry, Wynkoop Brewing Co., Denver, CO
SILVER: RedRock White, RedRock Brewing Co., Salt Lake City, UT
BRONZE: Overland White, Overland Stage Stop Brewery, Longmont, CO

EUROPEAN-STYLE PILSENER

GOLD: DeGroen's Pils, Baltimore Brewing Co., Baltimore, MD
SILVER: Wild River Bohemian Pils, Wild River Brewing, Grants Pass, OR
BRONZE: Pecks Pilsener, Great Dane Pub and Brewing Co., Madison, WI

MÜNCHENER HELLES AND EXPORT

GOLD: Munich Gold, Brewmoon / Broadway Ventures, Saugus, MA
SILVER: Hubsch Lager, Sudwerk Privatbrauerei Hubsch, Davis, CA
BRONZE: Garten Brau Lager, Capital Brewing Co., Middleton, WI

AMERICAN LIGHT LAGER

GOLD: Pabst Genuine Draft Light, Pabst Brewing Co., Milwaukee, WI
SILVER: Coors Light, Coors Brewing Co., Golden, CO
BRONZE: Bud Light, Anheuser-Busch, St. Louis, MO

AMERICAN LAGER

GOLD: Budweiser, Anheuser-Busch, St. Louis, MO
SILVER: Pabst Blue Ribbon, Pabst Brewing Co., Milwaukee, WI

AMERICAN PREMIUM LAGER

GOLD: Original Coors, Coors Brewing Co., Golden, CO
SILVER: Coors Extra Gold, Coors Brewing Co., Golden, CO
BRONZE: Point Special, Stevens Point Brewery, Stevens Point, WI

AMERICAN SPECIALTY LAGER

GOLD: Rainier Ice, Rainier Brewing Co., Seattle, WA
SILVER: Mickey's Malt Liquor, G. Heileman Brewing Co., LaCrosse, WI
BRONZE: Eagle Malt Liquor, Evansville Brewing Co., Evansville, IN

AMBER LAGER

GOLD: Coyote Amber Lager, Black Moon Brewing Co., St. Paul, MN
SILVER: Killian's Red, Coors Brewing Co., Golden, CO
BRONZE: Augsburg Red, Augsburg Brewery Co., St. Paul, MN

MÄRZEN / OKTOBERFEST

GOLD: Independence Franklifest, Independence Brewing Co., Philadelphia, PA
SILVER: Garten Brau Oktoberfest, Capital Brewing Co., Middleton, WI
BRONZE: Dominion Oktoberfest, Old Dominion Brewing Co., Ashburn, VA

DARK LAGER

GOLD: Latrobe Bavarian Black, Latrobe Brewing Co., Latrobe, PA
SILVER: Uffda Bock, New Glarus Brewing Co., New Glarus, WI
BRONZE: Thomas Kemper Bohemian Dunkel, Thomas Kemper Lagers, Seattle, WA

BOCK

GOLD: Jack Frost Doppelbock, Saxer Brewing Co., Lake Oswego, OR
SILVER: Stoudt's Honey Double Mai Bock, Stoudts Brewery, Adamstown, PA
BRONZE: Samuel Adams Double Bock, Boston Beer Co., Boston, MA

AMERICAN LAGER / ALE OR CREAM ALE

SILVER: Scrimshaw Beer, North Coast Brewing Co., Fort Bragg, CA
BRONZE: Lodgepole Light, Prescott Brewing Co., Prescott, AZ

AMERICAN WHEAT ALE OR LAGER

GOLD: Happy Valley Hefeweizen, Desert Edge Brewing Co., Salt Lake City, UT
SILVER: New World Wheat, Redwood Coast Brewing Co., Mountain View, CA
BRONZE: Stoddard's Kristall Weizen, Stoddard's Brewhouse & Eatery, Sunnyvale, CA

FRUIT BEER

GOLD: Belgian Red Wisconsin Cherry, New Glarus Brewing Co., New Glarus, WI
BRONZE: Wild Boar Honey Raspberry Wheat, Wild Boar Brewing Co., Dubuque, IA

HERB / SPICE BEER

GOLD: Bundaberg Ginger Beer, Bardo Rodeo, Arlington, VA
SILVER: Pancho Verde Chili, Rio Grande Brewing Co., Albuquerque, NM
BRONZE: Belgian Wheat, Beartooth Brewing Co., Boulder, CO

SPECIALTY BEER

GOLD: Powderfinger, Big Time Brewing Co., Seattle, WA
SILVER: Naked Aspen Honey Wheat, Naked Aspen Beer Co., Littleton, CO
BRONZE: Maple Nut Brown Ale, Tommy-knocker Brewery & Pub, Idaho Springs, CO

SMOKE-FLAVORED BEER

GOLD: Smoke, Rogue Ales, Newport, OR
SILVER: Alaskan Smoked Porter, Alaskan Brewing Co., Juneau, AK
BRONZE: VBC Smoked Beer, Virginia Beverage Co., Alexandria, VA

NON-ALCOHOLIC MALT BEVERAGE

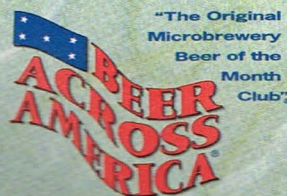
GOLD: Kingsbury Red NA, G. Heileman Brewing Co., LaCrosse, WI
SILVER: O'Doul's, Anheuser-Busch, St. Louis, MO

Professional Panel Blind Tasting judges award medals to excellent examples of a particular style. If the judges believe no beer in a category meets the quality and style-accuracy criteria, they may elect not to award medals. For example, judges may recognize a beer with a silver or a bronze medal and not award a gold medal. For information about the Great American Beer Festival call the Association of Brewers at (303) 447-0816, or write PO Box 1679, Boulder, CO 80306-1679, or <http://beertown.org> on the Web.

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1997 National Homebrew Competition Rules and Regulations



INTRODUCTION

Welcome to the largest homebrew competition in the world! In 1996, nearly 400 judges evaluated 3,331 homebrewed beverages. For the American Homebrewers Association 1997 National Homebrew Competition, we expect more than 3,500 entries. The Competition is an enormous undertaking, and we thank all of the sponsors and volunteers whose determination and enthusiasm for homebrewing has made the Competition a success over the years. A total of 23,206 homebrews have been judged in the 18 years of competition.

We simplified the entering procedures for this year's first round. You no longer need to fill out a recipe form – just the redesigned entry form on the last page of this brochure. Be sure to follow all the instructions for entering on pages 3 through 4. If you have any questions about the competition, please contact us. AHA NHC PO Box 1679,

Boulder, CO 80306-1679, (303) 447-0816, FAX (303) 447-2825, AHA@aob.org

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Sample Score Sheet

Part I How to Enter This Competition

Part II Instructions for Completing the Entry Form

Part III The Fine Print

Part IV Category Descriptions

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Part VI Entry Site Locator Guide & Map

Part VII Entry Form

New for the 1997 Competition

- * New styles: American-Style Pilsener, American-Style Barley Wine, American Amber Ale, Brown and Robust Porter.
- * New Category Name: Specialty and Experimental Beers.
- * There is a simplified first-round entry form.
- * For second-round brewers, a recipe form will be required. You need to score 30 or better to place in the first round and advance to the second round.

1997 Beer Score Sheet

AMERICAN HOMEBREWERS ASSOCIATION 1997 NATIONAL HOMEBREW COMPETITION

DESCRIPTOR DEFINITIONS

- ☐ **Acetaldehyde** — Green applelike aroma; byproduct of fermentation.
- ☐ **Alcoholic** — The general effect of ethanol and higher alcohols. Tastes warming.
- ☐ **Astringent** — Drying, puckering (like chewing on a grape skin) feeling often associated with sourness. Tannin. Most often derived from boiling of grains, long mashes, oversparging or sparging with hard water.
- ☐ **Bitter** — Basic taste associated with hops; braun-hefe or malt husks. Sensation experienced on back of tongue.
- ☐ **Chill haze** — Haze caused by precipitation of protein-tannin compound at cold temperatures. Does not affect flavor. Reduction of proteins or tannins in brewing or fermenting will reduce haze.
- ☐ **Chlorophenolic** — Caused by chemical combination of chlorine and organics. Detectable in parts per billion. Aroma is unique but similar to plasticlike phenolic. Avoid using chlorinated water.
- ☐ **Cooked Vegetable/Cabbagelike** — Aroma and flavor often due to long lag times and wort spoilage bacteria that later are killed by alcohol produced in fermentation.
- ☐ **Diacetyl/Buttery** — Described as buttery, butterscotchlike. Sometimes caused by abbreviated fermentation or bacteria.
- ☐ **DMS (dimethyl sulfide)** — A sweet, cornlike aroma/flavor. Can be attributed to malt, short or non-vigorous boiling of wort, slow wort chilling or, in extreme cases, bacterial infection.
- ☐ **Fruity/Estery** — Similar to banana, raspberry, pear, apple or strawberry flavor; may include other fruity/estery flavors. Often accentuated with higher temperature fermentations and certain yeast strains.
- ☐ **Grainy** — Raw grain flavor. Cereallike. Some amounts are appropriate in some beer styles.
- ☐ **Hoppy** — Characteristic odor of the essential oil of hops. Does not include hop bitterness.
- ☐ **Husky** — See "Astringent".
- ☐ **Light-struck** — Having the characteristic smell of a skunk, caused by exposure to light. Some hops can have a very similar character.
- ☐ **Metallic** — Caused by exposure to metal. Also described as tinny, coinlike, bloodlike. Check your brewpot and caps.
- ☐ **Oxidized/Stale** — Develops in the presence of oxygen as beer ages or is exposed to high temperatures; winy, wet cardboardlike, papery, rotten vegetablelike/pineapplelike, sherrylike, baby diaperslike. Often coupled with an increase in sourness, harshness and bitterness. The more aeration in bottling/siphoning or air in headspace, the more quickly a beer will oxidize. Warm temperatures dramatically accelerate oxidation.
- ☐ **Phenolic** — Can be any one or combination of a medicinal, plasticlike, electrical firelike, listerinelike, band-aidlike, smoky, clovelike aroma or flavor. Most often caused by wild strains of yeast or bacteria. Can be extracted from grains (see "Astringent"). Sanitizing residues left in equipment can contribute.
- ☐ **Salty** — Flavor associated with table salt. Sensation experienced on sides of tongue. Can be caused by presence of too much sodium chloride, calcium chloride or magnesium sulfate (Epsom salts); brewing salts.
- ☐ **Solventlike** — Flavor and aromatic character of certain alcohols, often due to high fermentation temperatures. Like acetone, lacquer thinner.
- ☐ **Sour/Acidic** — Pungent aroma, sharpness of taste. Basic taste like vinegar or lemon; tart. Typically associated with lactic or acetic acid. Can be the result of bacterial infection through contamination or the use of citric acid. Sensation experienced on sides of tongue.
- ☐ **Sweet** — Basic taste associated with sugar. Sensation experienced on front tip of tongue.
- ☐ **Sulfurlike (H₂S; hydrogen sulfide)** — Rotten eggs, burning matches. Is a byproduct with certain strains of yeast. Fermentation temperature can be a factor of intensity. Diminishes with age. Most evident with bottle-conditioned beer.
- ☐ **Yeasty** — Yeastlike flavor. Often due to strains of yeast in suspension or beer sitting on sediment too long.

Scoring Guide

Excellent (40 to 50): Exceptionally exemplifies style, requires little or no attention.

Very Good (30 to 39): Exemplifies style well, requires some attention.

Good (25 to 29): Exemplifies style satisfactorily, but requires attention.

Drinkable (20 to 24): Does not exemplify style, requires attention.

Problem (less than 20): Problematic, requires much attention.

Please use other side for additional comments.

Round No. _____ Entry No. _____

Category No. _____

Subcategory (spell out) _____

Judged by (please print) _____

Judge Qualifications (check one): BJCP ☐ rank _____

Experienced ☐ Apprentice or Novice ☐ Other ☐

Bottle Inspection Comments _____

Maximum Score

Bouquet/Aroma (as appropriate for style) _____ **10**

Malt (3), Hops (3), Other Aromatic Characteristics (4)

Comments _____

Appearance (as appropriate for style) _____ **6**

Color (2), Clarity (2), Head Retention (2)

Comments _____

Flavor (as appropriate for style) _____ **19**

Malt (3), Hops (3), Conditioning (2), Aftertaste (3), Balance (4), Other Flavor

Characteristics (4)

Comments _____

Body (full or thin as appropriate for style) _____ **5**

Comments _____

Drinkability and Overall Impression _____ **10**

Comments _____

TOTAL (50 possible points) _____

NHC97

1997 Rules and Regulations

AMERICAN HOMEBREWERS ASSOCIATION 1997 NATIONAL HOMEBREW COMPETITION

PART I – HOW TO ENTER THIS COMPETITION

1. What kind of bottles are required?

Every bottle must be 10 to 14 ounces in volume, brown or green glass, and be free of raised-glass or inked brand-name lettering and paper labels. Raised "No Deposit" or bottle manufacturing codes (i.e. p m 00 H 4328) are acceptable. Obliterate any lettering or graphics on the cap with a permanent black marker. Bottles with Grolsch-type swing tops are not allowed. Corked bottles meeting the above restrictions are acceptable; however, you must crimp a crown cap over the cork. Bottles not meeting these requirements will be disqualified.

2. How many bottles do I need?

Send one (1) bottle for each BEER and MEAD entry competing in the first round. Reserve a total of four (4) bottles of each entry: one (1) for the first round of the Competition and three (3) for competing in the second round of the Competition should your beer or mead advance. For CIDER, send all at once, three (3) bottles for each entry by the first-round deadline.

3. What are the entry fees?

AHA members pay \$9 per entry. Non-members pay \$12 per entry. Make checks payable (in U.S. funds) to American Homebrewers Association (or A.H.A.) and include your membership number (if applicable) on the check. Canadian entrants may send Canadian checks. Canadian check's should be payable to American Homebrewers Association (or A.H.A.) and have Canadian funds equivalent to U.S. funds at the current exchange rates. (See entry form for details.)

4. When are the entry deadlines?

First-round entries must be received at the appropriate site between Monday, April 28, and 5 p.m. on Friday, May 9, 1997. Second-round entries must be received at the appropriate site between Monday, July 7, and 5 p.m. on Friday, July 11, 1997. Notification will be mailed by June 10 with additional instructions if your entry advances to the second round.

5. How do I enter?

- For each entry, fill out an entry form (last part of this brochure) in its entirety. For complete instructions on filling out the entry form, see Part II. Judges do not see your entry form. For more than one entry, please make copies of the entry form.
- Fold your check or money order with one of your entry forms. On your check write the number of entries the check or money order pays for and the names of the entrants if they are not all the same.
- Fold and rubber band each entry form to each bottle. Your entry will be disqualified if you use glue or tape to secure the form to the bottle.
- Pack your bottles carefully. (See Part III, Section I.)
- Ship your box to the appropriate address given on the Site Locator Map in PART VI of these guidelines. Sites cannot acknowledge receipt of entries – arrange for a return receipt with your shipping company if you wish to confirm delivery of your package. Packages with postage due or C.O.D. charges will be returned to sender.

6. Which category do I enter?

It is entirely your decision. You should try to enter your brew in the category and subcategory you feel it will perform best. Judges do not see your entry form. Judges or organizers will not classify or reclassify your beer. Your entry will not be disqualified if it falls outside of a category's parameters – the descriptions are guidelines to help you enter your beer. Judges use the guidelines to guide them while judging your beer.

7. Are there entry limitations?

- You may not submit more than one entry per subcategory.
- Your homebrew must not have been brewed at any place that brews beverages for any commercial purpose, whether for commercial research, production or any other purpose, including brew-on-premise establishments.
- You must give the names of all brewers who helped in the brewing.

PART II – INSTRUCTIONS FOR COMPLETING THE ENTRY/RECIPE FORM

Entry Form Section A: Brewers Information

Please print clearly or type. In Item 1 fill in the name of the brewer who is responsible for receiving mailings and results. In Item 2 fill in the full names of all other brewers who participated in brewing the entry. In Items 3 through 6 write the address where mailings and results should be sent. Fill in Items 7 through 11 as applicable.

Entry Form Section B: Entry Information

In Item 12 write out the full names of the category and subcategory you are entering. In Items 13 and 14 write the category number and subcategory letter you are entering. Directors, judges or registrars will not classify or reclassify your entry under any circumstances. For item 16 circle the appropriate item for your mead or cider entry.

Important information for Item 17: If you enter 3c, 20b, 20c, 21, 22, 23, 25, 26, 27, 28c, 28d, please follow the instructions below very carefully to give information for Item 17. LEAVE ITEM 17 BLANK IF YOU HAVE NOT ENTERED THE ABOVE CATEGORIES. The information in Item 17 is necessary for accurate judging of entries in these categories. In all cases do not give brand names, geographic names or any proper names of special ingredients indicating the origin or identity of the brewer. For example, if you used Premier Malt Extract, Briess pale malt, Washington apples or Idaho clover honey, only enter malt extract, pale malt, apples or clover honey, respectively. Judges use this information for evaluating entries in these categories.

Entries in 3c: Give the type of fruit you used.

Entries in 20b and 20c: If you enter 20b, give the emulated classic style and the type of smoking wood or liquid smoke used (for example: birch-smoked porter, apple-smoked Scottish ale, etc.). If you enter 20c, give the special ingredients used and the type of smoking wood or liquid smoke used.

Entries in 21: If you enter 21a, list the fruit(s) or vegetable(s) used. If you enter 21b, list the fruit(s) you used and give the emulated classic style (for example: raspberry stout, blueberry Pilsener, plum India pale ale). If you used any other special ingredient in addition to the fruit, enter your beer in category 23: Specialty and Experimental Beer.

Entries in 22: If you are entering 22a, list the herb(s) you used. If you are entering 22b, list the herb(s) you used and give the classic style you have emulated. For example: nutmeg stout, chili Pilsener, coriander India pale ale. If you have used any other special ingredients in addition to the herbs, enter your beer in category 23: Specialty and Experimental Beer.

Entries in 23: If you enter 23a, write the special technique or ingredients used. If you used both fruit and herbs, list them. If you enter 23b, give the emulated classic style (for example: honey Pilsener, cinnamon maple stout or fennel seed porter).

Entries in 25: Give the type of honey used.

Entries in 26: Give the fruit(s) or vegetables and the type of honey used.

Entries in 27: Give the herb(s) or spice(s) and the type of honey used.

Entries in 28c and 28d: In 28c indicate whether your entry is still or sparkling New England-style cider. In 28d give the special ingredients and/or special yeast used.

1997 Rules and Regulations

AMERICAN HOMEBREWERS ASSOCIATION 1997 NATIONAL HOMEBREW COMPETITION

PART III – THE FINE PRINT

A. General

This Competition is open to all homebrewers, AHA members and non-members. Contestants will be considered an individual entrant based on the name(s) appearing on the registration form. No employee of the Association of Brewers may enter. Persons under contract and/or persons volunteering their services to the Association of Brewers are eligible. First-round registrars, site directors and judge directors who enter must enter at a site other than the one they host. Judges may not judge a category they have entered. Applicable entry fees and limitations shall apply.

It is the sole responsibility of the entrant to complete all registration and recipe forms, enclose the proper entry fee and designate the category and subcategory in which he/she wishes his/her entry to be judged. Under no circumstances will registrars, judges or directors categorize entries.

Beer, mead and cider will be judged only in terms of the categories and subcategories listed in the Category Descriptions. Entries must be referred to by category NUMBER and subcategory LETTER. Dry, medium, sweet or very sweet must be designated for all mead and cider entries.

If a category does not have at least 20 entries in 1997, it will not be included in the 1998 Competition.

B. First-Round Awards and Prizes

- (1) First, second and third place will be awarded in each category at each first-round site. Entries must score 30 or better to place in the first-round and advance to the second-round. These winners will also contribute points for their respective clubs. Six points will be awarded for a first place, three for a second place and one point for a third place. These club points will be included in determining the Homebrew Club of the Year award. See Part III Section C (6).
- (2) Certificates will be awarded to first-round brewers whose achievements are outstanding based on judges' scoring and the following standards: Gold-Award winners have scores of 40 to 50, Silver-Award winners have scores of 30 to 39; Bronze-Award winners have scores of 25 to 29.
- (3) At the discretion of Competition organizers and/or judges, awards may not be given if the quality of an entry is not deemed deserving of an award.

C. Second-Round Awards and Prizes

- (1) Prizes will be awarded after second-round judging. First-, second- and third-place winners in each category will receive a gold, silver or bronze medal and commemorative stein.
- (2) First-place winners of each beer category will compete in a best-of-show judging. The winner will be awarded Homebrewer of the Year sponsored by Munton & Fison of England and the Great American Beer Festival.®
- (3) First-place winners of each mead category will compete in a best-of-show judging. The winner will be awarded Meadmaker of the Year sponsored by Madhava's Mountain Gold Honey of Lyons, Colo.
- (4) The first-place winner of the cider category will be awarded Cidermaker of the Year sponsored by Lyon's Brewery of Dublin, Dublin, Calif.
- (5) The Ninkasi Award will be given to the brewer(s) who accumulate(s) the most points in the 24 beer categories in this Competition. Six points are awarded for a first place, three points for a second place and one point for a third place. Individual members of a group of brewers do not earn points on an individual basis. For example, if Brewer A and Brewer B enter individually, they earn points individually, but if they enter as a team, they earn points as a team. Entry forms must list each member of the team of brewers to count toward the point total. There will be only one Ninkasi winner. In case of a tie, the AHA will use a tie-breaking system. The Ninkasi award is sponsored by Pete's Brewing Co. of Palo Alto, Calif.
- (6) The Homebrew Club of the Year award will be awarded to the club that accumulates the most points in all categories of beer, mead and cider. Six points are awarded for a first place, three points for a second place and one point for a third place. Points will be awarded according to the same point scale for the six annual AHA Club-Only Competitions (Mead Magic 1996, Best of Fest 1996, Belgian Blockbuster 1996, Hail to Ale 1997, Luscious Lager 1997 and Bock Is Best 1997) and added into the tally. In addition, points are earned under the same 6, 3, 1 system from first-round award winners. For your club to receive credit, you must have the club listed on the entry form AND the club must be registered with the AHA by April 1, 1997. These points will be counted toward the Homebrew Club of the Year Award. The Homebrew Club of the Year Award is sponsored by Coopers Brewery of Adelaide, Australia.
- (7) At the discretion of Competition organizers and/or judges, awards may not be given if the quality of an entry is deemed deserving of an award.

D. Judging

- (1) First-round judging of all beer and mead entries will be done in closed sessions at the AHA National Homebrew Competition first-round sites on May 17 and 18, 1997.

- (2) Second-round judging of qualifying beer and mead entries will be done at the AHA National Homebrewers Conference in Cleveland, Ohio, July 17, 1997.
- (3) Best-of-show judging of qualifying beer and mead entries will be done at the AHA National Homebrewers Conference in Cleveland, Ohio, June 18, 1997.
- (4) All rounds of judging for cider entries will be completed at the appropriate National Homebrew Competition site May 17 and 18, 1997.
- (5) Judges and stewards are needed for first and second rounds. Qualified and interested individuals are encouraged to contact the AHA after March 1, 1997.
- (6) All decisions by Competition organizers are final.

E. AHA Membership

Non-members may receive membership status by enclosing the \$33 annual membership fee with Competition entry fees. If you want to become a member of the AHA, circle "Yes" in Item 9 of the entry form. Send separate checks for your membership and your entries. All checks should be made payable to the American Homebrewers Association (or A.H.A.).

F. Recipe Requirement

A recipe is not required to enter the first round. However, if your entry advances to the second round you must submit a recipe. Upon entering this Competition, entrants agree to allow (at no cost) publication of their recipe by the Association of Brewers or any of its divisions in any publication. The recipe becomes the intellectual property of the A.H.A. Entrant will receive all due credit.

G. Information and Fees Requirement

All entry fees, names of competitors, address, phone number, category and subcategory entered, and recipes must accompany entries when submitted. No entries will be returned whether received late or otherwise. All entries become property of the AHA.

H. Disqualifications

At the discretion of the AHA and volunteer Competition organizers, entries will be disqualified for eligibility or entry requirement infractions. These entries may still be judged, but will be ineligible for awards or prizes.

I. Results and Qualifying for Second-Round

All entrants will receive the score sheets with judges' comments for his/her entries. Results will be mailed via first-class mail by June 12, 1997. The first-, second- and third-place winners in each category from each first-round site will advance to the second round of the Competition. If your beer or mead qualifies for the second-round judging, the AHA will notify you by first-class mail by June 10, 1997. You will be instructed on how, when and where to send three (3) additional bottles for judging, to be received in the Cleveland area between Monday, July 7, and 5 p.m. Friday, July 11, 1997. Contestants are advised to refrigerate potential second-round entries to minimize changes in character. Second-round brewers must also submit a recipe form with their entries.

J. Packing and Shipping Hints

Carefully pack your entries in a sturdy box. Line the inside of your carton with a plastic trash bag. Partition and pack each bottle with adequate packaging material. Do not overpack! Write clearly: "Fragile, Glass. This Side Up." on the package. Your package should weigh less than 25 pounds.

Every reasonable effort will be made to contact entrants whose bottles have broken to make arrangements for sending replacement bottles. We strongly recommend reusable shipping containers or the kind of shipping containers used by beer-of-the-month clubs. These containers help ensure your beer will arrive safely and will significantly reduce the amount of packaging waste. Please refrain from using packing "peanuts" if possible. Use bubble wrap or newspaper instead. Sites make efforts to recycle packaging material whenever possible.

Refer to the article on "How to Pack Your Beer," in *Zymurgy* Spring 1991 (Vol. 14, No. 1) for excellent advice on how to save time, money and avoid broken bottles. A product review in *Zymurgy* Spring 1993 (Vol. 16, No. 1) of reusable containers specially designed for shipping homebrew is also available. Also refer to an article about entering competitions in *Zymurgy* Spring 1996 (Vol. 19, No. 1). Copies of these articles are available for free upon request if accompanied with a self-addressed stamped envelope or call the AHA, (303) 447-0816.

It is not against any Bureau of Alcohol, Tobacco and Firearms regulations or federal laws to ship your entries via a privately owned shipping company for analytical purposes. However, it is illegal to ship alcoholic beverages via the U.S. Postal Service. Private shipping companies may refuse your shipment if they are informed that the package contains alcoholic beverages. Be aware that entries mailed internationally are often required by customs to have proper documentation. These entries might be opened and/or returned to the shipper by customs' officials at their discretion. It is solely the entrant's responsibility to follow all applicable laws and regulations.

1997 Category Descriptions

AMERICAN HOMEBREWERS ASSOCIATION 1997 NATIONAL HOMEBREW COMPETITION

PART IV – CATEGORY DESCRIPTIONS

Carefully read each style description before selecting a specific category for your entry. Category numbers have been changed in some cases.

There are 24 categories of lager, ale or mixed-style beers; three categories of mead; and one category of cider. All have subcategories that use small-letter designations. If a beer is entered, for example, as “10b) strong Scotch ale” it will be judged as a Strong Scotch Ale against the other entries in the English and Scottish Strong Ale category.

The following section gives more detailed information about each category and subcategory. Use this information to decide how to enter your homebrew. Please note that when a style characteristic is designated “OK,” this means it does not have to be apparent but it is permissible in amounts indicated. When the term “noble-type” hops is used, it refers to European continental-type hops such as Saaz, Hallertauer, Tettnanger and Spalt, to name a few.

Categories are designated by numbers. Subcategories are designated by letters. Please note the Style Guidelines Chart and the instructions for entering.

ALES

Ales are distinguished by the use of top-fermenting *Saccharomyces cerevisiae* yeast strains. These strains perform at warmer temperatures, the ferments are faster, and fermentation byproducts are generally more evident. Ales tend to have a very complex palate where esters and fruity qualities are part of the character.

1. Barley Wine

Category award is sponsored by Edme Ltd., Mistley, Manningtree, England.

- a) English-Style Barley Wine – Tawny copper to dark brown in color with a full body and high residual malty sweetness. Complexity of alcohols and fruity-ester characters are often high and counterbalanced by the perception of low to medium bitterness and extraordinary alcohol content. Hop aroma and flavor may be minimal to medium, and use of English hop varieties is typical. Diacetyl should be very low. A caramel and vinous aroma and flavor are part of the character. Chill haze is allowable at cold temperatures.
- b) American-Style Barley Wine – Tawny copper to dark brown in color with a full body and high residual malty sweetness. Complexity of alcohols and fruity-ester characters are often high and counterbalanced by the perception of medium to assertive bitterness and extraordinary alcohol content. Hop aroma and flavor may be medium to very high, and use of American hop varieties is typical. Diacetyl should be very low. A caramel and vinous aroma and flavor are part of the character. Chill haze is allowable at cold temperatures.

2. Belgian and French Ale

Category award is sponsored by Manneken-Brussel Imports Inc., S.A. Bieres de Chimay, Austin, Texas.

- a) Flanders Brown/Oud Bruin – A light- to medium-bodied, deep copper to brown ale characterized by a slight vinegar or lactic sourness and spiciness. A fruity-estery character is apparent with no hop flavor or aroma. Flanders brown ales have low to medium bitterness. Very small quantities of diacetyl are acceptable. Roasted malt character in aroma and flavor is acceptable at low levels.
- b) Dubbel – This medium- to full-bodied, dark amber- to brown-colored ale has a malty sweetness and nutty, chocolate, roast malt aroma. A faint hop aroma is acceptable. Dubbels also are characterized by low bitterness and no hop flavor. Very small quantities of diacetyl are acceptable. Fruity esters (especially banana) are appropriate at low levels. Head retention is dense and mousseline.
- c) Tripel – Tripels often are characterized by a spicy, phenolic-clove flavor. A banana fruity ester also is common. These pale/light-colored ales usually finish sweet. The beer is characteristically medium to full-bodied with a neutral hop and malt balance. Low hop flavor is OK. Alcohol strength and flavor should be perceived as evident.

d) Belgian-Style Pale Ale – Belgian-style pale ales are characterized by low, but noticeable, hop bitterness, flavor and aroma. Light to medium body and low malt aroma are typical. They are golden to deep amber in color. “Noble-type” hops are commonly used. Low to medium fruity esters are evident in aroma and flavor. Low caramel or toasted malt flavor is OK. Diacetyl should not be perceived. Chill haze is allowable at cold temperatures.

e) Belgian Strong Ale – Belgian strong ales can range from pale to dark brown and often are vinous, with darker styles typically colored with dark candi sugar. The perception of hop bitterness can vary from low to high, while hop aroma and flavor are very low. These beers are highly attenuated and have a highly alcoholic character – being medium bodied rather than full bodied. Very little or no diacetyl is perceived. Chill haze is allowable at cold temperatures.

f) White (or Wit) – Belgian white ales are brewed using unmalted and/or malted wheat and malted barley and can be spiced with coriander and orange peel. These very pale beers are typically cloudy. The style is further characterized by the use of “noble-type” hops to achieve a low to medium bitterness and hop flavor. This dry beer has low to medium body, no diacetyl and a notable fruity-ester content.

g) Bière de Garde – Deep golden to deep copper/light brown. Medium to high malt flavor. Light to medium body. Medium hop bitterness. Light to medium hop flavor and aroma. May have light to medium fruitiness, esteriness. Lager yeast may be used. Earthy, cellarlike, musty aromas are OK. Traditionally, a French-style beer that improves with some aging.

3. Belgian-Style Lambic

Category award is sponsored by L.D. Carlson Co., Kent, Ohio.

- a) Belgian-Style Lambic – Unblended, naturally fermented lambic is intensely estery, sour and acetic flavored. Low in carbonation, these hazy beers are brewed with unmalted wheat and malted barley. They are very low in hop bitterness. Cloudiness is acceptable. These beers are quite dry and light bodied.
- b) Belgian-Style Gueuze Lambic – These unflavored blended and bottle fermented lambic beers may be very dry or mildly sweet and are characterized by intensely fruity-estery, sour and acidic flavors. These pale beers are brewed with unmalted wheat, malted barley, and stale, aged hops. They are very low in hop bitterness. Cloudiness is acceptable. These beers are quite dry and light bodied.
- c) Belgian-Style Fruit Lambic – These beers, also known by the names framboise, kriek, peche, etc., are characterized by fruit flavors and aromas. The intense color reflects the choice of fruit. Sourness predominates the flavor profile. These flavored Belgian-style lambic beers may be very dry or mildly sweet.

4. Mild and Brown Ale

Category award is sponsored by Premier Malt Products, Grosse Pointe, Mich.

- a) English Light Mild – Range from light amber to light brown in color. Malt sweet tones dominate the flavor profile with little hop bitterness or flavor. Hop aroma can be light. Very low diacetyl flavors may be appropriate in this low-alcohol beer. Fruity ester level is very low. Chill haze is allowable at cold temperatures.
- b) English Dark Mild – English dark milds range from deep copper to dark brown (often with a red tint) in color. Malt sweet, caramel, licorice and roast malt tones dominate the flavor and aroma profile with very little hop flavor or aroma. Very low diacetyl flavors may be appropriate in this low-alcohol beer. Fruity-ester level is very low.
- c) English Brown Ale – Range from deep copper to brown in color. They have a medium body, and a dry to sweet maltiness dominates with very little hop flavor or aroma. Fruity-ester flavors are appropriate. Diacetyl should be very low, if evident. Chill haze is allowable at cold temperatures.
- d) American Brown Ale – Range from deep copper to brown in color. Evident hop aroma and increased bitterness. They have medium body. Estery and fruity-ester characters should be subdued, and diacetyl should not be perceived. Chill haze is allowable at cold temperatures.

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5. English-Style Pale Ale

Category award is sponsored by Wynkoop Brewing Co., Denver, Colo.

- a) Classic English Pale Ale – Golden- to copper colored and displays English-variety hop character. High hop bitterness, flavor and aroma should be evident. This medium-bodied pale ale has low to medium maltiness. Low caramel is allowable. Fruity-ester flavors and aromas are moderate to strong. Chill haze is allowable at cold temperatures. Diacetyl (butterscotch character) should be at very low levels or not perceived.
- b) India Pale Ale – Characterized by intense hop bitterness with an elevated alcohol content. A high hopping rate and the use of water with high mineral content result in a crisp, dry beer. This golden- to deep-copper-colored ale has a full, flowery hop aroma and may have a strong hop flavor (in addition to the hop bitterness). Hop character can be derived from American or English hop varieties. India pale ales possess medium maltiness and body. Fruity-ester flavors and aromas are moderate to very strong. Chill haze is allowable at cold temperatures.

6. American-Style Ale

Category award is sponsored by Northwestern Extract Co., Brookfield, Wis.

- a) American Pale Ale – Range from golden to light copper color. The style is characterized by American-variety hops used to produce medium to high hop bitterness, flavor and aroma. American pale ales have medium body and low to medium maltiness. Low caramel character is allowable. Fruity-ester flavor and aroma should be moderate to strong. Diacetyl should be absent or present at very low levels. Chill haze is allowable at cold temperatures.
- b) American-Style Amber Ale – American amber ales range from light copper to light brown in color. Amber ales are characterized by American-variety hops used to produce medium to high hop bitterness, flavor and aroma. Amber ales have medium to high maltiness with medium to low caramel character. They should have medium body. The style may have low levels of fruity-ester flavor and aroma. Diacetyl should be absent or barely perceived. Chill haze is allowable at cold temperatures.
- c) American Wheat – This beer can be made using either an ale or lager yeast. Brewed with 30 to 50 percent wheat, hop rates may be higher, and carbonation is lower than German-style wheat beers. A fruity-estery aroma and flavor is typical but at low levels; however, phenolic, clovelike characteristics should not be perceived. Color is usually golden to light amber, and the body should be light to medium in character. Diacetyl should be at very low levels.

7. English Bitter

Category award is sponsored by Alternative Beverage, Charlotte, N.C.

- a) English Ordinary Bitter – Ordinary bitter is gold to copper colored with medium bitterness, light to medium body, and low to medium residual malt sweetness. Hop flavor and aroma character may be evident at the brewer's discretion. Mild carbonation traditionally characterizes draft-cask versions, but in bottled versions, a slight increase in carbon dioxide content is acceptable. Fruity-ester character and very low diacetyl (butterscotch) character are acceptable in aroma and flavor but should be minimized in this form of bitter. Chill haze is allowable at cold temperatures.
- b) English (Special) Best Bitter – Special bitter is more robust than ordinary bitter. It has medium body and medium residual malt sweetness. It is gold to copper colored with medium bitterness. Hop flavor and aroma character may be evident at the brewer's discretion. Mild carbonation traditionally characterizes draft-cask versions, but in bottled versions, a slight increase in carbon dioxide content is acceptable. Fruity-ester character and very low diacetyl (butterscotch) character are acceptable in aroma and flavor. Chill haze is allowable at cold temperatures.
- c) English (Extra Special) Strong Bitter – Extra special bitter possesses medium to strong hop qualities in aroma, flavor and bitterness. The residual malt sweetness of this richly flavored, full-bodied bitter is more pronounced than in other bitters. It is gold to copper

colored with medium bitterness. Mild carbonation traditionally characterizes draft-cask versions, but in bottled versions, a slight increase in carbon dioxide content is acceptable. Fruity-ester character and very low diacetyl (butterscotch) character are acceptable in aroma and flavor. Chill haze is allowable at cold temperatures.

8. Scottish Ale

Category award is sponsored by BEERCRAFTERS INC., Turnersville, N.J.

- a) Scottish Light Ale – Scottish light ales are light bodied. Little bitterness is perceived, and hop flavor or aroma should not be perceived. Despite its lightness, Scottish light ale will still have a low degree of malty, caramellike, soft and chewy character. Yeast characters such as diacetyl (butterscotch) and sulfuriness are acceptable at very low levels. The color will range from golden amber to deep brown in color and may possess a faint smoky character. Bottled versions of this traditional draft beer may contain higher amounts of carbon dioxide than are typical for draft versions. Chill haze is acceptable at low temperatures.
- b) Scottish Heavy Ale – Scottish heavy ale is moderate in strength and dominated by a smooth, sweet maltiness balanced with low, but perceptible, hop bitterness. Hop flavor or aroma should not be perceived. Scottish heavy ale will have a medium degree of malty, caramellike, soft and chewy character in flavor and mouthfeel. It has medium body, and fruity esters are very low, if evident. Yeast characters such as diacetyl (butterscotch) and sulfuriness are acceptable at very low levels. The color will range from golden amber to deep brown in color and may possess a faint smoky character. Bottled versions of this traditional draft beer may contain higher amounts of carbon dioxide than is typical for draft versions. Chill haze is acceptable at low temperatures.
- c) Scottish Export Ale – Overriding characters of Scottish export ale are sweet, caramellike and malty. Its bitterness is perceived as low to medium. Hop flavor or aroma may be perceived at low levels. It has medium body. Fruity-ester character may be apparent. Yeast characters such as diacetyl (butterscotch) and sulfuriness are acceptable at very low levels. The color will range from golden amber to deep brown in color and may possess a faint smoky character. Bottled versions of this traditional draft beer may contain higher amounts of carbon dioxide than is typical for draft versions. Chill haze is acceptable at low temperatures.

9. Porter

Category award is sponsored by The Cellar Homebrew, Seattle, Wash.

- a) Brown Porter – Brown porters are mid to dark brown (may have red tint) in color. No roast barley or strong burnt malt character should be perceived. Low to medium malt sweetness is acceptable along with medium hop bitterness. This is a light- to medium-bodied beer. Fruity esters are acceptable. Hop flavor and aroma may vary from being negligible to medium in character.
- b) Robust Porter – Robust porters are black in color and have a roast malt flavor but no roast barley flavor. These porters have a sharp bitterness of black malt without a highly burnt/charcoal flavor. Robust porters range from medium to full in body and have a malty sweetness. Hop bitterness is medium to high, with hop aroma and flavor ranging from negligible to medium. Fruity esters should be evident and balanced with roast malt and hop bitterness.

10. English and Scottish Strong Ale

Category award is sponsored by Wine & Hop Shop, Denver, Colo.

- a) English Old Ale/English Strong Ale – Amber to copper to medium brown in color, English strong ales are medium to full bodied with a malty sweetness. Fruity-ester flavor and aroma should contribute to the character of this ale. Bitterness should be evident and balanced with malt and/or caramel sweetness. Alcohol types can be varied and complex. Chill haze is acceptable at low temperatures.
- b) Strong Scotch Ale – Scotch ales are overwhelmingly malty and full bodied. Perception of hop bitterness is very low. Hop flavor and aroma are very low or nonexistent. Color ranges from deep copper to brown. The clean alcohol flavor balances the rich and

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dominant sweet maltiness in flavor and aroma. A caramel character is often a part of the profile. Fruity esters are generally at medium aromatic and flavor levels. A peaty/smoky character may be evident at low levels. Low diacetyl levels are acceptable. Chill haze is allowable at cold temperatures.

11. Stout

Category award is sponsored by Alternative Garden Supply D/B/A Brew & Grow, Streamwood, Ill.

- a) **Classic Irish-Style Dry Stout** – Dry stouts have an initial malt and caramel flavor profile with a distinctive dry-roasted bitterness in the finish. Dry stouts achieve a dry-roasted character through the use of roasted barley. Some slight acidity may be perceived but is not necessary. Hop aroma and flavor should not be perceived. Dry stouts have a light to medium body. Fruity esters are minimal and overshadowed by notable hop bitterness and roasted barley character. Diacetyl (butterscotch) should be very low or not perceived. Head retention and rich character should be part of its visual character.
- b) **Foreign-Style Stout** – Foreign-style stouts have an initial malt sweetness and caramel flavor with a distinctive dry-roasted bitterness in the finish. Some slight acidity is permissible, and a medium- to full-bodied mouthfeel is appropriate. Hop aroma and flavor should not be perceived. The perception of fruity esters is low. Diacetyl (butterscotch) should be negligible or not perceived. Head retention is excellent.
- c) **Sweet Stout** – Sweet stouts, also referred to as cream stouts, have less roasted bitter flavor and more full-bodied mouthfeel than dry stouts. The style can be given more body with milk sugar (lactose) before bottling. Malt sweetness, chocolate and caramel flavor should dominate the flavor profile. Hops should balance sweetness without contributing apparent flavor or aroma.
- d) **Oatmeal Stout** – Oatmeal stouts typically include oatmeal in their grist, resulting in a pleasant, full flavor and smooth profile that is rich without being grainy. Roasted malt character of caramel and chocolate should be evident, smooth and not bitter. Bitterness is moderate – not high. Hop flavor and aroma are optional but should not overpower the overall balance. This is a medium- to full-bodied beer with minimal fruity esters.
- e) **Imperial Stout** – Dark copper to very black, imperial stouts typically have alcohol contents exceeding 8 percent. The extremely rich malty flavor and aroma are balanced with assertive hopping and fruity-ester characteristics. Perceived bitterness can be moderate, balanced with malt character, to very high in the darker versions. Roasted malt astringency and bitterness can be perceived moderately but should not overwhelm the overall character. Hop aroma can be subtle to overwhelmingly floral. Diacetyl (butterscotch) levels should be very low.

LAGER

Lagers are produced with bottom-fermenting *Saccharomyces uvarum* (a.k.a. *S. carlsbergensis*) strains of yeast at colder fermentation temperatures than ales. This cooler environment inhibits the natural production of esters and other fermentation byproducts, creating a “cleaner-tasting” product.

12. Bock

Category award is sponsored by Washington Hop Commission, Yakima, Wash.

- a) **Traditional Bock** – Traditional bocks are made with all malt and are strong, malty, medium- to full-bodied, bottom-fermented beers with low hop bitterness that should increase proportionately with the starting gravity. Hop flavor should be low, and hop aroma should be very low. Bocks can range in color from deep copper to dark brown. Fruity esters may be perceived at low levels.
- b) **German-Style Helles Bock/Maibock** – The German word “helles” means light colored, and, as such, a helles bock is light in color. Maibocks also are light-colored bocks. The malty character should come through in the aroma and flavor. Body is medium to full. Hop bitterness should be low, while “noble-type” hop aroma and

flavor may be at low to medium levels. Bitterness increases with gravity. Fruity esters should be minimal. Diacetyl levels should be very low. Chill haze should not be perceived.

- c) **Doppelbock** – Malty sweetness is dominant but should not be cloying. Doppelbocks are full bodied and deep amber to dark brown color. Astringency from roast malts is absent. Alcoholic strength is high and hop rates increase with gravity. Hop bitterness and flavor should be low and hop aroma absent. Fruity esters are commonly perceived, but at low to moderate levels.
- d) **Eisbock** – Deep copper to black. Very alcoholic. Aroma and flavor profile is similar to doppelbock. Traditionally brewed by freezing a doppelbock and removing the resulting ice to concentrate the beer and increase the alcohol content.

13. German Dark Lager

Category award is sponsored by Homebrew Headquarters, Dallas, Texas.

- a) **Munich Dunkel** – These beers have a pronounced malty aroma and flavor that dominate over the clean, crisp, moderate hop bitterness. A classic Münchner dunkel should have a chocolatelike, roasted malt, breadlike aroma that comes from the use of Munich dark malt. Chocolate or roast malts can be used, but the percentage should be minimal. “Noble-type” hop flavor and aroma should be low but perceptible. Diacetyl is acceptable at very low levels. Fruity esters and chill haze should not be perceived.
- b) **Schwarzbier** – Dark brown to black. Medium body. Roasted malt evident. Low sweetness in aroma and flavor. Low to medium bitterness. Low bitterness from roast malt. “Noble-type” hop flavor and aroma are OK. No fruitiness, esters. Low diacetyl OK.

14. German Light Lager

Category award is sponsored by Briess Malting Co., Chilton, Wis.

- a) **Munich Helles** – This beer has a relatively low bitterness. It is a medium-bodied malt-emphasized beer, however certain versions can approach a balance of hop character and maltiness. There should not be any caramel character. Color is light straw to golden. Fruity esters and diacetyl should not be perceived.
- b) **Dortmunder/European-Style Export** – Both starting gravity and medium bitterness are somewhat higher than a Munich helles. Hop flavor and aroma are perceptible but low. The color of this style may be slightly darker, and the body will be more full but still medium bodied. Fruity esters, chill haze and diacetyl should not be perceived.

15. Classic Pilsener

Category award is sponsored by California Concentrates, Acampo, Calif.

- a) **German-Style Pilsener** – A classic German Pilsener is very light straw/golden color and well hopped. Hop bitterness is high. Hop aroma and flavor are moderate and quite obvious. It is a well-attenuated and medium-bodied beer, but a malty accent can be perceived. Fruity esters and diacetyl should not be perceived. There should be no chill haze. The head should be dense and rich.
- b) **Bohemian-Style Pilsener** – Pilseners in this subcategory are similar to German Pilseners, however they are slightly more full bodied and can be as dark as light amber. This style balances moderate to high bitterness and “noble-type” hop aroma and flavor with a malty, slightly sweet medium body. Diacetyl may be perceived in very low amounts. There should be no chill haze. The head should be dense and rich.
- c) **American-Style Pilsener** – This classic and unique Pre-Prohibition American-style Pilsener is straw to deep gold in color. Hop bitterness, flavor and aroma are medium to high, and use of “noble-type” hops for flavor and aroma is preferred. Up to 25 percent corn in the grist should be used, and some slight sweetness and flavor of corn are expected. A low level of DMS is acceptable. Malt flavor and aroma are medium. This is a medium bodied beer. Fruity esters and citrusy flavors or aromas should not be perceived. Slight diacetyl is acceptable. There should be no chill haze.

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16. American Lager

Category award is sponsored by Pabst Brewing Co., Milwaukee, Wis.

- a) American Lager— Very light in body and color, American lagers are very clean, crisp and aggressively carbonated. Malt sweetness is absent. Corn, rice or other grain or sugar adjuncts are often used. Hop aroma is absent. Hop bitterness is slight, and hop flavor is mild or negligible. Chill haze, fruity esters and diacetyl should be absent.
- b) American-Style Light Lager – According to Food and Drug Administration regulations, when used in reference to caloric content, “light” beers must have at least 25 percent fewer calories than the “regular” version of that beer. These beers are extremely light colored, light in body and high in carbonation. Flavor is mild, and bitterness is very low. Chill haze, fruity esters and diacetyl should be absent.
- c) American Lager/Ale or Cream Ale – This mild, pale, light-bodied ale is made using a warm fermentation (top or bottom) and cold lagering or by blending top- and bottom-fermented beers. Hop bitterness and flavor are very low. Hop aroma often is absent. Sometimes referred to as cream ales, these beers are crisp and refreshing. A fruity or estery aroma may be perceived. Diacetyl and chill haze should not be perceived.
- d) American-Style Premium Lager – Similar to the American lager, this style is a more flavorful, medium-bodied beer and may contain few or no adjuncts. Color may be deeper than the American lager, and alcohol content and bitterness may be greater. Hop aroma and flavor are low or negligible. Chill haze, fruity esters and diacetyl should be absent.
- e) American Dark Lager – This beer’s maltiness is less pronounced, and its body is light. Non-malt adjuncts often are used, and hop rates are low. Hop bitterness flavor and aroma are low. Carbonation is high and more typical of an American-style light lager than a European dark lager. Fruity esters, diacetyl and chill haze should not be perceived.

17. Vienna/Märzen/Okttoberfest

Category award is sponsored by F.H. Steinbart, Portland, Ore.

- a) Vienna – Beers in this category are reddish brown or copper colored. They are light to medium in body. The beer is characterized by malty aroma, slight malt sweetness and clean hop bitterness. “Noble-type” hop aromas and flavors should be low to medium. Fruity esters, diacetyl and chill haze should not be perceived.
- b) Märzen/Okttoberfest – Märzens are characterized by a medium body and broad range of color. Oktoberfests can range from golden to reddish brown. Sweet or toasty maltiness should dominate slightly over a clean hop bitterness. Malt character should be toasted rather than strongly caramel. Hop aroma and flavor should be low but notable. Fruity esters are minimal, if perceived at all. Diacetyl and chill haze should not be perceived.

HYBRID/MIXED STYLES

The following beers are fermented or aged with mixed traditions. They can be brewed as an ale or lager (please include unusual ingredients) or be made using unusual techniques or procedures.

18. German-Style Ale

Category award is sponsored by H.C. Berger, Fort Collins, Colo.

- a) Kölsch – Kölsch is warm-fermented and aged at cold temperatures (German ale or alt-style beer). Kölsch is characterized by a golden color and a slightly dry, winy and subtly sweet palate. Caramel character should not be evident. The body is light. This beer has low hop flavor and aroma with medium bitterness. Wheat can be used in brewing this beer which is fermented using ale or lager yeasts. Fruity esters should be minimally perceived, if at all. Chill haze should be absent or minimal.
- b) Düsseldorf-Style Altbier – Copper to brown in color, this German ale may be highly hopped (though the 25 to 35 IBU range is more normal for the majority of altbiere from Düsseldorf) and has a medium body and malty flavor. A variety of malts, including wheat, may be used. Hop character may be evident in the flavor.

The overall impression is clean, crisp and flavorful. Fruity esters should be low. No diacetyl or chill haze should be perceived.

19. German-Style Wheat Beer

Category award is sponsored by Tabernash Brewing Co., Denver, Colo.

- a) Berliner Weisse – This is the lightest of all the German wheat beers. The unique combination of a yeast and lactic acid bacteria fermentation yields a beer that is acidic, highly attenuated and very light bodied. The carbonation of a Berliner weisse is high, and hop rates are very low. Hop character should not be perceived. Fruity esters are evident. No diacetyl should be perceived.
- b) Weizen/Weissbier – The aroma and flavor of a weissbier is decidedly fruity and phenolic. The phenolic characteristics are often described as clove- or nutmeglike and can be smoky or even vanillalike. These beers are made with at least 50 percent malted wheat, and hop rates are quite low. Weissbier is highly carbonated and medium- to full-bodied. Bananalike esters are often present. If yeast is present, the beer will appropriately have a subtle breadlike yeast flavor and a characteristically fuller mouthfeel. No diacetyl should be perceived. Cloudiness is OK.
- c) Dunkelweizen – This beer style is characterized by a distinct sweet maltiness, and roasted malt and chocolatelike character, but the estery and phenolic elements of a pale weissbier are present. Color can range from copper-brown to dark brown. Carbonation and hop bitterness are similar to a pale South German-style weissbier. Usually dark barley malts are used in conjunction with dark Cara or color malts, and the percentage of wheat malt is at least 50 percent. No diacetyl should be perceived.
- d) Weizenbock – This style can be either pale or dark and, like a bottom-fermented bock, has a high starting gravity and alcohol content. The malty sweetness of a weizenbock is balanced with a clovelike phenolic and fruity-estery banana element to produce a well-rounded aroma and flavor. As is true with all German wheat beers, hop rates are low, and carbonation is high. It has a medium to full body. If dark, a mild roast malt character should emerge in flavor and, to a lesser degree, in the aroma. No diacetyl should be perceived.

20. Smoked Beer

Category award is sponsored by Jim's Homebrew Supply, Spokane, Wash.

- a) Bamberg-Style Rauchbier – Rauchbier should have smoky characters prevalent in the aroma and flavor. The beer is generally toasted, malty sweet and full bodied with low to medium hop bitterness. “Noble-type” hop flavor is low, but perceptible. Low “noble-type” hop aroma is optional. The aroma should strike a balance between malt, hop and smoke. Fruity esters, diacetyl and chill haze should not be perceived.
- b) Classic-Style Smoked Beer – Any classic style of beer can be smoked. The goal is to reach a balance between the style's character and the smoky properties.
- c) Other Smoked Beer – Any beer to which smoke flavors have been added.

21. Fruit and Vegetable Beer

Category award is sponsored by the Purple Foot, Milwaukee, Wis.

- a) Fruit and Vegetable Beer – Any beers using fruits or vegetables as an adjunct in either primary or secondary fermentation, providing obvious, yet harmonious, fruit and vegetable qualities. Fruit and vegetable qualities should not be overpowered by hop character. If a fruit or vegetable (such as juniper berry or chili pepper) has an herbal or spice quality, it is more appropriate to enter it in the Herb and Spice Beer category.
- b) Classic-Style Fruit and Vegetable Beer – Any classic-style beer using fruits or vegetables as part of the flavor profile and providing obvious, yet harmonious, fruit and vegetable qualities.

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22. Herb and Spice Beer

Category award is sponsored by Marin Brewing Co., Larkspur, Calif.

- a) Herb and Spice Beer – Use of herbs or spices (derived from roots, seeds, fruits, vegetables, flowers, etc.) other than hops to create a distinct character. Underhopping allows the spice or herb to contribute to the flavor profile.
- b) Classic-Style Herb and Spice Beer – Any classic-style beer using herbs or spices as part of the flavor profile and providing obvious, yet harmonious, herb and spice flavor.

23. Specialty and Experimental Beer

Category award is sponsored by U Brew Corp., Millburn, N.J.

Any ale or lager brewed using unusual techniques and/or ingredients other than (or in addition to) malted barley as a unique contribution to the overall character of the beer. Examples of specialty beers include (but are not limited to) beers brewed with honey, maple sap or syrup; worts heated with white-hot stones (Steinbier); and low- or nonalcoholic beers. Examples do not include the use of fruit or herbs, although they can be used to add to the character of other ingredients. The overall uniqueness and experimental quality of the beer should be considered.

- a) Specialty Beer – Any nonclassic style fitting the above description.
- b) Classic-Style Specialty Beer – Any classic ale or lager to which special ingredients have been added or a special process has been used. Examples include honey Pilsener, maple porter, sorghum stout, pumpkin pale ale. Brewer should specify classic style.

24. California Common Beer

Category award is sponsored by Anchor Brewing Co., San Francisco, Calif.

- a) California Common Beer – Light amber to copper. Medium body. Toasted or caramellike maltiness in aroma and flavor. Medium to high hop bitterness. Hop flavor medium to high. Aroma medium. Fruitness and esters low. Low diacetyl OK. Uses lager yeast. Fermented at warm temperatures but aged at cold temperatures.

MEAD

Mead is produced by the fermentation of honey, water, yeast and optional ingredients such as fruit, herbs and/or spices. The final gravity roughly determines whether the mead is: dry – less than 1.010, medium – 1.010 to 1.025 or sweet – 1.025 and higher. Final gravity is only a guide. The final flavor character of the product should be used to determine the perceived level of sweetness. The sweetness level must be designated on the entry form. Wine, champagne, sherry, mead, ale or lager yeast may be used. In all categories the honey character must be apparent in both the aroma and flavor, and an overall balance between sweetness, acidity and ingredients should be achieved. Honey should make up greater than 50 percent of fermentable ingredients. Meads should be free of harsh or stale characteristics.

25. Traditional Mead and Braggot

Category award is sponsored by Brandywine Farms, Novi, Mich.

- a) Sparkling Traditional Mead – Effervescent. Dry, medium or sweet (designate on entry form). Light to medium body. No flavors other than honey. Honey character in aroma and flavor. Low to medium fruity acidity. Color depends on honey type.
- b) Still Traditional Mead – Not effervescent. Dry, medium sweet or very sweet (designate on entry form). Light to full body. Honey character in aroma and flavor. Low to medium fruity acidity. Color depends on honey type.
- c) Sparkling Braggot – Effervescent. Made with malt and honey. Dry, medium or sweet (designate on entry form). Light to medium body. Honey flavors predominate.
- d) Still Braggot – Not effervescent. Made with malt. Dry, medium or sweet (designate on entry form). Light to medium body. Honey flavors predominate.

26. Fruit and Vegetable Mead

Category award is sponsored by the National Honey Board, Longmont, Colo.

Melomel is made with any fruit or vegetable except apples or grapes. Cyser is made with apples and/or apple juice. Pyment is made with grapes. Ingredients should be expressed in aroma and flavor. Color should represent ingredients. Honey character apparent in aroma and flavor. Absence of harsh or stale character. Can be dry, medium or sweet, which must be designated on entry form.

- a) Sparkling Melomel – Effervescent. Light to medium body.
- b) Still Melomel – Not effervescent. Light to full body.
- c) Sparkling Cyser – Effervescent. Light to medium body.
- d) Still Cyser – Not effervescent. Light to full body.
- e) Sparkling Pyment – Effervescent. Light to medium body.
- f) Still Pyment – Not effervescent. Light to full body.

27. Herb and Spice Mead

Category award is sponsored by Golden Grail Meadery, Dallas, Texas

Metheglin is made with any herbs or spices. Hippocras is made with spices and grapes (spiced pyment). Ingredients should be expressed in aroma and flavor. Color should represent ingredients. Honey character must be apparent in aroma and flavor. Absence of harsh or stale character. Can be dry, medium or sweet, which must be designated on entry form.

- a) Sparkling Metheglin – Effervescent. Light to medium body.
- b) Still Metheglin – Not effervescent. Light to full body.
- c) Sparkling Hippocras – Effervescent. Light to medium body.
- d) Still Hippocras – Not effervescent. Light to full body.

CIDER

Ciders are produced by the fermentation of apple juices and optional ingredients such as fruits and spices. Wine, champagne, ale, lager or wild yeasts may be used.

28. Cider

Category award is sponsored by Lyon's Brewery of Dublin, Dublin, Calif.

Cider made with honey as an adjunct (cyser) should be entered in category 26: Fruit and Vegetable Mead.

- a) Still – Not effervescent. Less than 5.5 percent alcohol by weight (7 percent by volume). Can be dry or sweet. Pale yellow color, must be clear or brilliant. Apple aroma. Light-bodied and crisp apple flavor. Sugar adjuncts may be used.
- b) Sparkling – Effervescent but not foamy. May be force carbonated. No head. Less than 6.3 percent alcohol by weight (8 percent by volume). Dry or sweet. Pale yellow color, must be clear and brilliant. Light to medium body, crisp apple taste. Sugar adjuncts may be used.
- c) New England-Style – Still or sparkling dry cider. Carbonation must be natural. Between 6.3 and 11 percent alcohol by weight (8 and 14 percent by volume). Pale to medium yellow color. Pronounced apple aroma. Medium to full body. Balanced by drying tannins but never hot because of excess alcohol. Adjuncts include white and brown sugars, molasses or raisins. Wild or wine yeasts only.
- d) Specialty Cider – Any and all adjuncts and yeasts may be used. Alcohol content must be below 11 percent alcohol by weight (14 percent by volume). At least 75 percent apple juice must be used in the must.



1997 Style Guidelines Chart

AMERICAN HOMEBREWERS ASSOCIATION 1997 NATIONAL HOMEBREW COMPETITION

	O.G. (°P) Original Gravity (Balling/Plato)	F.G. (°P) Final Gravity (Balling/Plato)	Percent Alc./Wgt. (Alc./Vol.)	IBUs Int'l Bittering Units	Color SRM (EBC)		O.G. (°P) Original Gravity (Balling/Plato)	F.G. (°P) Final Gravity (Balling/Plato)	Percent Alc./Wgt. (Alc./Vol.)	IBUs Int'l Bittering Units	Color SRM (EBC)
ALE											
1. BARLEY WINE											
a) English-Style Barley Wine	1.085-120 (21- 30.0)	1.024-32 (6-8)	6.7-9.6 (8.5-12.2)	50-100	14-22 (28-43)						
b) American-Style Barley Wine	1.085-120 (21- 30.0)	1.024-32 (6-8)	6.7-9.6 (8.5-12.2)	50-100	14-22 (28-43)						
2. BELGIAN AND FRENCH ALE											
a) Flanders Brown/Oud Bruin	1.044-56 (11.0-14.0)	1.008-16 (2-4)	3.8-4.1 (4.8-5.2)	15-25	12-18 (24-35)						
b) Dubbel	1.050-70 (12.5-17.5)	1.012-16 (3-4)	4.7-5.9 (6.0-7.5)	18-25	10-14 (20-28)						
c) Tripel	1.060-96 (15.0-24.0)	1.016-24 (4-6)	5.5-7.9 (7.0-10.1)	20-25	4-6 (7-11)						
d) Belgian Pale Ale	1.044-54 (11.0-13.5)	1.008-14 (2-4)	3.2-4.9 (4.1-6.2)	20-30	4-12 (7-24)						
e) Belgian Strong Ale	1.064-96 (16.0-24.0)	1.012-24 (3-6)	5.5-8.6 (7.0-11.0)	20-50	4-20 (7-39)						
f) White (Wit)	1.044-50 (11.0-12.5)	1.006-10 (2-3)	3.8-4.1 (4.8-5.2)	15-25	2-4 (4-8)						
g) Bière de Garde	1.060-80 (15.0-20.0)	1.012-16 (3-4)	3.5-6.3 (4.5-8.0)	25-30	8-12 (16-24)						
3. BELGIAN-STYLE LAMBIC											
a) Belgian-Style Lambic	1.044-56 (11.0-14.0)	1.000-10 (0-3)	4.0-5.0 (5.1-6.4)	11-23	6-13 (12-26)						
b) Belgian-Style Gueuze Lambic	1.044-56 (11.0-14.0)	1.000-10 (0-3)	4.0-5.0 (5.1-6.4)	11-23	6-13 (12-26)						
c) Belgian-Style Fruit Lambic	1.040-72 (10.0-18.0)	1.008-16 (2-4)	4.0-5.5 (5.1-7.0)	15-21	n/a						
4. MILD AND BROWN ALE											
a) English Light Mild	1.030-38 (7.5-9.5)	1.004-8 (1-2)	2.7-3.2 (3.4-4.1)	10-24	8-17 (16-33)						
b) English Dark Mild	1.030-38 (7.5-9.5)	1.004-8 (1-2)	2.7-3.2 (3.4-4.1)	10-24	17-34 (33-67)						
c) English Brown	1.040-50 (10.0-12.5)	1.008-14 (2-4)	3.3-4.7 (4.2-6.0)	15-25	15-22 (30-43)						
d) American Brown	1.040-55 (10.0-13.8)	1.010-18 (3-5)	3.3-4.7 (4.2-6.0)	25-60	15-22 (30-43)						
5. ENGLISH-STYLE PALE ALE											
a) Classic English Pale Ale	1.044-56 (11.0-14.0)	1.008-16 (2-4)	3.5-4.2 (4.5-5.4)	20-40	4-11 (8-22)						
b) India Pale Ale	1.050-70 (12.5-17.5)	1.012-18 (3-5)	4.0-6.0 (5.1-7.6)	40-60	8-14 (16-28)						
6. AMERICAN-STYLE ALE											
a) American Pale Ale	1.044-56 (11.0-14.0)	1.008-16 (2-4)	3.5-4.3 (4.5-5.5)	20-40	4-11 (8-22)						
b) American Amber Ale	1.044-56 (11.0-14.0)	1.006-16 (2-4)	3.5-4.3 (4.5-5.5)	20-40	11-18 (22-35)						
b) American Wheat	1.030-50 (7.5-12.5)	1.004-18 (1-5)	2.8-3.6 (3.6-4.6)	12-17	2-8 (4-16)						
7. ENGLISH BITTER											
a) English Ordinary Bitter	1.033-38 (8.2-9.5)	1.006-12 (2-3)	2.4-3.0 (3.1-3.8)	20-35	8-12 (16-24)						
b) English Best (Special) Bitter	1.038-45 (9.5-11.3)	1.006-12 (2-3)	3.3-3.8 (4.2-4.8)	28-46	12-14 (24-28)						
c) English Strong (Extra Special) Bitter	1.046-60 (11.5-15.0)	1.010-16 (3-4)	3.8-4.6 (4.8-5.9)	30-55	12-14 (24-28)						
8. SCOTTISH ALE											
a) Scottish Light Ale	1.030-35 (7.5-8.8)	1.006-12 (2-3)	2.2-2.8 (2.8-3.6)	9-20	8-17 (16-33)						
b) Scottish Heavy Ale	1.035-40 (8.7-10.0)	1.010-14 (3-4)	2.8-3.2 (3.6-4.1)	12-20	10-19 (20-37)						
c) Scottish Export Ale	1.040-50 (10.0-12.5)	1.010-18 (3-5)	3.2-3.6 (4.1-4.6)	15-25	10-19 (20-37)						
9. PORTER											
a) Brown Porter	1.045-60 (11.3-15.0)	1.008-16 (2-4)	3.5-4.7 (4.5-6.0)	20-30	20-30 (39-59)						
b) Robust Porter	1.045-60 (11.3-15.0)	1.008-16 (2-4)	4.0-5.2 (5.1-6.6)	25-40	30+ (59+)						
10. ENGLISH AND SCOTTISH STRONG ALE											
a) English Old Ale/English Strong Ale	1.055-75 (13.8-18.8)	1.012-20 (2-5)	4.8-6.4 (6.1-8.2)	30-40	10-16 (20-32)						
b) Strong Scotch Ale	1.072-85 (18.0-21.3)	1.016-28 (4-7)	5.2-6.7 (6.6-8.5)	25-35	10-25 (20-49)						
11. STOUT											
a) Classic Irish-Style Dry Stout	1.038-48 (9.5-12.0)	1.008-14 (2-4)	3.2-4.2 (4.1-5.4)	30-40	40+ (79+)						
b) Foreign-Style Stout	1.052-72 (13.0-18.0)	1.008-20 (2-5)	4.8-6.0 (6.1-7.6)	30-60	40+ (79+)						
c) Sweet Stout	1.045-56 (11.3-14.0)	1.012-20 (3-5)	2.5-5.0 (3.2-6.4)	15-25	40+ (79+)						
d) Oatmeal Stout	1.038-56 (9.5-14.0)	1.008-20 (2-5)	3.0-4.8 (3.8-6.1)	20-40	20+ (39+)						
e) Imperial Stout	1.075-90 (18.8-22.5)	1.020-30 (5-8)	5.5-7.0 (7.0-8.9)	50-80	20+ (39+)						
LAGER											
12. BOCK											
a) Traditional Bock	1.066-74 (16.5-18.5)	1.018-24 (5-6)	5.0-6.0 (6.4-7.6)	20-30	15-30 (30-59)						
b) German-Style Helles Bock/Maibock	1.066-68 (16.5-17.0)	1.012-20 (3-5)	5.0-6.0 (6.4-7.6)	20-35	4-10 (8-20)						
c) Doppelbock	1.074-80 (18.5-20.0)	1.020-28 (5-7)	5.2-6.2 (6.6-7.9)	17-27	12-30 (24-59)						
d) Eisbock	1.092-116 (23.0-29.0)	n/a	6.8-11.3 (8.7-14.4)	26-33	18-50 (35-99)						
13. GERMAN DARK LAGER											
a) Munich Dunkel	1.052-56 (13.0-14.0)	1.014-18 (4-5)	3.8-4.2 (4.8-5.4)	16-25	17-20 (33-39)						
b) Schwarzbier	1.044-52 (11.0-13.0)	1.012-16 (3-4)	3.0-3.9 (3.8-5.0)	22-30	25-30 (49-59)						
14. GERMAN LIGHT LAGER											
a) Münchener-Style Helles	1.044-50 (11.0-12.5)	1.008-12 (2-3)	3.8-4.4 (4.8-5.6)	18-25	3-5 (6-10)						
b) Dortmund/ European-Style Export	1.048-56 (12.0-14.0)	1.010-14 (3-4)	4.0-4.8 (5.1-6.1)	23-29	3-5 (6-10)						
15. CLASSIC PILSENER											
a) German-Style Pilsener	1.044-50 (11.0-12.5)	1.006-12 (2-3)	3.6-4.2 (4.6-5.4)	30-40	3-4 (6-8)						
b) Bohemian-Style Pilsener	1.044-56 (11.0-14.0)	1.014-20 (4-5)	3.2-4.0 (4.1-5.1)	35-45	3-5 (6-10)						
c) American-Style Pilsener	1.045-60 (11.3-15.0)	1.012-18 (3-5)	3.9-4.7 (5.0-6.0)	20-40	3-6 (6-12)						
16. AMERICAN LAGER											
a) American Lager	1.040-46 (10.0-11.5)	1.006-10 (2-3)	3.2-3.8 (4.1-4.8)	5-17	2-4 (4-8)						
b) American-Style Light Lager	1.024-40 (6.0-10.0)	1.002-8 (1-2)	2.8-3.5 (3.6-4.5)	8-15	2-4 (4-8)						
c) American Lager/Ale or Cream Ale	1.044-56 (11.0-14.0)	1.004-10 (1-3)	3.4-4.5 (4.3-5.7)	10-22	2-5 (4-10)						
d) American-Style Premium Lager	1.046-50 (11.5-12.5)	1.010-14 (3-4)	3.6-4.0 (4.6-5.1)	13-23	2-8 (4-16)						
f) American Dark Lager	1.040-50 (10.0-12.5)	1.008-12 (2-3)	3.2-4.4 (4.1-5.6)	14-20	10-20 (20-39)						
17. VIENNA/MÄRZEN/OKTOBERFEST											
a) Vienna	1.048-56 (12.0-14.0)	1.012-18 (3-5)	3.8-4.3 (4.8-5.5)	22-28	8-12 (16-24)						
b) Märzen/Oktoberfest	1.050-56 (12.5-14.0)	1.012-20 (3-5)	4.0-4.7 (5.1-6.0)	18-25	5-15 (8-30)						
MIXED STYLE											
18. GERMAN-STYLE ALE											
a) Kölsch	1.042-46 (10.5-11.5)	1.006-10 (2-3)	3.8-4.1 (4.8-5.2)	20-30	4-5 (7-10)						
b) Düsseldorf-Style Altbier	1.044-48 (11.0-12.0)	1.008-14 (2-4)	3.6-4.0 (4.6-5.1)	25-48	11-19 (22-37)						
19. GERMAN-STYLE WHEAT BEER											
a) Berliner Weisse	1.028-32 (7.0-8.0)	1.004-6 (1-2)	2.2-2.7 (2.8-3.4)	3-6	2-4 (4-8)						
b) Weizen/Weissbier	1.046-56 (11.5-14.0)	1.008-16 (2-4)	3.9-4.4 (5.0-5.6)	10-15	3-9 (6-18)						
c) Dunkelweizen	1.048-56 (12.0-14.0)	1.008-16 (2-4)	3.8-4.3 (4.8-5.5)	10-15	16-23 (32-45)						
d) Weizenbock	1.066-80 (16.5-20.0)	1.016-28 (4-7)	5.5-7.5 (7.0-8.6)	10-15	5-30 (10-59)						
20. SMOKED BEER											
a) Bamberg-Style Rauchbier	1.048-52 (12.0-13.0)	1.012-16 (3-4)	3.4-3.8 (4.3-4.8)	20-30	10-20 (20-39)						
b) Classic-Style Smoked Beer	refer to individual Classic Styles										
c) Other Smoked Beer	very widely										
21. FRUIT AND VEGETABLE BEER											
a) Fruit and Vegetable Beer	1.030-110 (7.5-27.5)	1.006-30 (2-8)	2.8-3.5 (2.5-12.1)	5-70	5-50 (10-99)						
b) Classic-Style Fruit Beer	refer to individual Classic Styles										
22. HERB AND SPICE BEER											
a) Herb and Spice Beer	1.030-110 (7.5-27.5)	1.006-30 (2-8)	2.0-9.5 (2.5-12.1)	5-70	5-50 (10-99)						
b) Classic-Style Herb & Spice Beer	refer to individual Classic Styles										
23. SPECIALTY BEER											
a) Specialty Beer	1.030-110 (7.5-27.5)	1.006-30 (2-8)	2.0-9.5 (2.5-12.1)	0-100	1-100 (2-197)						
b) Classic-Style Specialty Beer	refer to individual Classic Styles										
24. CALIFORNIA COMMON BEER											
a) California Common Beer	1.040-55 (10.0-12.0)	1.012-18 (3-5)	2.8-3.9 (3.6-5.0)	35-45	8-17 (16-33)						
25. TRADITIONAL MEAD AND BRAGGOT											
a) Sparkling Traditional Mead	1.050-100 (12.5-25.0)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
b) Still Traditional Mead	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
c) Sparkling Braggot	1.050-100 (12.5-25.0)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
d) Still Braggot	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
26. FRUIT AND VEGETABLE MEAD											
a) Sparkling Melomel	1.050-90 (12.5-22.5)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
b) Still Melomel	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
c) Sparkling Cyser	1.050-90 (12.5-22.5)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
d) Still Cyser	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
e) Sparkling Pyment	1.050-90 (12.5-22.5)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
f) Still Pyment	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
27. HERB AND SPICE MEAD											
a) Sparkling Metheglin	1.050-90 (12.5-22.5)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
b) Still Metheglin	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
c) Sparkling Hippocras	1.050-90 (12.5-22.5)	n/a	3.9-8.6 (5.0-11.0)	n/a	n/a						
d) Still Hippocras	1.090-140 (22.5-35.0)	n/a	8.6-11.8 (11.0-15.0)	n/a	n/a						
28. CIDER											
a) Still Cider	1.045-53 (11.3-13.3)	n/a	5.5 (7.0)	n/a	n/a						
b) Sparkling Cider	1.045-61 (11.3-15.3)	n/a	6.3 (8.0)	n/a	n/a						
c) New England-Style Cider	1.061-105 (15.3-26.3)	n/a	6.3-11.0 (8.0-14.0)	n/a	n/a						
d) Specialty Cider	1.045-105 (11.3-26.3)	n/a	4.6-11.0 (5.9-14.0)	n/a	n/a						

1997 Sponsors

AMERICAN HOMEBREWERS ASSOCIATION 1997 NATIONAL HOMEBREW COMPETITION

PART V-SPONSORS

The companies below support homebrewing and homebrewers by donating resources to the AHA National Homebrew Competition. Many of these sponsors have been with us for several years. We are grateful for their support because their dedication is integral to the success of the world's largest homebrew competition. Should you have an opportunity to patronize these companies, we hope you'll do so.

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American Lager

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The Purple Foot, Milwaukee, Wis.
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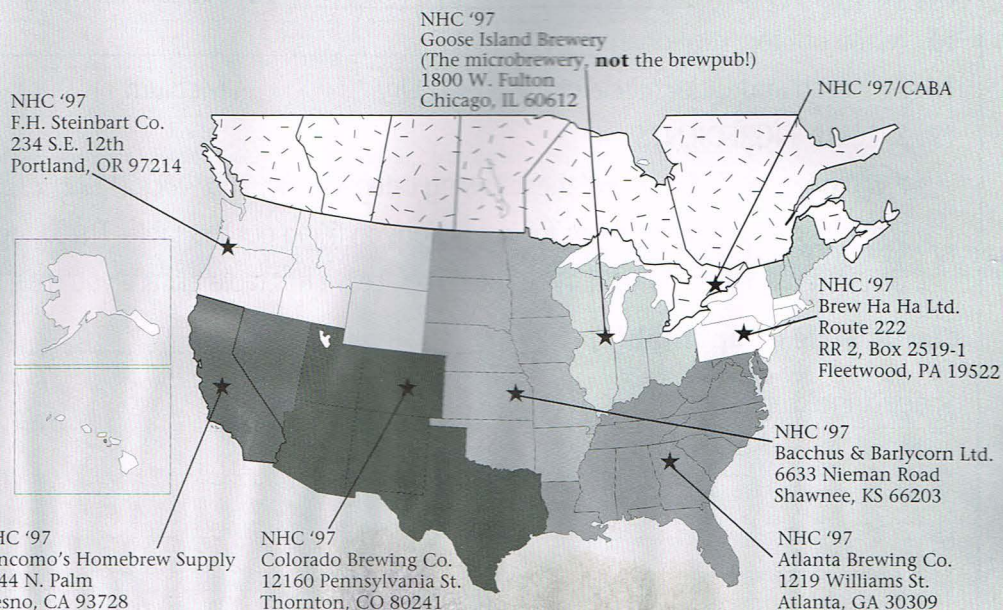
1997 Site Locator Guide

PART VI

All cider entries should be sent to Salem regardless of where you live:
DO NOT SEND BEER OR MEAD ENTRIES TO SALEM!
NHC '97 CIDER
Salem Beer Works
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Canada

Please send international beer and mead entries, other than Canadian entries, to Thornton, Colo.



Entry Form

PLEASE READ THE INSTRUCTIONS ON PAGES 3 AND 4 OF THE RULES AND REGULATIONS BROCHURE

PART VII

Section A: Brewer Information

1. Name _____
2. Additional Brewer(s) _____
3. Address _____
4. City _____ State/Province _____ Zip/Postal Code _____
5. Country _____ Phone (H) (____) _____ (W) (____) _____
6. E-mail _____
7. Are you a member of an AHA Registered Homebrew Club? ☐ Yes ☐ No
If "yes," what is the name? (Please spell out full name. Do not abbreviate.)

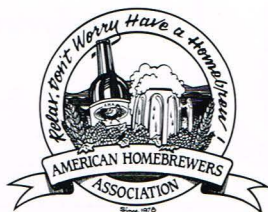
8. AHA Membership Number _____
9. New Member ☐ Yes (separate \$33 check enclosed) ☐ NonMember
10. Entry Fees Enclosed AHA members pay \$9 per entry: _____ no. of entries x \$9 = \$ _____ total
Nonmembers pay \$12 per entry: _____ no. of entries x \$12 = \$ _____ total
Canadian members use current exchange rate or 1.4 (i.e., \$9 x 1.4 or \$12 x 1.4).
11. This is the _____ time I have entered the AHA National Homebrew Competition

Section B: Entry Information

12. Category and/Subcategory (Print full names) _____
13. Category (1-28) _____ 14. Subcategory (a-g) _____
15. Name of Brew (optional) _____
16. For Mead and Cider (circle one): Dry Medium Sweet
17. SPECIAL INGREDIENTS:
If you have entered in any of the following categories 3c, 20b, 20c 21, 22, 23, 25, 26, 27, 28c, 28d refer to page 3 of the Rules and Regulations for instructions on filling out this table. The judges will use this important information for evaluating entries in these categories. Leave this table blank if you have not entered the above categories.
Classic Style (if applicable) _____

Special Ingredient(s)

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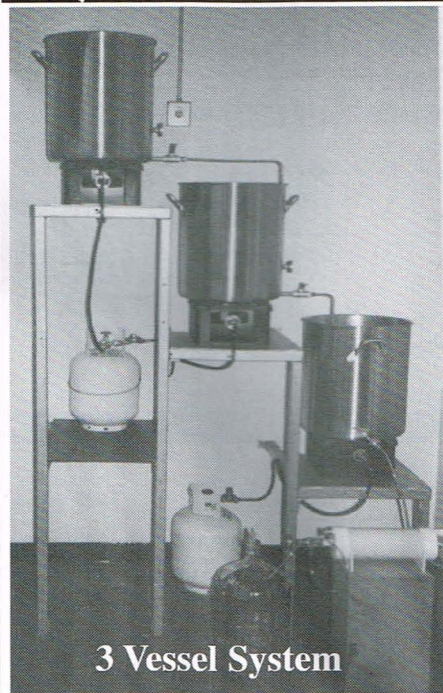
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FOR THE BEGINNER

Martin P. Manning

Airing Things Out: Aeration vs. Oxygenation vs. Oxidation

All the talk about aerated wort and oxidized beer can get confusing, so first let's define terms: Aeration means to infuse with air. Air is a mixture of gasses, but as most people know it consists mostly of nitrogen (about 78 percent) and oxygen (about 21 percent). Oxygen can be dissolved in water, wort or beer, but only up to a point, depending on the temperature and pressure of the liquid. At that point, the liquid is said to be "saturated." Nitrogen, on the other hand, is nearly insoluble. So, when wort or beer not already saturated with oxygen is aerated by splashing, stirring or bubbling air through it, the net effect is oxygenation.

For this discussion, we will consider aeration and oxygenation to be equivalent. Oxidation is different. It describes a chemical reaction where oxygen combines with other elements or compounds, altering their properties. There is a relationship between oxidation and aeration, however, as aeration will surely lead to oxidation given enough time and the right conditions.

What Do You Need To Avoid?

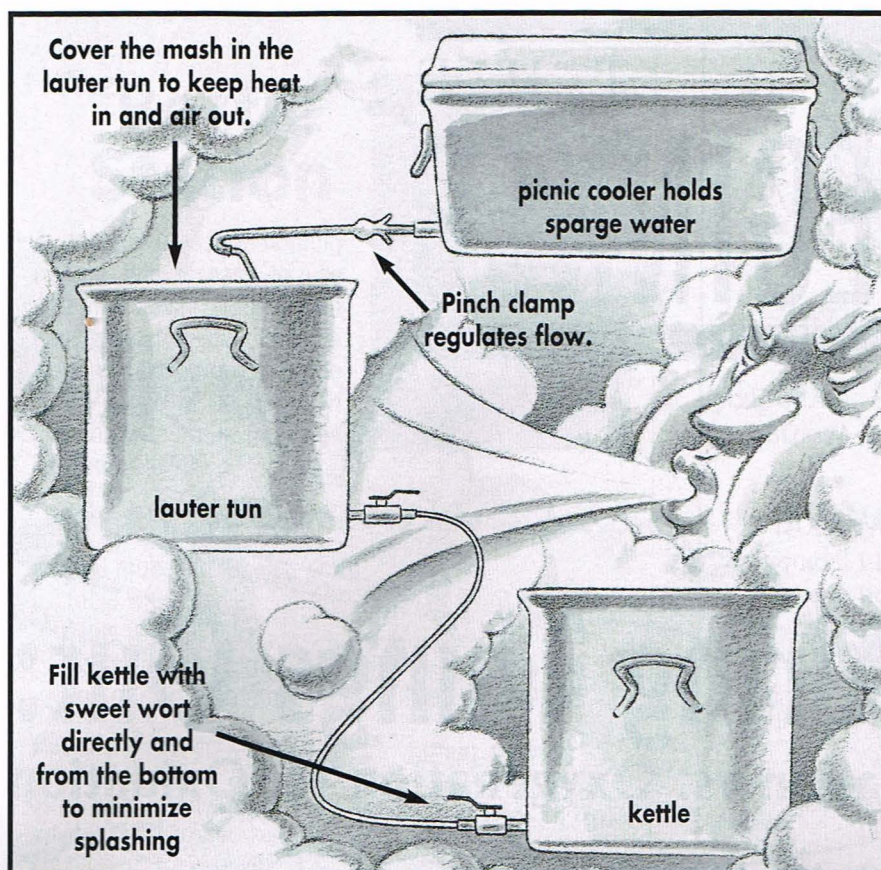
It is safe to say that oxidation is always undesirable in conventional brewing. Regardless of when it occurs in the brewing process, it will cause off-flavors to appear in the finished beer. The worst cases of oxidation damage result in a truly awful wet cardboardlike flavor. In less severe cases, a sherrylike flavor will become evident. In very mild cases, the effect can be as subtle as a deterioration of hop aroma, or a slight staleness that will take the edge off of an otherwise outstanding beer. Oxidation also is a contributing factor in haze formation. Both chill haze (appearing only at low temperatures) and permanent haze (visible at any temperature) are increased by oxidation damage. Beers that exhibit these symptoms collectively are said to have poor stability.

Oxygen is driven into the wort or beer at the liquid surfaces exposed to air. Homebrewers need to be especially careful because they are working with relatively small

volumes of beer. The smaller the batch, the higher the potential for exposure, because of an increased surface-to-volume ratio. As an example, a five-gallon (19-L) homebrew batch in a cylindrical tank (where diameter equals height) has nearly five times the exposed surface per unit volume as a 15-barrel microbrewery batch in a similar tank. Developing techniques to minimize oxygen pickup will improve your beers, often with only a minimal investment in equipment.

What Do You Need To Do?

You might conclude that because oxidation is always bad and aeration leads to oxidation that aeration also is always bad. Well, almost. You should studiously avoid aeration during all phases of the brewing process except one. That point, where aeration is in fact desirable, is after the wort has been cooled to pitching temperature and just before pitching the yeast. Providing an adequate supply of oxygen at pitching will help ensure quick, clean and complete fer-



Regardless of your mashing setup, collect the sweet wort gently and with as little splashing as possible.

mentations. By "clean" we mean reduced levels of undesirable fermentation byproducts such as undesirable esters.

Boiling the wort will have driven nearly all of the oxygen out, so you should take steps to make sure the cooled wort is fully aerated to the point that it becomes saturated with oxygen. Is there a down side to putting all of that oxygen into the wort, you ask? The answer is no. The presence of oxygen in the wort at this point does not cause oxidation damage because the temperature of the wort is low (greatly increasing oxidation reaction times) and, given an adequate pitching rate, the yeast will quickly metabolize the oxygen and remove it from solution before any harm is done.

Preventing Oxidation

The production of beer can be divided conveniently at the point where the bitter wort has been cooled. Precooling is "hot side" and postcooling is "cold side." Oxy-

gen pickup on the hot side during mashing, lautering, boiling and transfers between vessels is covered by the term "hot-side aeration" or HSA. There is some debate over how much real damage is done, but aeration on the hot side is insidious. The chemical reactions that cause the damage happen almost instantly at elevated temperatures. Oxygen that has become bound up with wort constituents will be carried all the way into the finished beer, where it can then accelerate the staling process. To be safe, consider the wort to be hot if it is above 80 degrees F (27 degrees C).

To minimize HSA in all-grain brewing, handle the mash and runoff as gently as you can and, above all, avoid pouring, splashing and careless stirring. Infusion mashing requires little stirring. It has been suggested that the mash water be let in from the bottom of the mash tun to further reduce the need for stirring.

Sprinkling sparge water onto the mash during lautering is not seen as a source of

HSA, and is one place where you can splash and get away with it. Splashing is allowed here because the sparge water is hot (at least 170 degrees F or 77 degrees C) so its dissolved oxygen level is low, and the surface of the wort is protected by a blanket of steam.

With any type of mashing technique, collecting the runoff is a critical process. Try to get the runoff wort to flow directly to the bottom of the boiling kettle by either letting it flow in through the kettle drain or by using a piece of hose. I have used a picnic cooler to hold sparge water, which keeps it hot and makes the kettle (where it had been heating) available to receive the runoff, eliminating the need to transfer the wort. You can also save time this way because you can turn the heat on under the kettle as soon as the bottom is covered with wort.

The last opportunity for HSA is in cooling the wort, and both extract and grain brewers have the same challenges to address at this point. If you are doing a partial wort boil, avoid cooling the concentrated wort by pouring it into cold water. Even though it is cooled down almost immediately, pouring it through the air, or through a strainer to remove hops and trub, will result in oxygen pickup. Use of a wort chiller is recommended to minimize cooling time and limit the exposure of the hot wort to air. Counterflow chillers effectively isolate the cooling wort from air. Immersion-type wort chillers require some agitation of the wort to be effective, and this is another place to avoid splashing. Cooling the wort by placing the pot in an ice bath takes longer than the wort chiller methods, but achieves the goal.

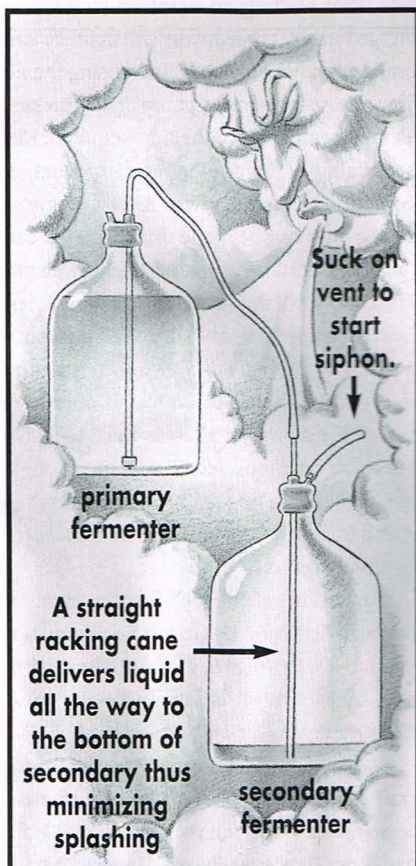
Primary Fermentation

During primary fermentation, when the yeast is actively fermenting and producing CO_2 at a high rate, there is little concern of air being introduced into the beer. For one thing, the yeast is active in metabolizing oxygen. Even open (loosely covered) fermenters are not a problem because the fermenting beer is protected by its head of krausen and the evolving CO_2 . As fermentation subsides, however, you must isolate the beer from air and continue to do so from that point on.

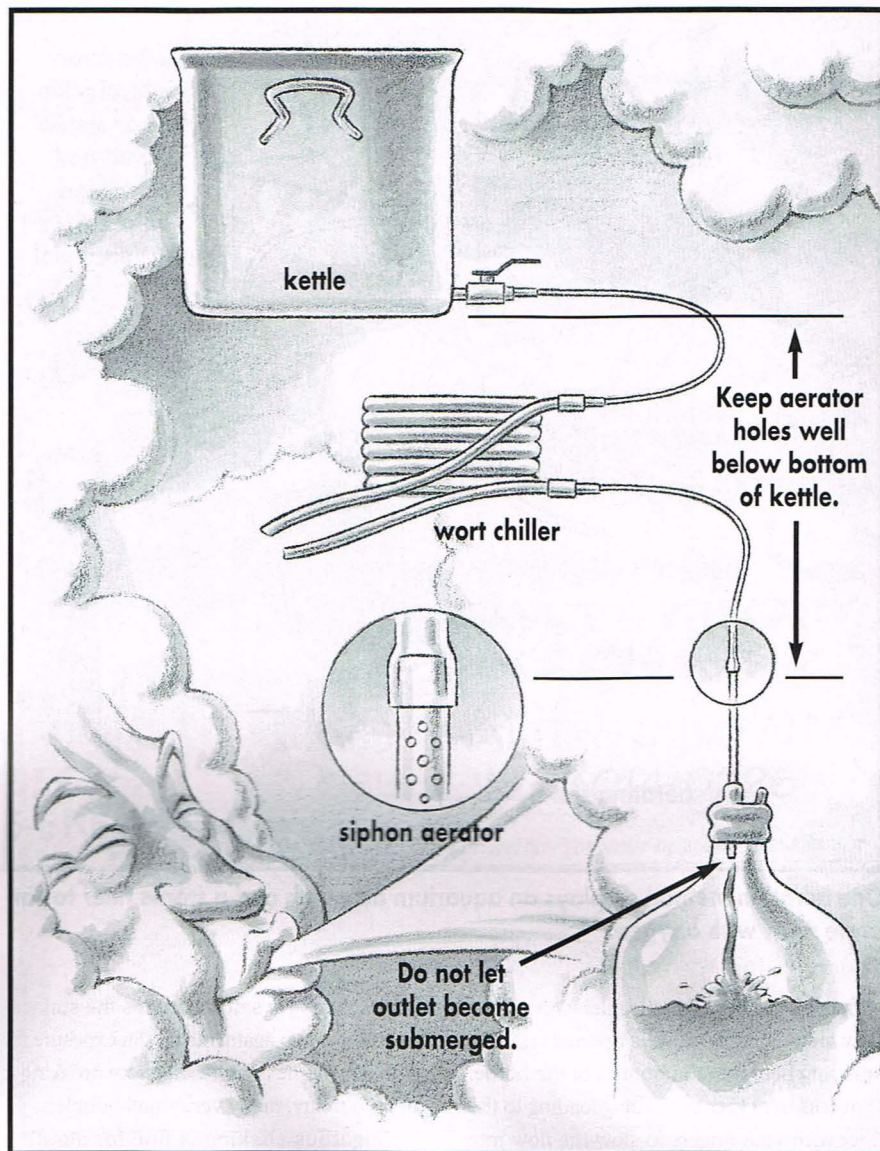
Racking and Secondary Fermentation

If you are using a secondary fermentation vessel or are bulk aging you should be concerned about what you put the beer into as well as how you transfer your beer. First, try to select the sizes of the primary and secondary vessels so the secondary will be very nearly filled, minimizing the amount of residual air in the head space. Using a six-gallon (22.7-L) or larger carboy for the primary and a five-gallon (19-L) for the secondary works nicely.

Racking is another operation where potential for oxygen pickup is high but can be reduced with some care. I like to set up a closed system using plastic carboy caps and two racking canes. The receiving carboy (secondary fermenter) is fitted with a carboy cap and a straight racking cane that extends all the way to the bottom and has no "thimble" on the end. The primary fermenter also has a carboy cap and a curved racking cane with



Careful racking procedures will make beer transfers nearly aeration-free.



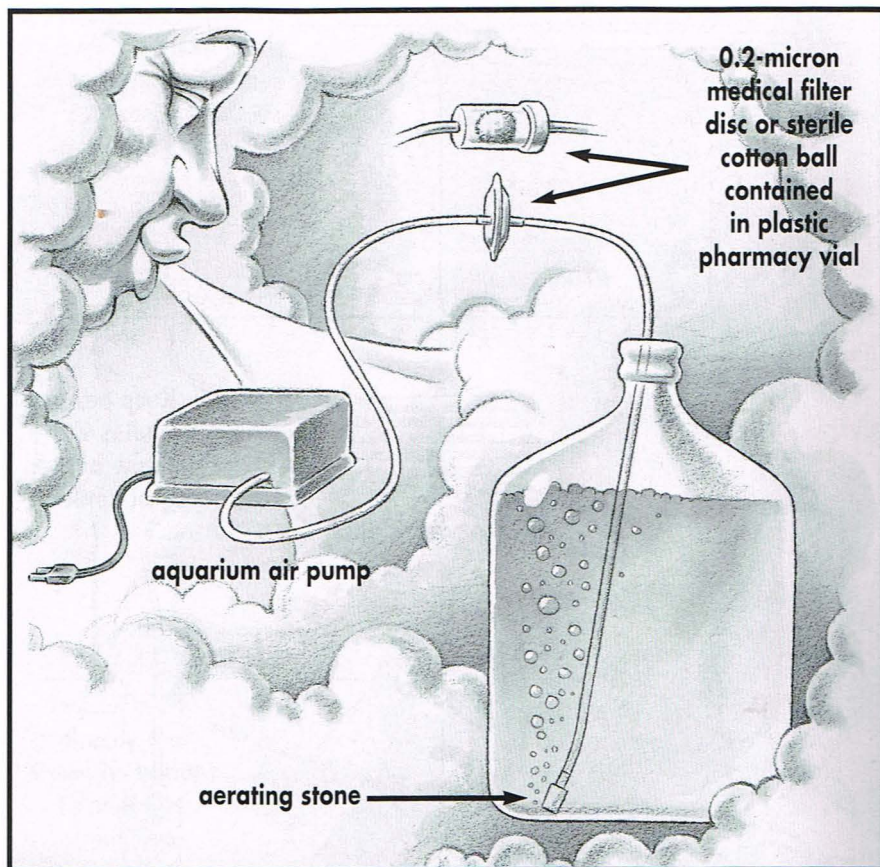
A counterflow wort chiller and a siphon aerator enable you to pitch yeast quickly into aerated wort.

a thimble to avoid picking up sediment. A siphon is started easily in a sanitary fashion by sucking on a short piece of tubing attached to the vent hole on the receiving carboy's cap. Timing is important, too. If you make the transfer before the fermentation has slowed to a crawl, sufficient CO_2 will be produced to clear the head space of residual air.

Once the beer is safely in the secondary, don't be tempted to take a lot of samples to monitor the gravity. Pulling beer out will inevitably pull air in. Get a sample at racking, then leave it alone until you are ready to package it.

Packaging

By now you should be getting good at keeping air out of your beer, and the key to packaging is gentle handling during transfers. To add priming sugar make a solution using a cup or two of water, then boil it for a few minutes to sanitize and deaerate. Pour it gently into the bottom of your priming bucket and rack the beer on top, taking the incoming beer to the bottom with the racking hose. This will produce a uniform concentration of priming sugar with little or no extra stirring required. A gentle stir with the racking cane will help the denser sugar mix



One aeration method employs an aquarium air pump and a sterile filter to saturate wort with oxygen.

with the beer. Find a bottle filler with a large flow area when its valve is opened to avoid spraying beer into the bottom of the bottle. If necessary, pinch the tubing leading to the filler with your fingers to slow the flow rate until the valve is submerged. Finally, keep the head space small. This is dependent on the filler's mechanism and size, but try to fill bottles within one inch of the top.

Aerating Without Going to Extremes

At room temperature and pressure, wort is considered saturated with oxygen at about 8 ppm (parts per million), and saturation is what you should be shooting for at pitching time. This is really a very tiny amount of oxygen — theoretically there is enough oxygen contained in two and one-half cups of air to saturate five gallons of wort! Practically speaking, though, it is necessary to expose a much larger volume of air to as much surface area as you can generate through splashing or bub-

bling to achieve saturation. It's the surface-to-volume ratio again: maximum exposure for a given volume of air results from breaking it up into many, many very small bubbles.

Vigorous shaking is fine for aerating yeast starter cultures where there is ample head space and the container is small, light and easily handled. Lifting and shaking a full carboy, however, is a little too risky for my taste. Rocking the carboy or sloshing the wort around are among the gymnastics homebrewers attempt in an effort to aerate without endangering life and homebrew.

Probably the simplest, most effective way to aerate cooled wort is to pour it back and forth between two open buckets. Five to eight pours from waist height should be sufficient. However, a dusty environment, especially if the dust has been generated by crushing malt, could cause detrimental effects from bacterial contamination, which could easily outweigh the benefits of better aeration.

Second to pouring between buckets in simplicity and effectiveness is the so-called

siphon aerator. This device is a short (about six inches) length of three-eighths-inch outside-diameter plastic or metal tubing that has a dozen or more small (one-sixteenth-inch or less) holes near one end. In operation, the tube is inserted into the outlet end of the siphon hose used to transfer the cooled wort into the primary fermenter.

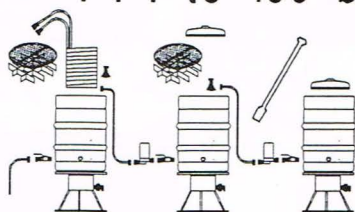
Because of the low static pressure in the fluid stream, ambient air is drawn in through the holes and entrained by the wort. A single pass through such a device might be expected to achieve dissolved oxygen levels of perhaps 30 percent saturation. More and smaller holes might improve performance. Because ambient air is used the same caution regarding airborne dust applies.

There are other wort aerating devices on the market as well as plans available for building other aerator designs. For those who want complete aeration and are concerned about contamination from the air, air pumps are an easy route to take. A small aquarium-type air pump with a sterile (0.2-micron) in-line filter feeding an aeration stone submerged in the cooled wort will achieve saturation in about an hour. Increasing the air flow rate, using a larger pump or compressed air can greatly reduce the time required. Kits are available from homebrew suppliers, or you can make your own. Alternatively, a coarse filter can be made using a sterile cotton ball placed in a suitable in-line housing. The cotton will trap incoming dust particles, removing the primary source of contaminants. Cotton balls are easier to find and cheaper than a 0.2-micron unit. The pore size of the stone (smallest is best) will also affect the time required. There are a couple of suppliers offering stainless-steel aerators with a 2-micron pore size, which is excellent for this purpose.

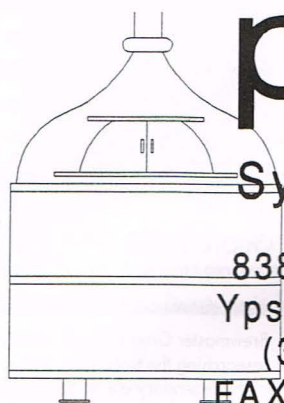
For further reading see "The Detriments of Hot Side Aeration," by George Fix, *Zymurgy*, Winter 1992 (Vol. 15, No. 5) "Beer Stability," by Micah Millspaw and Bob Jones, *Zymurgy*, Winter 1992 (Vol. 15, No. 5).

Martin Manning is an engineer with GE Aircraft Engines in Cincinnati, Ohio. An amateur brewer since 1989, he is president of the Cincinnati area's Bloatarian Brewing League (BBL), a BJCP Certified judge and an irregular contributor to various brewing publications.

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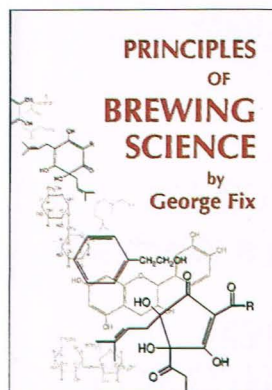
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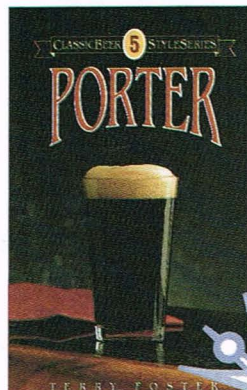
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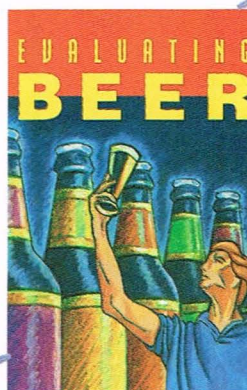
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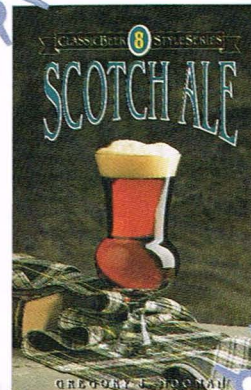
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ILLUSTRATIONS BY MARK NELSON

GERMAN-STYLE WHEAT BEER



BRONZE MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

Kelly Robinson

Ceres, California

"Dinkely Dunkely Weisely Weissely Do"

Dunkelweizen



Ingredients for 6 U.S. gal (22.7 L)

- 7 lb DeWolf-Cosyns Belgian wheat malt (3.2 kg)
- 4 lb Durst Munich malt (1.8 kg)
- 1/2 lb 90 °L Great Western caramel malt (0.45 kg)
- 2 oz Weyermann roasted wheat malt (57 g)
- 3/4 oz Hallertauer hop pellets, 4.8% alpha acid (21 g) (60 min.)
- Brewers Resource CL-920 yeast culture
- force carbonate in keg

- Original specific gravity: 1.047
- Final specific gravity: 1.012
- Boiling time: 90 min.
- Primary fermentation: five days at 68 degrees F (20 degrees C) in glass
- Secondary fermentation: 14 days at 37 degrees F (3 degrees C) in glass
- Age when judged (since bottling): not given

Brewer's specifics

Double decoction mash with rest mash temperatures of 124 degrees F (51 degrees C), 140 degrees F (60 degrees C) and 158 degrees F (70 degrees C). Sparge with 170-degree-F (77-degree-C) water.

Judges' comments

"The dark malts are too strong — they detract from the estery-phenolic character that seems a little subtle."

"Roasty, CaraMunich-type maltiness dominates over phenolic characteristics. Use less CaraMunich, crystal or roasted-type malts to allow more of the phenols to balance out the beer."

BELGIAN- STYLE LAMBIC



SILVER MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

Paul Edwards

Indianapolis, Indiana

"Up the Kriek"

Belgian-Style Fruit Lambic

Ingredients for 4 U.S. gal (19 L)

- 7 3/4 lb Munton and Fison pale malt (3.5 kg)
- 1/2 lb DeWolf-Cosyns CaraPils malt (0.23 kg)
- 2 lb torrefied wheat (0.91 kg)
- 1 oz Hallertauer whole hops, 1% alpha acid (28 g) (120 min.)
- Wyeast *Brettanomyces* liquid yeast culture and sediment from three bottles of Frank Boon Gueuze
- 1 gal sour cherry juice (3.8 L) (secondary)
- 3/4 cup corn sugar (177 mL) (to prime)

- Original specific gravity: 1.050
- Final specific gravity: unknown
- Boiling time: 120 min.
- Primary fermentation: two months at 65 degrees F (18 degrees C) in glass
- Secondary fermentation: two years at 65 degrees F (18 degrees C) in glass
- Age when judged (since bottling): six months

Brewer's specifics

Mash grains at 158 degrees F (70 degrees C) for 60 minutes. Sparge to collect six gallons (22.7 L) of wort. Boil down to four gallons (15 L). One gallon (3.8 L) sour cherry juice added to secondary brings final volume to five gallons (19 L).

Judges' comments

"Cherry sourness and taste. Sour lactic complexity with a lingering cherry sourness. *Brettanomyces* character in nose could be increased. Good cherry flavor and nice sourness."

"Oily mouthfeel. Good intense sourness lasts. Needs more complexity. Good kriek, perhaps not as wild as some would like, but better than most commercially available."

AMERICAN- STYLE ALE



SILVER MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

Douglas Philipson

Lewisburg, Pennsylvania

"Auspicious American Ale"

American Pale Ale

Ingredients for 10 U.S. gal (38 L)

- 18 lb Klages malt (8.2 kg)
- 1 lb 64 °L British crystal malt (0.45 kg)
- 1 lb 44 °L American crystal malt (0.45 kg)
- 1 lb Munich malt (0.45 kg)
- 1 lb American wheat malt (0.45 kg)
- 1/2 oz Chinook hop pellets, 10.1% alpha acid (14 g) (60 min.)
- 1/2 oz Chinook hop pellets, 10.1% alpha acid (14 g) (30 min.)
- 4 1/2 oz Cascade hop pellets, 4.1% alpha acid (128 g) (30 min.)
- 2 oz Cascade hop pellets, 4.1% alpha acid (57 g) (two min.)
- 3 oz Cascade hop pellets, 5.8% alpha acid (85 g) (dry)
- Wyeast No. 1056 American ale liquid yeast culture
- 3/4 cup corn sugar per 5 gal (177 mL) (to prime)

- Original specific gravity: 1.051
- Final specific gravity: 1.014
- Boiling time: 90 min.
- Primary fermentation: six days at 65 degrees F (18 degrees C) in glass
- Secondary fermentation: six days at 60 degrees F (16 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

Mash grains at 158 degrees F (70 degrees C) for 90 minutes.

Judges' comments

"Slight grapefruit. Need more hops at midboil. A little light in body."

"Very bitter with a harsh finish. Slightly chalky aftertaste. I would like a little more hop flavor. Try some more late hop additions."

"Hop characteristic is appropriate. Conditioning good. Aftertaste is mostly hop dominated. Additional malt and ester components would improve balance and drinkability."

AMERICAN LAGER



SILVER MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

Patrick Kennedy

Overland Park, Kansas

"AWB (American Weenie Beer)"

American Lager

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

- 4 1/2 lb 1.5 °L two-row Pilsener malt (2 kg)
- 1 lb 1.75 °L six-row lager malt (0.45 kg)
- 1 1/2 lb flaked barley (0.68 kg)
- 1 lb flaked maize (0.45 kg)
- 1/4 lb (1.75 °L CaraPils dextrin malt (113 g)
- 2 oz 20 °L CaraVienna malt (57 g)
- 1 oz Tettnanger hop pellets, 3.5% alpha acid (28 g) (45 min.)
- 3/4 oz Tettnanger hop pellets, 3.5% alpha acid (21 g) (30 min.)
- Wyeast No. 2007 Pilsener lager liquid yeast culture
- 3 1/4 oz corn sugar (100 g) (to prime)

- Original specific gravity: 1.046
- Final specific gravity: 1.012
- Boiling time: 75 min.
- Primary fermentation: 16 days at 45 degrees F (7 degrees C) in glass
- Secondary fermentation: 14 days at 39 degrees F (4 degrees C) in glass
- Age when judged (since bottling): six months

Brewer's specifics

Mash grains at 135 degrees F (57 degrees C) for 75 minutes. Raise to 155 degrees F (68 degrees C) for 195 minutes. Mash-out at 165 degrees F (74 degrees C) for 15 minutes. Sparge with four gallons (15 L) 165- to 180-degree-F (74- to 82-degree-C) water.

Judges' comments

"Clean up front. Finish is a little bitter. Leaves a dryness on the tongue. Very clean beer. Well-made. Since we have to pick nits at this level of competition, I have to say the finish is a bit bitter."

"Very slight winy finish. Well-made beer, great looking, good flavor."

"Good conditioning. Some phenolic flavors. Light hops OK. A bit more like an American cream ale than an American lager."

GERMAN DARK LAGER



BRONZE MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

Bob Waizenegger

Fairfax, Virginia

"Polar Bear Warmer"

Munich Dunkel

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

- 6 2/3 lb Munton and Fison amber extract (3 kg)
- 1 lb amber dry malt extract (0.45 kg)
- 4 oz toasted Munich malt (113 g)
- 1/2 lb crystal malt (0.23 kg)
- 4 oz chocolate malt (113 g)
- 2 oz German Hallertauer hop pellets, 3.1% alpha acid (57 g) (60 min.)
- 1/2 oz Tettnanger hop pellets (14 g) (three min.)
- Wyeast No. 2206 Bavarian lager liquid yeast culture
- 3/4 cup corn sugar (177 mL) (to prime)

- Original specific gravity: 1.054
- Final specific gravity: 1.016
- Boiling time: 60 min.
- Primary fermentation: seven days at 65 degrees F (18 degrees C) in glass
- Secondary fermentation: seven days at 70 degrees F (21 degrees C) in glass
- Age when judged (since bottling): four months

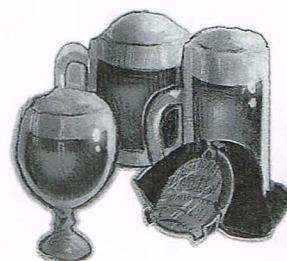
Brewer's specifics

Toast Munich malt for 10 minutes at 350 degrees F (177 degrees C). Crush and combine with crystal and chocolate malt in 1 1/2 gallon (5.7 L) water. Bring to just below a boil and steep 10 minutes. Remove grain, add liquid then dry extract and boil with hops.

Judges' comments

"Chocolatey malt very evident. Hops very well-balanced. Good conditioning. Chocolate may be too much for this. Some fruity esters in aftertaste — a little astringent."

"Chocolate-roasty malt flavor hits you right up front. The right balance of malt and hops bitterness. Slight licorice flavor. A very good example of style."



PORTER



BRONZE MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

John Kessel

Arlington, Texas

"It's Dark, Guess it Must be Porter"

Ingredients for 10 U.S. gal (38 L)

- 15 lb Hugh Baird pale ale malt (6.8 kg)
 - 2 lb DeWolf-Cosyns Belgian Special "B" malt (0.9 kg)
 - 1 1/2 lb 70 °L English crystal malt (0.68 kg)
 - 1 lb DeWolf-Cosyns Belgian chocolate malt (0.45 kg)
 - 1/2 lb DeWolf-Cosyns Belgian black patent malt (0.23 kg)
 - 2 1/2 oz Hallertauer Northern Brewer whole hops, 7.5% alpha acid (71 g) (90 min.)
 - 1 oz Hallertauer Northern Brewer whole hops, 7.5% alpha acid (28 g) (10 min.)
 - 1 1/2 oz Hallertauer Northern Brewer whole hops, 7.5% alpha acid (43 g) (one min.)
- Wyeast No. 1084 Irish ale liquid yeast culture prepared in a 2-qt (1.9-L) starter.
- 3/4 cup corn sugar per 5 gal (177 mL) (to prime)

- Original specific gravity: 1.061
- Final specific gravity: 1.031
- Boiling time: 90 min.
- Primary fermentation: four weeks at 68 degrees F (20 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

Used a RIMS with direct kettle heating. Mash-in at 258 degrees F (70 degrees-C), hold temperature for one hour. Recirculate and heat mash to 168 degrees F (76 degrees C) for mash-out. Sparge with 170-degree-F (77-degree-C) water. All brewing water reverse osmosis filtered. Pitch one quart starter per five gallons.

Judges' comments

"Good balance. Hops are in background. Very good finish. Very robust aroma."

"Great flavor. Roasted malt very powerful. Good hop balance."

HERB AND SPICE MEAD



SILVER MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

Keith Schwols

Fort Collins, Colorado

"Hot to Trot"

Still Metheglin

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

- 15 lb Colorado honey (6.8 kg)
 - 3 tbsp cinnamon (44.4 mL)
 - 1 tbsp dried red pepper flakes (14.8 mL)
 - 3 cinnamon sticks (in secondary)
 - 1 tbsp acid blend (14.8 mL)
- Wyeast No. 3184 sweet mead liquid yeast culture

- Original specific gravity: 1.120
- Final specific gravity: 1.030
- Primary fermentation: three weeks at 70 degrees F (21 degrees C)
- Secondary fermentation: six weeks at 68 degrees F (20 degrees C)
- Tertiary fermentation: three months at 68 degrees F (20 degrees C)
- Age when judged (since bottling): 11 months

Brewer's specifics

Steep honey, pepper flakes and three tablespoons cinnamon for 10 minutes at 170 degrees F (77 degrees C).

Judges' comments

"Nice light pink color. Good balance between cinnamon and pepper flakes. Honey in background. Need more honey in flavor."

"Captures honey and cinnamon nicely. Spice and pepper provides a quite appropriate balance to the honey sweetness. Aroma reminds me a bit of cinnamon mouthwash."



Every gold-medal-winning recipe from the AHA 1996 National Homebrew Competition was printed in *Zymurgy* Special Issue 1996 (Vol. 19, No. 4) "Winners Circle."



ULTIMATE ALT

CLUB-ONLY COMPETITION WINNER



Jack Kinsman
Bartlett, Illinois
Representing Club Wort
"Cowabunga Kölsch"
Kölsch

Ingredients for 10 U.S. gal (38 L)

- 14 lb German Pilsener malt (6.4 kg)
- 1 lb American two-row malt (0.45 kg)
- 1 lb malted wheat (0.45 kg)
- 1/2 lb CaraPils malt (0.23 kg)
- 2 1/5 oz Perle whole hops, 4.8% alpha acid (63 g) (60 min.)
- 1 4/5 oz Perle whole hops, 4.8% alpha acid (51 g) (20 min.)
- 1 oz Saaz hop plug, 3.1% alpha acid (28 g) (two min.)
- Wyeast No. 2565 Kölsch liquid yeast culture
- force carbonate in keg

- Original specific gravity: 1.042
- Final specific gravity: 1.012
- Boiling time: 90 min.
- Primary fermentation: one week at 70 degrees F (21 degrees C) in glass
- Secondary fermentation: two weeks at 50 degrees F (10 degrees C) in glass
- Tertiary fermentation: four weeks at 35 degrees F (2 degrees C) in stainless steel
- Age when judged (since bottling): three months

Brewer's specifics

Mash grains at 128 degrees F (53 degrees C) for 30 minutes. Raise to 154 degrees F (68 degrees C) for 60 minutes. Raise to 165 degrees F (74 degrees C) for five minutes.

Judges' comments

"Very nice light crisp flavor. Well-balanced. Very nice conditioning. Light malt fades to nice hop flavor."

"Good malty flavor. No off-flavors noted. Dryness about right."

"Slightly 'corny' taste. A bit of vegetable. Hops are very restrained. A bit too estery, maltiness not pronounced sufficiently."



BOCK IS BEST

CLUB-ONLY COMPETITION WINNER



Bruce Stott
Rockville, Connecticut
Representing the Hop River Brewers
"Thanksgiving Bock"
Traditional Bock

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

- 5 1/2 lb Durst Munich malt (2.5 kg)
- 4 1/2 lb Briess pale malt (2 kg)
- 1 lb toasted Munich malt (0.45 kg)
- 1/2 lb 90 °L crystal malt (0.23 kg)
- 1/2 lb 40 °L crystal malt (0.23 kg)
- 1 lb wheat malt (0.45 kg)
- 4/5 oz Northern Brewer hop pellets, 8.9% alpha acid (23 g) (60 min.)
- 1 oz Liberty hop pellets, 3.9% alpha acid (28 g) (30 min.)
- Wyeast No. 2206 Bavarian lager yeast culture
- 3/4 cup corn sugar (177 mL) (to prime)

- Original specific gravity: 1.066
- Final specific gravity: 1.021
- Boiling time: 75 min.
- Primary fermentation: three weeks at 45 to 50 degrees F (7 to 10 degrees C) in glass
- Secondary fermentation: two weeks at 45 to 50 degrees F (7 to 10 degrees C) in glass
- Age when judged (since bottling): five months

Brewer's specifics

Single decoction **mash with rests** at 122 degrees F (50 degrees C) for 30 minutes, 142 degrees F (61 degrees C) for 15 minutes and 157 degrees F (69 degrees C) for 20 minutes.

Judges' comments

"Very effervescent. Excellent mouthfeel. Excellent brew."

"Full body. Great flavor. Excellent beer."

James Spence, a National BJCP judge, has twice judged the Great American Beer Festival's® Professional Panel Blind Tasting and the Campaign for Real Ale's Champion Beer of Britain at the Great British Beer Festival.



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WORLD OF WORTS

Charlie Papazian

Cuba's Havana Gold

"The electricity and lights are out in my neighborhood, Charlie, but not to worry. There is no problem."

No problem, the universal phrase spoken in every language, taking on infinite degrees of unreality. We found ourselves wending our way through the streets of Havana to a western suburb. We stopped, and the noise of the Russian-built automobile slowly gave way to the vibrancy of the tree-lined neighborhood. The engine pinged as it cooled. I slowly rolled down my window and sat bewildered, noting the sounds of the neighborhood, breathing the tropical night air. A hum of conversation filled the air, yet no one could be seen.

Then I noticed the open-air porches on the second stories above me and the orange glow of a lighted cigar slowly swaying in a silent, languid arc. In his rocking chair an old man passed the time as most Cubans do in these difficult times of austerity. Then I realized the night air was filled with dozens of tiny orange embers and the embracing aroma of

Cuban tobacco. Laughing, crying, teasing, joking and serious conversation seemed to gently surround every household.

We walked through a gate and into a small but comfortable home to experience one of my first beer tastings in Cuba. As I left those moments behind I knew I would never forget them. They typified my impressions of today's Cuba — mysterious, intriguing, friendly, incredibly complex and a country always on the verge of anxiety.

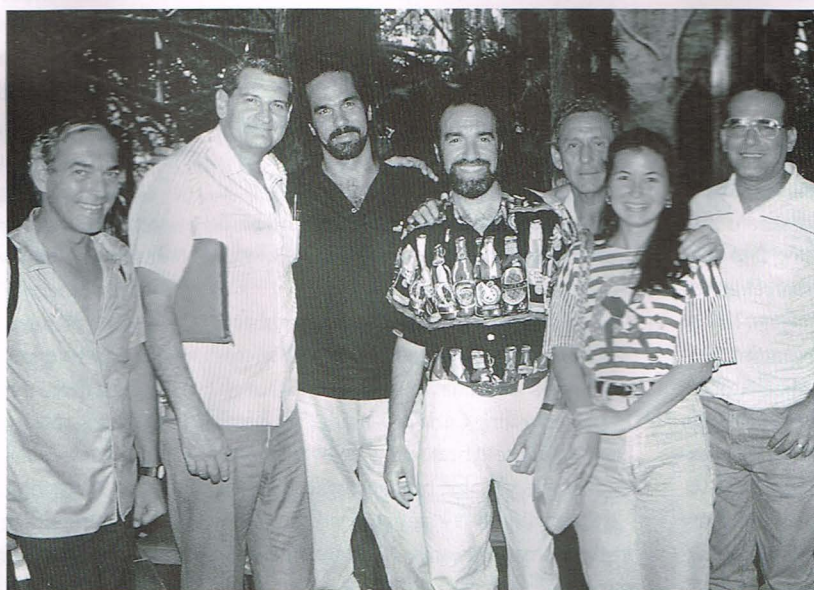
I was 13 years old in 1962 during the Cuban missile crisis. I recall listening to my

younger brother's six-transistor pocket radio in the darkness of our bedroom, wondering if the world were about to end. My first memory of Cuba was a lasting one. Now with this educational and journalistic trip officially hosted by the Cuban government I was on my way in search of the lost beers of Cuba. I knew that beer was being brewed there, but little else.

In my pretrip research and in conversations with international brewing colleagues I was surprised to discover there is virtually no knowledge of the Cuban beer market and

brewing industry. I was curious and, despite obstacles, I was determined. I went assuming the most, but expecting the least. Through a series of personal and diplomatic contacts I was unofficially told I would be officially hosted by the Cuban government and the minister of food.

Embarkation day arrived with nothing certain, except my determination. Approaching legendary Havana I looked down without any anticipation. From high above we glided past dozens of baseball diamonds and deep blue swimming pools.



Technical and business personnel from the breweries in and around Havana welcome Charlie Papazian at the inaugural meeting of the *Asociación Técnica de Cerveceras de Cuba* in March 1995.



Tucked away in the suburbs of Havana on the property of the Tropical Brewery is an elaborate and exotic former beer garden built in the 1930s. The space is currently available only for private functions.

"There has to be beer down there somewhere, there just has to," I thought to myself. And with beer there are always fine people.

Given several options I chose to make the most of my visit, accepting an offer by my government hosts of a full itinerary. From this point on for five days and five nights I had only brief but memorable opportunities to immerse myself in the culture and leisure of Cuba. But beer is my business and I was working overtime.

What little I had read and heard before the trip proved to be quite inaccurate. I developed a great admiration for the people of Cuba after touring existing facilities, listening to the government's assessment and freely roaming the streets, seeing and talking with the locals. But Cuba has remained an enigma. What is really going on there? The issues are complex, the opinions passionate. I am no more certain about Cuba's beer culture and brewing industry, though I know it truly exists and remains to be explored. Discovering the soul takes time.

I soon began to shatter the myths of my imagination, but not without a flood of long-forgotten memories of people, places, cars, food, feelings of what it was like for me, growing up in the 1950s and early 60s. As if in a time warp, the cars, the music, the

spectacularly beautiful art deco Spanish-American architecture of the 1950s is still intact. But sadly, there is more that crumbles in disrepair.

On the road one of every 10 or 15 cars is a 1951 to '54 Chevy, Oldsmobile, Plymouth, Packard, Cadillac, Ford or Pontiac. They are truly a breathtaking sight and one of the few real and unique tourist resources in Cuba. Cubans have kept them running for 40 years with haywire and bubblegum. These automobiles are a sight to behold and, I think, summarize the Cuban culture. They certainly are proud. Cubans have little though it doesn't show in their physical appearance. They are determined and hard working, and they make things work, with or without the system.

The same is true of the brewing industry, which has developed some incredibly creative ways to remain operational. Although I was not visiting Cuba as a tourist, my hosts easily found cold beer for my enjoyment. The quality was variable but mostly acceptable.

Stagnation has characterized the brewing industry for the past 35 years. The state owns and manages all seven brewing factories. Similar products are produced by more than one brewery and often under different formulations. The lack of capital and mate-

rials has drastically affected the production and quality of the products. Almost all of the beer is brewed with 50 percent sugar, few bottles are labeled and working equipment from downsized operations is continually cannibalized to provide spare parts. Miraculously the brewers of Cuba continue to brew beer with equipment that by industry standards would be virtually unacceptable elsewhere.

The one exception is the post-revolution brewery in Holguin, which is fitted with East German brewery equipment and a canning line. The spirit of the brewers and operations people was inquisitive and they searched for many answers during my visits, tours and seminars. Such persistence produces the best product possible under existing circumstances and is a testament to the community of brewers everywhere and especially to the tenacity of the Cuban people.

Cuba's brewing heritage is proudly evident in the spectacularly grandiose outdoor beer garden at Havana's Tropical Brewery and displayed at the brewery museum. The only likely artifacts of Cuba's best-kept beer secrets remain in a corner. Bottles and labels of past Vienna lagers, bocks, Munich darks and crystal (malt) lagers stood day and night, year after year, hardly noted by the inside world and not at all noted by the outside world. Seeing is feeling, and one knows immediately that Cuba had a rich brewing heritage in years past. What were these beers? I can only imagine. My hosts knew little about these lagers, yet hinted that there may still be some old-timers on the island with long memories.

I am fascinated by the possibility that some day these special beers will be reintroduced to a land where beer is no stranger. What would we begin with at Cuba's first brewpub or microbrewery? A beer for the people, past and present, in a climate that produces a fierce thirst. So here is an imaginary recipe for Havana Gold (Oro de Havana), a gold that is somewhat tarnished in color to reveal the richness of its cultural tapestries and light-bodied enough to quench the thirst that exists everywhere in Cuba. Havana Gold is suggestive of a Vienna style with an odd mix of other historical likelihoods.

So let's cut the shuck and jive and get on with the recipe.

Mash-extract recipe for 5 gal (19 L)

For the mash:

- 2 1/2 lb (1.13 kg) two-row pale lager-type malt
- 1/2 lb (0.23 kg) Victory, Biscuit or other aromatic malt
- 2 lb (0.9 kg) Vienna malt
- 1/2 lb (0.23 kg) 40 °L crystal or caramel malt
- 1 1/2 lb (0.68 kg) flaked corn

Add to the mash runoff:

- 2 lb (0.9 kg) extra light dried malt extract

And boil with hops:

- 7 Homebrew Bittering Units. I suggest 3/4 oz (21 g) 8.9% alpha acid German Northern Brewer whole hops.
 - 5 Homebrew Bittering Units of first addition flavor hops. I suggest hops with alpha-acid ranges up to 6%, Saaz, Mount Hood, Hallertauer, Spalt or Perle. (30 min.)
 - 3 Homebrew Bittering Units of flavor hops (15 min.)
 - 1/4 tsp Irish moss (1.2 mL)
 - 3/4 cup corn sugar (150 mL) (to prime)
 - lager yeast
- Original specific gravity: 1.044 to 1.048 (11 to 12 °Plato)
 - Final specific gravity: 1.008 to 1.012 (2 to 3 °Plato)
 - IBUs: about 30 to 34

A step infusion mash is used to mash the grains. Add 7 1/2 quarts (7 L) of 132-degree-F (56-degree-C) water to the crushed grain, stir, stabilize and hold the temperature at 128 degrees F (53 degrees C) for 30 minutes. Add 3 1/4 quarts (3.1 L) boiling water and add heat to bring temperature up to 155 degrees F (68 degrees C) and hold for about 30 minutes.

After conversion, raise temperature to 167 degrees F (75 degrees C), laut and sparge with 2 1/2 gallons (9.5 L) of 170-degree-F (77-degree-C) water. (Note: This is less than the typical amount of sparge water for this amount of grain. Because a smaller volume for boiling is desired for this mash-extract brew, less sparging is called for. Your efficiency may be brought down to 70 to 75 percent from a more typical 80 percent.) Collect about 3 to 3 1/2 gallons (11.4 to 13.3 L) of runoff, add the malt extract and bittering hops and bring to a full and vigorous boil.

The total boil time will be 75 minutes. When 30 minutes remain add five Homebrew Bittering Units of flavor hops and Irish moss. When 15 minutes remain add three Homebrew Bittering Units of flavor hops. After a total wort boil of 75 minutes turn off heat. Strain into a sanitized fermenter to which you've added 1 1/2 gallons (5.7 L) of water. It helps to prechill (33 degrees F or 1 degree C) the water added to the fermenter rather than simply adding warmer tap water.

Bitterness of about 30 to 34 IBUs were calculated for this recipe by making the fol-

lowing assumptions: (1) whole hops were used, (2) the wort boil was a concentrated boil with about 2 1/2 pounds (1.1 kg) of extract per gallon (3.8-L) of liquid boiled and (3) 25 to 26 percent utilization was assumed for 75 minutes of boiling, 13 percent utilization was assumed for 30 minutes of boiling and 6 percent utilization was assumed for 15 minutes of boiling. Beginners and intermediate brewers should relax, don't worry and have a homebrew.

Pitch a good dose of healthy active lager yeast and primary ferment at temperatures between 50 and 55 degrees F (10 and 12.5 degrees C) and lager between 45 and 50 degrees F (7 and 10 degrees C) for one month.

Prime with corn sugar and bottle when fermentation is complete.

Serve chilled but, despite the temptation of Cuba's tropical climate, don't serve ice cold. Imagine a land, place and a future not as distant as they may seem.

Beer does exist in Cuba. Tropical, Polar, Tinima, Mayabe, Modelo and Hatuey light lagers can be found easily with American dollars and with difficulty otherwise. They are brewed with pride by brewers who know very little about the international community of brewers. Their desire for quality and improvement qualifies them for acceptance into the world brewing community.

I'll be enjoying my own Havana Gold and lighting up my best cigar considering the men, women and children of Cuba and their future. They should have the opportunity to enjoy a Havana Gold someday with their cigar as they consider life in the evening air from their second story porch and rocking chair. It might someday even be a homebrew. I believe it certainly will.

Charlie Papazian is the founding president of the Association of Brewmaster and author of *The New Complete Joy of Home Brewing* and *The Home Brewers Companion*. (Avon, 1991, 1994). He traveled as a journalist to Cuba in April 1995 for an educational exchange of information.

Note: Because of the economic embargo the American government has sanctioned against Cuba, travel to Cuba by Americans is restricted. Americans are not allowed to spend U.S. dollars in Cuba except under special circumstances. Contact the U.S. Department of State for detailed information regarding current regulations.

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 x 9) + (3 x 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 bittering 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:

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

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:

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





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Mashing Potatoes

Dear Professor Surfeit,

Potatoes have a lot of starch, but do they have more starch than corn or rice? For conversion to sugars, why don't commercial breweries use potatoes? Who doesn't like to eat potatoes? Why not drink them? By now, you know I would like more information on getting conversion of starch to sugar using potatoes. Have you ever had a good potato beer? I am anxious to make some spuds suds!

Sincerely,
Wayne Trujillo
Denver, Colo.

Dear Wayne,

I'm not able to answer all your questions, but I think I can answer enough of them to make you gleeful. Brewers have used potato starch, and English brewers recently used it to make cheaper and lighter tasting beers. They got the big "Boo" from the Campaign for Real Ale, which was appalled at such practices. I imagine it has been going on in more worlds than just England.

Stevens Point Brewery of Stevens Point, Wis., used to make a potato beer called Spuds Premier Beer. They won a medal in the specialty beer category at the 1991 Great American Beer Festival®. It's a nice light-flavored beer. They may make it again.

If you're inclined to use spuds, please do it. As a homebrewer there isn't anything stopping you. Boil them up until they are quite soft and add them and the potato water to the mash in no greater proportions than about 20 percent of the malt grist. That's for starters and go on from there. For more

information, see "This Spud's for You — Potatoes as a Brewing Adjunct" by Brad Kraus in Zymurgy 1994 Special Issue (Vol. 17, No. 4).

*From Spuds to Suds,
The Professor, Hb.D.*

No More Chlorine

Dear Professor,

My well water is a little too funky for brewing. There are several good springs in the neighborhood and I've used them in the past, but stopped because I thought the water might change seasonally. I thought I might never be sure of what I was getting. Thus, I used city water for my partial mash brewing and, as recommended by all the books, boil the water to drive off the chlorine. Unfortunately, that adds an hour to the process, which I find a pain.

So tell me, Professor, how best to get rid of chlorine? If I let 10 gallons sit in a plastic bucket for a week will the chlorine evaporate by itself? If I must boil, should it be a rolling boil? For how long? With the pot covered or uncovered? Am I taking this whole thing too seriously?

Waiting with bated breath,
Dr. Gayfenstein
Fritz Creek, Ala.



Dear Dr. Gayfenstein,

The easiest thing to do to rid your water of chlorine is to invest in a carbon-based filter. As the water runs through, the filter takes all the chlorine out. It's simple and effective and costs about a nickel a gallon, but unfortunately some filters are good for only a few thousand gallons. Sink tap-water filters are a good investment if you'll be brewing a bunch.

Boiling uncovered will rid the volatile "free" chlorines, but won't get rid of the "non-free" chlorine. Anyway, the bottom line is get a charcoal-carbon filter. Go to your local department store, homebrew retail supplier, hardware store or water specialist. With growing concern about the quality of water these days, filters are becoming more accessible and reasonably priced every day.

*Get rid of it,
The Professor, Hb.D.*

Barley Wine Sparging

Dear Professor,

As I write this, I am quaffing a half pint of porter along with a slab of homemade just-from-the-oven bread on a rainy day. Ah, none better! But as I ponder the wonders of brewing, many questions arise. In front of me is a copy of the AHA handout "Outline for Intermediate Brewing," an excerpt from Charlie Papazian's *The New Complete Joy of Home Brewing* (Avon, 1991). This and other guidelines on all-grain brewing leave me wondering how much water to use for mashing and sparging the grain.

The outline suggests mashing with one quart (1 L) of water for each pound (0.45 kg) of grain then sparging with one-half gallon (1.89 L) for each pound. The recipes I have observed average nearly 10 pounds (4.5 kg) of grain for five gallons (19 L) of beer. So we have 10 quarts (2 1/2 gallons) of mash water followed by five gallons of sparge water. No doubt some of the water is soaked up by the grain and not released. What puzzles me is suppose I want some beefy barley wine, say 15 or 20 pounds (6.8 to 9.1 kg) of grain. Just the sparge water for 15 pounds will be 7 1/2 gallons (28.4 L). How do I fit that into a five-gallon fermenter?

Am I missing something obvious to everyone else or does it take less sparge water?

Thanks again for a great magazine.

Sincerely,
Tom Messenger
Los Osos, Calif.

Dear Tom,

The reality of practicality. Darn. That always gets in the way of simple, nice and neat little answers. When brewing hefty beers from all grain, the only thing you can do is cut back on the sparge water. Some brewers will take only the first runnings from a barley wine or doppelbock mash and use the last runnings for a lower gravity beer. You get less barley wine that way, but there is a solution: Do a double brew. Do two mashes and use only the first runnings. That's what professional brewers do and you can too.

You could also increase the boil time to concentrate your 7 1/2 gallons down to five. Keep in mind that evaporation of the wort through long boiling is effective but tends to darken and caramelize the character of the beer. This is not that critical for darker beers, but for lighter Mai bocks or belles doppel-bocks, it could be detrimental.

*Don't be deterred,
The Professor, Hb.D.*

Nuts Over Grape Nuts®

Dear Professor,

If you read the nutrition label of Post Grape Nuts cereal you will find it is beer fixings — wheat, malted barley, salt and yeast. No wonder I like this stuff. Do you think a brew of any quality could be made from Grape Nuts? Also, would the nutrition information be valid for beer?

Thanks,
Eric W. Holmes
Aurora, Ill.

Dear Eric,

Actually, the nutritional value would probably increase if you fermented Grape Nuts. You'd have more vitamins available

to you through the yeast. Grape Nuts Brown Ale: sounds like it would be worth experimenting with.

*With or without raisins,
The Professor, Hb.D.*

Shake 'n' Drink

Dear Professor,

I am a rookie kegger. What the devil is "forced carbonation"? Do you mean to tell me I can put the brew in my keg on Thursday and drink it on Saturday? How? Enlighten me!

Hate waiting,
Vancouver, Wash.

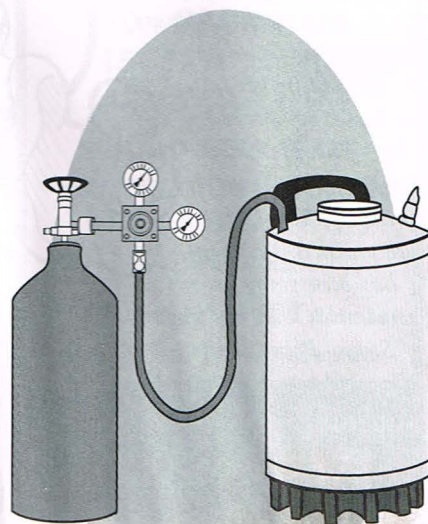
Dear Waiting,

The devil made me do it! The devil made me do it!

Forced carbonation, you betcha. If you've got clear aged beer in your fermenter, simply transfer it to a keg and put about 15 psi of carbon dioxide on it via your CO₂ cylinder. Get the brew cold for quicker carbonation.

*I've carbonated cold, cold beer in less than 15 minutes with the addition of forced gas and agitation of the sedimentless beer in the keg. For more information on kegging, see the excellent article by Ed Westemeier in *Zymurgy* Summer 1995 (Vol. 18, No. 2).*

*The force be with you,
The Professor, Hb.D.*



Butterscotch and Foam

Dear Professor,

I have three questions for you. The first concerns recipe formulations. My three favorite beers in the world are Sierra Nevada Pale Ale, Ballard Bitter (it's the diacetyl formation that has me stumped) and Samuel Smith's Nut Brown Ale. My greatest consternation is I can't seem to come up with an all-grain recipe that approximates any of them. I've done well with many others, but not these. I was wondering if you could tell me where to find appropriate recipes (I don't recall seeing what I'm looking for in any of the "Winners Circle" sections) or perhaps just suggest one yourself.

The second question has to do with excessive foaming. I have this problem with about one in every 10 batches. I open the bottle (to the sound of strong carbonation) and gently pour. Upon hitting the glass, the beer becomes a mountain of foam! After a while, the foam settles and the beer tastes all right. What causes this? Am I bottling too early? Is it an infection? I prime with one-half cup of corn sugar each time and the problem is sporadic. The carbonation level seems perfect after about four or five days, but after that it goes nuts.

Finally, the bubbles in my beers are quite large. How do I get those tiny bubbles that make you believe that spontaneous generation might actually exist?

Stark, foaming mad,
Chris Ragaisis
Federal Heights, Colo.

Dear Chris,

Hey, you got taste. That diacetyl flavor in Ballard Bitter is something else, isn't it? Or actually, wasn't it? They reformulated the recipe into a "clean" tasting IPA with very little if any diacetyl character. I used to love the balance it made with the hop bitterness. I've spent many a dime on those beers. I think your quest should be to get hold of a yeast strain that is a high diacetyl producer and has a tendency to drop out of suspension prematurely. You might

stress a good ale yeast by not aerating the wort sufficiently, causing the yeast to "poop out" prematurely, leaving diacetyl behind. Be careful or you could ruin a batch very easily with excessive diacetyl and butterscotch flavor and aroma.

Your foaming problem sounds like a classic case of a bacteria, or more likely a wild yeast contamination. The beer continues to ferment beyond normal as the wild yeast breaks down usually unfermentable carbohydrates. Look at the inside surface of your

bottles. Is there a ring of bacteria or yeast deposit near the surface of the beer? That is a sign of contamination. You may want to change your brand of yeast or adjust your sanitation procedures.

Those large bubbles are likely a result of wild yeast breaking down head-forming dextrins and carbohydrates and leaving a thinner brew with big bubbles.

Get unstumped,
The Professor, Hb.D.



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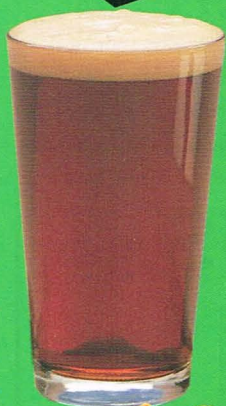
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Microbrewery Kits

EDME Limited announced a new Microbrewery Series of beer kits and unhopped malt extracts. The Microbrewery Series was created using special grist recipes and premium English two-row malts. The instructions are extensive but easy to understand and refer to U.S. homebrewing practices and terminology. A special section is devoted to alternative sources of fermentable sugars and their effect on the finished beer and a recommendation for each kit. The unhopped 3.3-pound malt extracts are new 100 percent malt formulations. Each malt features such technical data as bitterness, color and extract values. The kits are Original Draught, Red Ale, English IPA, Wheat Beer, Classic Pilsner (a special vial of hop extract is provided) and Extra Stout. Unhopped extracts are light, amber, dark and wheat.

Manufacturer's suggested retail price is \$12.95 per can. Check your local homebrew supply shop or call Crosby and Baker at (508) 636-5144, L.D. Carlson at (330) 678-7733 or Brewmaster at (510) 351-8920 for a retailer near you.

Propane Burner



Jantac Cellars introduced the FYRBREWER, a propane burner for homebrewers. The FYRBREWER incorporates a 12-inch tripod stand with a 20-inch-diameter top and a 170,000-BTU circular castiron burner. The unit uses an air-gas mixture baffle for an efficient blue flame. It includes a UL-approved high-pressure hose and regulator with a standard P.O.L. fitting for refillable propane tanks and a needle valve for fine flame control. The wind screen is an integral feature.

Manufacturer's suggested retail price is \$59.95. The FYRBREWER can be purchased directly from Jantac Cellars, PO Box 266, Palatine, IL 60078; (847) 397-0203.

Homebrew Kits

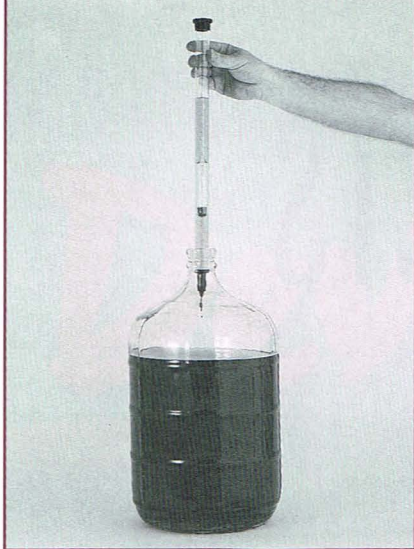


Bierhaus International Inc. introduced Next Step Bru-Paks®. The complete ingredient packs come with sample step-by-step directions to make a wide variety of microbrew-quality beers from grains, extracts, dry malts, honey and other adjuncts, all preprepared. Bierhaus International's new styles are Summer Sunset Raspberry Wheat with a subtle hint of raspberry and a distinctive red color, Orange Blossom Honey Raspberry Wheat with the same characteristics of Summer Sunset but with honey, Paddy O'Shaughnessy's Irish Brown Ale and King Davids Great Crimson Ale. Also available are Coal Porter, Paleface Pale Ale, High Dry and Light and Sampsons Down Under.

Manufacturer's suggested retail prices range from \$23.95 to \$48.70. For information or to place an order contact Bierhaus, 3723 W. 12th St., Erie, PA 16505; (814) 833-7747; FAX (814) 838-4090; Bierhaus@Erie.net.

Wort Sampler

The Thief, designed and manufactured by Fermtech Ltd., is a sampler that makes hydrometer readings easier and throwing



away the sample unnecessary. It is made of acrylic for clarity and durability. Simply insert the sanitized Thief about half-way into your carboy or pail. Touching the bottom for filling is not necessary. When the Thief is removed, the valve at the bottom prevents the sample from escaping. Insert your sanitized standard hydrometer for a quick reading. The sample can then be returned by touching the sensitive valve tip to the inside neck of the carboy or pail.

The manufacturer's suggested retail price is \$6.95. Ask for the Thief at your local homebrew supply store or contact Fermtech Ltd., 2 Stewart St. Unit 7, Kitchener, ON, Canada, N2G 2E4; (519) 570-2163; FAX (519) 570-0632.

10-Gallon Brewpot

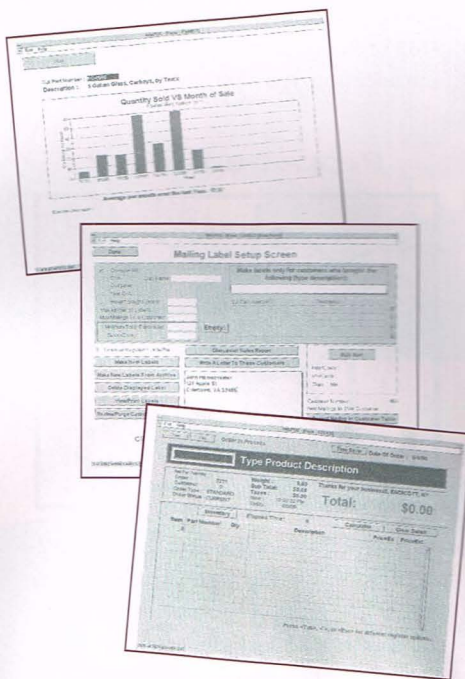


Polar Ware Co. introduces a brewpot developed for the homebrew market. The 10-gallon stainless-steel stockpot has been adapted for homebrewers and designed

with two holes, one to house the ball valve and the other an optional thermometer. If no thermometer is needed, the top hole remains plugged to prevent leakage. The brewpot is sold complete with a cover and brass ball valve, which requires attachment by the buyer. Accessory items including a perforated false bottom are sold separately. Polar Ware has been providing products to the food-service industry since 1907 and has been manufacturing deep-drawn stainless-steel products since 1926.

Manufacturer's suggested retail price is \$199.98. For information and a retailer nearest you contact Polar Ware Co., PO Box 211, Sheboygan, WI 53082-0211; (414) 458-3561; (800) 237-3655; FAX (414) 458-2205.

Retailer Software



WinPOS is a software package created by Great Lakes Brew Supply for homebrew supply retailers. WinPOS has a cash-registerlike screen shops can use to record sales. This program will track customer sales histories and can automatically generate purchase orders for selected vendors or blanket purchase orders allowing adjustments. In addition, one can edit inventory items, add new ones, import existing customers and

inventory, produce price lists, provide sales history and marketing analysis, calculate shipping charges based on weight and zones and create mailing labels. Complete data base maintenance includes backup and table repair and customizing features. System requirements are for 486 33 MHz PC running Windows 3.1, 8 MB RAM, 15 MB disk space, sound card, FAX/Modem recommended and printer.

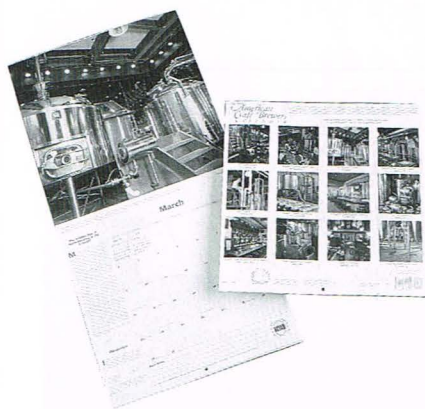
Manufacturer's suggested retail price is \$349 and comes with a money-back guarantee (minus a 15 percent restocking fee). A demo disk is available for \$25 that allows exploration of the program. For information contact Great Lakes Brew Supply and TerraMatrix, 310 Adams Ave., PO Box 8, Endicott, NY 13760; (607) 786-8844; FAX (607) 785-8729; TerraMX@AOL.COM.

German Growler



Sun International announces growler jugs molded in pressure-rated amber or green glass and fitted with a decorative corrosion-resistant alloy handle. The German-made beer growler offers a wire lever-lock that secures a porcelain stopper lined with a rubber gasket into the neck. The Growler offers an optional tapping accessory that straps securely into the jug's existing hardware, turning it into a minikeg. A small hand pump can be used to introduce air into the growler and a tap handle regulates the flow of beer.

For information contact Sun International, PO Box 2556, Wilmington, NC 28402; (800) 325-4880; (910) 762-0065; FAX (910) 343-3388; gift@sun-intl.com.



Craft Brewers Calendar

From Copper Kettle Concepts comes the 1997 American Craft Brewers Calendar®, a color wall calendar celebrating micro, pub and homebrewing. The large format opens to 12 inches by 24 inches and features micros and pub breweries nationwide. Each month includes the featured brewery's information, articles by craft-brewing industry experts, historic dates in the craft-brewing renaissance and a large date grid. The calendar is available at homebrew supply shops.

The publisher's suggested retail price is \$10.95. For information contact Copper Kettle Concepts, PO Box 7045, Marietta, GA 30065; or (800) 880-0978; (770) 977-8334.

Brewing Software

Saranac Software's new release, Brewer's Notebook 2.0 for Apple Macintosh, is a homebrewing data base, calculator and reference manual. The program features a recipe window that allows you to record information about a batch from starting gravity to judges' comments. It performs calculations including water treatment, potential gravity and hop utilization. A data base provides detailed information on grain, hops, yeast, beer styles and includes sample recipes.

Manufacturer's suggested retail price is \$39.95. For information or to order contact Saranac Software, 10115 Greenwood Ave. N., Suite 159, Seattle, WA 98133; (206) 726-3853; FAX (206) 522-3933; saranacsft@aol.com; <http://users.aol.com/saranacsft/brewersnotebook.html>.

Compiled by Christopher Lowenstein, advertising assistant.

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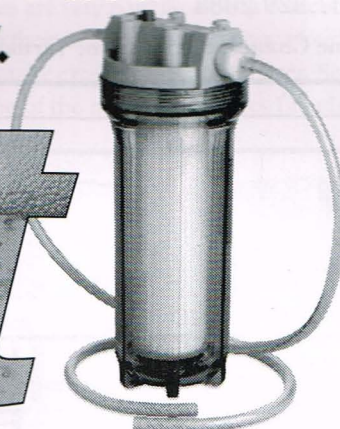
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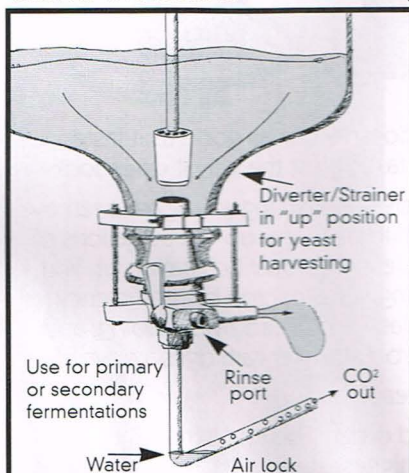
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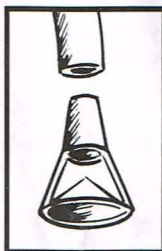
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THE BEST FROM KITS

Mark Moylan

Quick and Easy Ales

This kit review began as a look at easy ales. No brainer, I say to myself. Might as well talk about session beers, too. But trying to nail down a good definition of a session beer proved not so easy. Like lawnmower beer, house flavors and unnecessary worry, session beer is one of those terms that is wide open to interpretation. As a homebrewer who enjoys the gray areas of the art, it was a dream come true.

First stop, the Campaign for Real Ale. Their 1990 *Good Beer Guide* has an article "The Essential Guide to Achieving Beer Scene Credibility," in which they define session beer as "low(ish) in alcohol, and in flavor; for quaffing." Simple enough, I think. Since I'm brewing a pale ale and an English special bitter from kits, I'm on the right track.

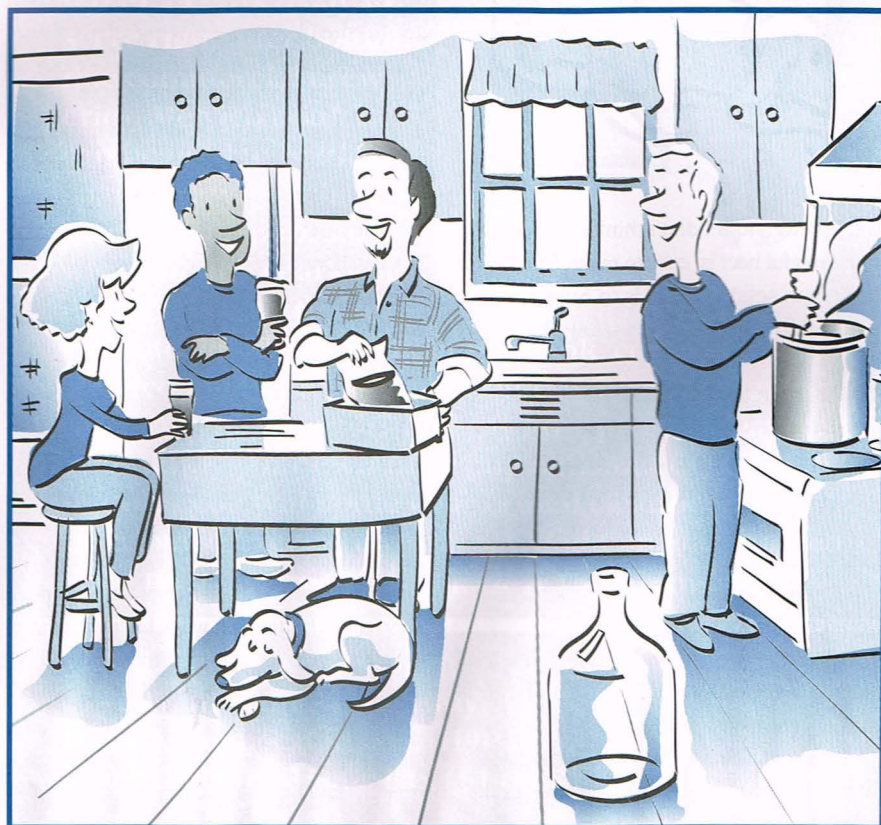
Next stop, a call to Daniel Bradford, publisher of *All About Beer* magazine. Daniel described a session beer as a beer you might enjoy after work at your favorite pub, where you sit and talk and drink, and not get inebriated. He gave me the name and phone number of CAMRA contact in England, but wouldn't give me Michael Jackson's phone number, so I baited him and asked if American light beers would qualify. "No," he said emphatically, "light beers are not session beers. Now I got to go."

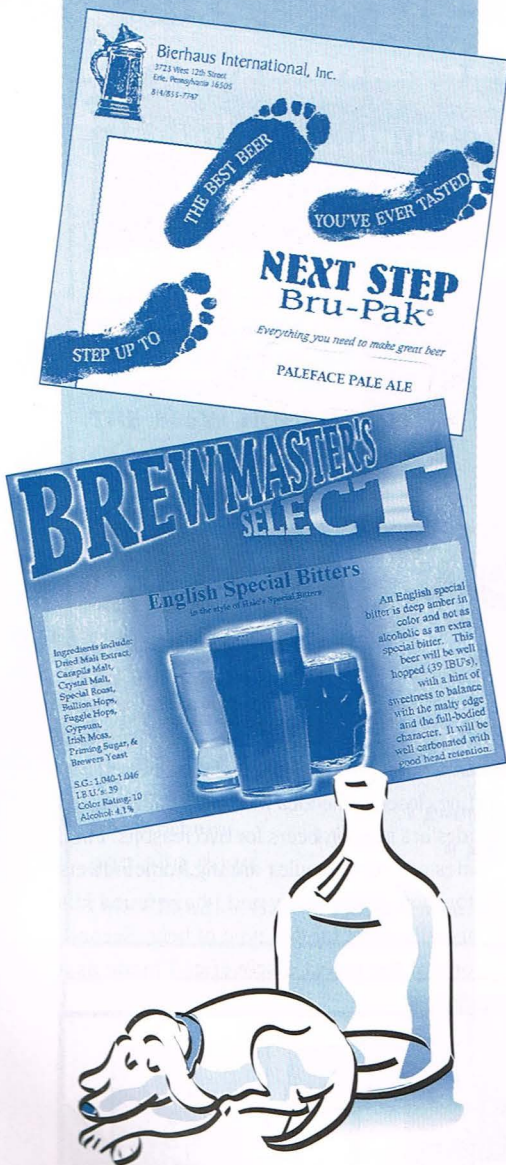
Charlie Papazian describes English milds in *The New Complete Joy of Home Brewing* (Avon, 1991) as brown ales of low alcoholic strength. He goes on to say consumption of

English mild is in quantity and that beer in northern England, "was and still is a very social institution, intended to be enjoyed and savored rather than a vehicle for drunkenness." He doesn't use the term "session," but he comes close to helping us with a working definition.

So now I was able to deduce that a session beer is light in alcohol, light to medi-

um in body and probably an ale rather than a lager. This rules out most American and Canadian popular beers. I found myself getting closer to the idea that most homebrewed ales are session beers for two reasons. First, ales are very popular among homebrewers for their ease to brew and I have found kits usually excel for this type of beer. Second, one of the nicest discoveries I made as a





homebrewer, and I don't think I'm alone, is that flavorful beer is easy to make. The challenge with session beers is to brew a complex malty beer also low in alcohol.

My last stop was a call to the 74th Street Ale House in Seattle, Wash. Doing a word search on the Web for session beers brought their home page up and they used the term session beer quite freely. Head Chef Chris Albus reiterated the low-alcohol requirement and said, "Whatever beer that promotes glibness and conviviality." He agreed that lagers would not be included.

The kits I brewed are arguably session beers. Low in alcohol, medium body and with decent flavor.

I followed kit instructions almost to the letter to make sure I would get the same results as a beginner. The results were pretty good.

Bierhaus Next Step Bru-Paks® Paleface Pale Ale

The following was included in the kit:

Ingredients for 5 gal (19 L)

- 1 4-lb can Bierhaus select light malt extract (1.8 kg)
- 2 1-lb bags dried light malt extract (0.9 kg total)
- 1 lb crushed crystal malt in muslin boiling bag (0.45 kg)
- 2 oz Tettnanger hop pellets (57 g) (boiling)
- 1 1/2 oz Saaz hop pellets (43 g) (five min.)
- 1 package SuperBrau dry yeast
- 3/4 cup corn sugar (177 mL) (to prime) bottle caps
- Original specific gravity: 1.051
- Final specific gravity: 1.026

Bierhaus doesn't put alpha-acid ratings on their hops and their brewing instructions take for granted you know about sanitation. I boiled six quarts of cold water and steeped the grain for 30 minutes after taking the pot off the heat. After removing the grains, I added the malt syrup and dry malt extract and brought the wort to a boil. The Tettnanger hops went in and 25 minutes into the boil I added the Saaz for another five minutes. Total boiling time was 30 minutes.

The instructions said to add the wort to 3 1/2 gallons (13.5 L) of cold water, but I put the brewpot into a sink of ice water first to lower the temperature to 90 degrees F (32 degrees C). When I added it to the cold water, my pitching temperature was 75 degrees F (24 degrees C). The kit included dry yeast. I sprinkled it on top of the wort (per instructions) in my 6 1/2-gallon (24.6-L) carboy fermenter, shook the fermenter and topped it with an airlock.

The beer completed fermentation in three days and I bottled it a week later with three-quarters cup (177 mL) priming sugar included in the kit. Tasting it after a couple of weeks revealed the high final gravity (1.026) added a slight sweetness and it was fizzy and still cloudy. But the beer was pretty good — a decent ale. I calculated the alcohol by vol-

ume to be around 2.8 percent and methinks I have a session beer albeit a sweet one. A liquid yeast may have improved the overall impression of this beer.

Alternative Beverage English Special Bitter

The following was included in the kit:

Ingredients for 5 gal (19 L)

- 5 lb light dry malt extract (2.3 kg)
- 1 cup crushed CaraPils malt (237 mL)
- 2 cups crushed special roast malt (473 mL)
- 1 cup crushed 120 °L crystal malt (237 mL)
- 1 1/4 oz Bullion hop pellets, 9.1% alpha acid (35 g) (boil)
- 1/2 oz Fuggle hop pellets, 4.2% alpha acid (14 g) (finish)
- 2 tsp gypsum (10 mL)
- 1 tsp Irish moss (5 mL)
- 1 pkg Wyeast No. 1275 Thames Valley liquid yeast (DME for starter included)
- 3/4 cup corn sugar (177 mL) (to prime)
- Original specific gravity: 1.042
- Final specific gravity: 1.010

Alternative Beverages sells their kits under the name of "Brewmaster's Select™," and in the kit, in addition to the brewing instructions, they enclose a "Recommended Brewing Procedures," booklet and a liquid yeast starter instruction sheet. Like Bierhaus, you get a muslin bag to put the grains in (my kit had two). This kit is a bit more sophisticated, including gypsum to harden the water a bit, which a bitter needs, and Irish moss for beer clarity.

I followed their instructions perfectly, though their liquid yeast handout was adamant about not smacking the pack with your palm. Half the fun of using liquid yeasts is smacking the pack, so I ignored the instructions and smacked away. The kit included Wyeast Brewer's Choice No. 1275, Thames Valley ale yeast, which I had never tried.

According to instructions, I put five pounds (2.3 kg) of DME into two gallons (7.6 L) of cold water and helped dissolve it by squishing it about with my hands. That

part was fun, kind of like playing in the mud when I was a kid. After dissolving the malt, the grain bag was put in the pot and set on medium high heat. After 20 minutes, the heat was raised and just as a boil was reached, I took the grains out. I added the boiling hops and 25 minutes later the Irish moss. After 45 minutes of total boiling, I added the finishing hops then two minutes later took the pot off the heat.

Again, as their instructions stated, I put the brewpot into a sink filled with ice water and lowered the temperature to 90 degrees F (32 degrees C) and then added it to three gallons (11.4 L) of cold water in the 6 1/2 gallon (24.6 L) glass carboy. I pitched the yeast starter and waited.

Fermentation began within six hours and two days into it, the kraeusen blew the airlock right off the top of the carboy. Either the higher temperatures of summer brewing or a very active yeast strain was the reason, but I didn't worry. I just sanitized the airlock and replaced it and let the beer ferment out. I bottled it a week later.

The Brewmaster's Select™ English Special Bitter is a bit hoppier than an ordinary bitter, but it is a very smooth-drinking beer. Alcohol by volume is about 4 percent and the flavor is right up to style, owing mostly to the Bullion and Fuggles hops used. This beer will get better with time.

Both kits recommend aging the ales for at least four weeks in the bottle and I agree. Drinking the beer too early is probably one of the biggest mistakes beginning brewers make and I speak from experience. The guy who got me started brewing used to tell me to bring my beer into his shop so he could lock it up before I drank it all too early. I was very anxious about tasting my brew and probably scared more of my friends away with "green" beer than bad beer. I have since learned pa-

tience, plus there's enough beer stockpiled in my cellar that I always have a batch to sip on while waiting for the new beer to age.

As for the goal of brewing session beers, these kits make, in my opinion, two good examples. The high final gravity of the Bierhaus kit keeps the beer a little off the mark, but the Alternative Beverage kit is surely a shining example. Nice rounded flavors, low alcohol and easy to drink throughout an evening.

One last note. What topics should you discuss while drinking session beers? I

won't venture a guess, but we have an unwritten rule in the taverns around here that religion, politics and Detroit sports teams are off limits. But walk into any tavern or alehouse in my area and all three can be discussed passionately. So I would say, talk about whatever moves you, but if conviviality starts to wane, move onto another subject and pop for the next round.

Mark Moylan is a freelance writer in Michigan.

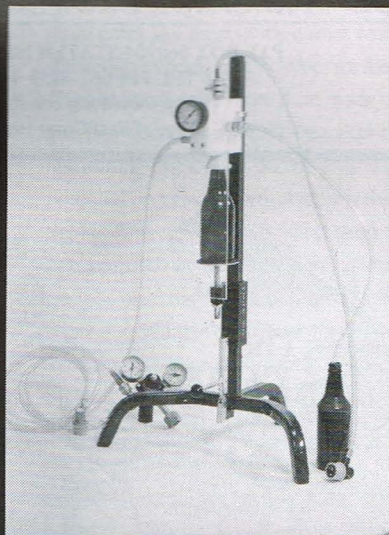
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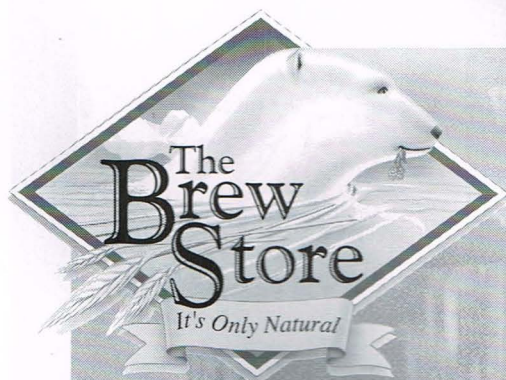
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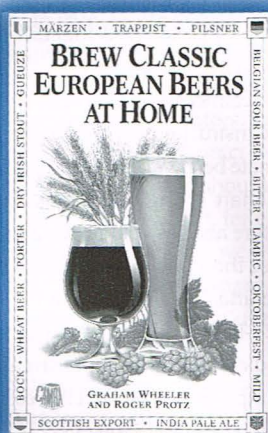


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REVIEWS

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Brew Classic European Beers at Home



Graham Wheeler admits he had given up the thought of writing any more homebrewing texts, but was easily persuaded by Campaign for Real Ale to reenter the field. His book, *Brew Classic European Beers at Home*, written with Roger Protz, represents their second foray into the realm of recipe books. Protz, of CAMRA fame, was responsible for coaxing the recipes from the many brewers represented, but the hard work of transforming these into something suitable for homebrewing was all Wheeler's.

Wheeler has squarely aimed this book at a wider audience than his previous writings, so all recipes have versions for five U.K. gallons, five U.S. gallons and 23 or 25 liters. With an eye on the U.S. market, temperatures are now quoted in Fahrenheit as well

as Celsius, and alcohol content is given by weight and volume.

The recipes themselves, and there are 92 of them, are centered on a more realistic 80 percent mash efficiency, a welcome move away from the unrealistically low 75 percent he has previously used. However, he still uses hop utilization rates of 20 percent based on a 90-minute boil, and sticks to his assertion that late hopping (last 15 minutes) does not contribute much bitterness to the wort. I have to disagree with him here. I always find myself reducing Wheeler's hop rates to a lower level.

The range of recipes is impressive, from classic British beers such as Bass and Worthington White Shield, through some well-known lagers (Budvar, Pilsner Urquell), German beers (Paulaner Salvator, Schneider Weisse) to a welcome range of Belgian beers from Hoegaarden White to Cantillon lambic and gueuze. The recipes are all full mash, but 27 also have malt extract versions. All of the recipes use infusion mashing techniques, and for those that traditionally call for decoction mashing, temperature stepped infusion mash schedules are detailed. For those who prefer the decoction mash, explicit instructions are given.

No recipe book can ever guarantee the beers produced will be identical clones of the commercial item or even that the same beer will be produced every time by all brewers. Such are the variabilities inherent in homebrewing. The recipes in this book are close to the real thing, in some cases (Tolly Mild), impressively so. Even so, they should be treated as valuable starting points for the

experienced brewer to tweak the procedures to develop a personal recipe.

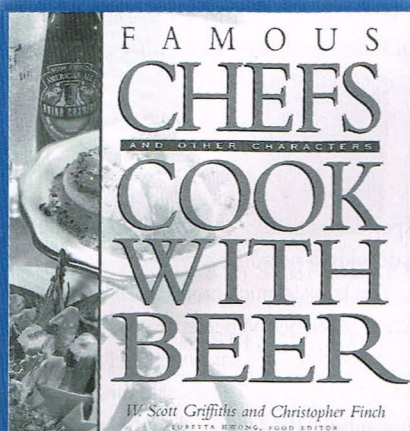
This book is much more than simply a collection of recipes. Wheeler gives a competent basic introduction to mashing briefly covering all the major areas. The shortcomings are few; for example, the failure to mention at all the requirement for soft water in brewing certain beer styles. While the discussion of yeast is more complete than in his earlier writings, he still fails to indicate specific types for the recipes. The deficiencies are more than made up by an excellent section on soured beers containing a fascinating discussion on the effects of redox potential on yeast growth and how this affects the souring of beers. I haven't seen this discussed in any of the homebrewing texts in my possession. This short discussion (less than a page) is a valuable contribution and well worth a read. There are some interesting speculations on how the composition of brewing water affects the souring of beers.

I wouldn't recommend the book for a new brewer, but for one who is experienced and looking to produce high-class, commercial standard beers, this book is a must. You will obtain not only a collection of excellent recipes, but also some useful, even novel, tips on homebrewing.

Brew Classic European Beers at Home by Graham Wheeler and Roger Protz, CAMRA Books, 1995, publisher's suggested retail price is \$13.95 plus shipping available through Chautauqua Inc. (800) 977-BEER.

Reviewed by Gillian Grafton, a biochemist researching leukemia for the U.K.'s Medical Research Council at the University of Birmingham. Grafton has been homebrewing for 15 years and is membership secretary of the Craft Brewing Association, the U.K. National Homebrewers Association.

Famous Chefs (and Other Characters) Cook With Beer



Famous Chefs (and Other Characters) Cook With Beer is a 224-page cookbook written by W. Scott Griffith and Christopher Finch. The book contains a brief introductory section on the basics of cooking with beer and 161 pages of recipes, all containing beer as a main ingredient. It concludes with an appendix to make using the recipes easier.

The first thing that struck me about *Famous Chefs* is that it is very aesthetically pleasing. The cover is attractive enough to adorn your coffee table. The inside pages are laid out in a way that is both appealing to the eye and easy to read.

Although the introduction is brief, it accomplishes its goal — to initiate the novice into the art of cooking with beer. Included in the introduction are notes about why people cook with beer, how to taste beers, a discussion about beer styles as they relate to cooking and tips on how to be more successful when cooking with beer. I was quite pleased to see the author encourage readers to be creative in cooking and serving beer with dinner. "A great beer-based dish fits into any meal, whatever the other courses. And where serving beer with food is concerned, the rules are there to be broken."

Another feature that sets *Famous Chefs* apart is the substitution chart located in the back. This chart groups beers by category

and lists their relative malt and hop character. If you cannot buy the beer listed in the recipe, by using this chart, you will be able to substitute with confidence.

I have made four of the recipes for dinner (Pyramid Hefeweizen Breadsticks, Tossed Salad with Wheat Beer Vinaigrette, Chicken Breasts with ale and cumin and the Barley Mushroom Pilaf) and all were fantastic! The breadsticks were my favorite. Be sure to serve them hot (and with a good beer, of course).

My only criticisms of this book are minor. First, it seems that every third recipe calls for a Rhino Chasers beer. I somehow doubt this is a coincidence, because one of the authors, Scott Griffith, is the owner of William & Scott Brewing Co., brewers of Rhino Chasers. Second, I would like to see a more complete table of contents. The recipes are grouped in relatively loosely defined chapters ("seafood" and "poultry, rabbit and feathered game") and the reader is left to search. I would prefer to see a more detailed index listing each recipe, either at the start of the book or at the beginning of each chapter.

Those minor criticisms aside, *Famous Chefs* does what it sets out to do: teach you how to cook with beer and provide a number of appealing recipes. The book would make a great gift for the beer enthusiast or chef wannabe on your list.

Famous Chefs (and Other Characters) Cook with Beer by W. Scott Griffith and Christopher Finch is published by Doubleday Publishing, 1996, publisher's suggested retail price is \$25.

Reviewed by Garshom L. Arkoff, a homebrewer since 1993 and a bronze medal winner in the AHA 1994 National Homebrewers Conference. In real life, he is studying for an M.B.A. at Sonoma State University and doing graduate research through the Craft Brewing Business Institute.

Gulfstream Carbonater

Carbonating stones have been used by small and medium-sized commercial brewers throughout the 20th century to carbonate beer in pressure tanks. The stone

acts as a diffuser, breaking the injected CO₂ into finely divided beads readily absorbed by beer. To date, most of the related equipment has been designed for commercial use. Zahm and Nagel of Buffalo, N.Y., make excellent and widely praised systems for five-, 10-, and 15-gallon volumes. However, because of their expense, stones have been used mainly in brewing research. Gulfstream Brewing Products has introduced a carbonating stone to fill this void for amateurs.

The stone is about three inches in length and one-half inch in diameter. It has a one-fourth-inch-diameter hose barb, so it is easily attached to the gas line of a Cornelius keg or equivalent vessel. The stone is made of 316L stainless steel. With reasonable care, Gulfstream's carbonating stone should last a lifetime. The stone pore size is two microns. I personally prefer something along the lines of 0.5 microns, but in tests I conducted this did not turn out to be a big issue.

Gulfstream's carbonating stone comes with complete instructions on how it can be used to carbonate beer and oxygenate wort. Included is a chart giving equilibrium pressure, temperature and gas volume relationships.

To use the stone in a standard Cornelius keg, one attaches the stone to the gas line with a 24-inch length of one-quarter-inch-interior-diameter tubing. Gulfstream states hose clamps are not needed if pressures are kept below 40 psi. However, if one has access to sanitary clamps, I recommend their use. The procedure consists of a slow feed with the pressure being increased in 1 to 2 psi increments at regular intervals.

The instructions include directions for cleaning and sanitizing the stone. It is very important to flush the stone properly after use. Beer constituents can partially penetrate the pores, and they need to be removed. Gulfstream recommends sanitizing the stone by soaking it in a solution. While this will work most of the time, on rare occasions "dead spots" can occur in the pores. I find boiling the stones (15 minutes is sufficient) is the safest sanitation procedure.

The hose barb has been welded to the cylindrical portion of the stone, and the quality of the welding on my sample stone was imperfect. This should not, however,



be seen as a flaw. The number of people who can do true sanitary welding with a sophisticated alloy like 316L stainless are few in number, and occupy well-paying jobs with equipment fabricators. Given the short time the stone is in contact with beer, the rough edges in the weld should not create the problems that would, for example, occur if this type of welding were used in a fermenter. In fact, Gulfstream is to be congratulated for electing to use such a top-quality stainless alloy.


On occasion, homebrewers have expressed concern that direct CO2 injection will not give the quality of foam that "natural carbonation" does. In truth, there are really two issues involved: foam formation and foam stability and texture. The ability to form foam depends on the amount of CO2 dissolved in equilibrium conditions as well as to selected beer proteins. For this the carbonating stone is an effective aid in achieving equilibrium. Foam stability, on the other hand, is a completely different matter. Modern research has shown it depends on the presence of selected glycoproteins (carbohydrate-protein complexes) and the absence of foam-negative factors such as excess fatty acid levels. The amount of carbonation and the method of carbonation are not relevant. The brewing materials and procedures are the culprits if beer

foam lacks texture and stand. In short, those who elect to go with direct carbonation using a beer stone should be assured the quality of the finished beer foam will be as good as the brewing materials and procedures used permit.

While the focus of this review is on beer carbonation, there is a good chance the stone will find as much or even more acceptance as a wort oxygenator. The key is that the wort oxygenation is taking place inside a closed vessel, after which the wort

can be promptly combined with yeast in the fermenter. This system actually outperformed standard commercial inline systems, in terms of the amount of oxygen actually available to yeast in the fermenter. In summary, good show Gulfstream!

Manufacturer's suggested retail price is \$27.99. For information contact Gulfstream Brewing Products, 6331 A Woodville Hwy., Tallahassee, FL 32311; (904) 421-6902.

Reviewed by George Fix, *Zymurgy* technical editor and award-winning homebrewer. 

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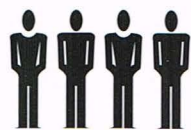
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HOMEBREW CLUBS



Hank Stewart

What Some Clubs Will Do For Homebrew

Club-run Regional Festivals and Competitions

Keepest the portapotties downwind, have a 6-foot-10-inch, 500-pound enforcer and hope your chairs don't sink into the pavement. No, these aren't set directions from the latest David Lynch movie, they're just some of the nuggets you come across when the topic is regional homebrew competitions and festivals.

Local-level competitions and festivals are spreading across the country like the aroma of boiling wort (from 72 sanctioned competitions in 1992 to 132 in 1995, according to the American Homebrewers Association). But there are a handful of larger regional competitions and festivals that have stood the test of time and continue to deliver knowledge, camaraderie and just plain fun. These are a few of their stories.

Crescent City Competition

Produced by New Orleans' Crescent City Homebrewers, the Crescent City Competition has been around for six years and has seen as many as 350 entries, though the total for 1996 was down to around 200 with 275 attendees.

If you're considering a visit to the April competition, here's what you can expect. Les bon temps start to roulez Friday night with the first round of judging and a big party featuring donated microbrews and giant vats of jambalaya prepared by club members. "We have a lot of frustrated chefs," says former Crescent City Homebrewers President Steve Clark. Tickets are \$3.



Judges sample entries at the Crescent City Competition.

You should make every attempt to survive Friday, because Saturday gets even better. The day begins with the second round of judging, then features a lunch (again prepared by club members) of red beans and rice and alligator sauce piquante (yes, it does taste like chicken). A band plays and beer flows throughout the afternoon and into evening, when it is time for dinner. For this, the club whips up a little something they call mufaletta pasta. The awards ceremony and more beer tasting follow dinner. Your ticket for the whole day, including all that food and beer, will set you back \$10.

Somehow the Crescent City Homebrewers manage to make a little money off the whole affair (\$6 entry fees cover the cost of the festival, then the gate and raffling of donated prizes is gravy, no pun intended). The club's main fund-raiser is their annual Winterfest, where they pour homebrew and, naturally, cook for 350 attendees.

Bluebonnet Brew Off

As you might expect, any competition that awards bragging rights in Texas is going to be intense so it should come as no surprise that the 1996 Bluebonnet Brew Off received exactly 819 entries.

Now in its 10th year, the Brew Off is put on by four Texas homebrew clubs, the Cowtown Cappers (Fort Worth), the Arlington Homebrew Club, the North Texas Homebrew Association (Dallas) and the Denton Fermented Brewers Society. The clubs rotate hosting the event.

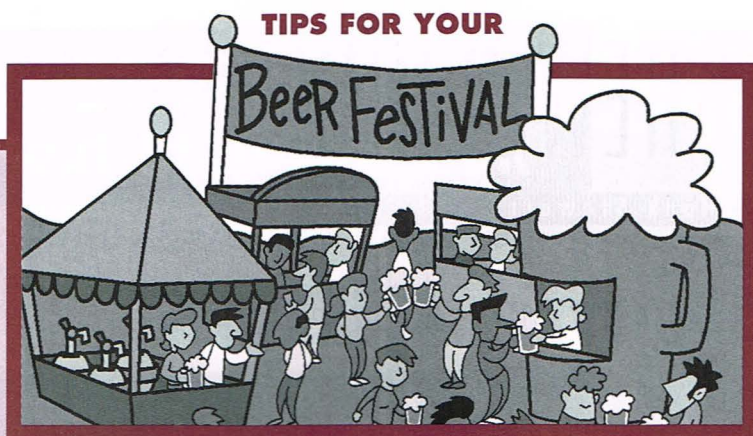
In March 1996, the brewoff was in Fort Worth, where 130 attendees enjoyed a Texas-sized dinner on Friday night with speakers, demonstrations and, of course, beer tasting. Saturday morning began with the final round of judging and words of wisdom from industry speakers. The afternoon was highlighted by a pub crawl of Dallas



Bluebonnet Brew Off Best of Show trophy.



Bluebonnet members cheer the winners of the contest.



The organizers were more than happy to pass on advice to anyone considering starting a festival. Here's some of their collective wisdom.

- 📌 **Plan far ahead.** This was the No. 1 piece of advice. Start planning 10 to 12 months before the date.
- 📌 **Get as many volunteers as you can.** Putting on a festival is "more work than you think," according to Steve Clark, and the more people you can involve the less likely things are to fall between the cracks.
- 📌 **Form committees.** Consider creating the following committees: sponsorship, judge registration, site and food, competition logistics and club contact to spread the word to other homebrew clubs. Each committee should meet at least once a month.
- 📌 **Get sponsors.** This is key to offsetting costs, especially for larger events.
- 📌 **High-quality judging.** Make sure judges are well-qualified and can provide entrants with written constructive criticism.
- 📌 **Don't forget the entertainment value.** Try to make the event educational (guest speakers help here) and fun for all concerned.
- 📌 **Remember the weather.** It seems obvious, but contingency plans are a must.
- 📌 **No drinking and driving.** This can be achieved by holding your event at a hotel and encouraging everyone to stay the night. Some clubs even rent a few extra rooms and slip keys to attendees who need them. Consider limiting the drinking time. Make sure attendees are well-fed. Appoint designated drivers. Appoint club members to monitor behavior and cut off individuals if necessary.
- 📌 **Have a good public address system.** This is often overlooked.
- 📌 **Advertise.** Contact other homebrew clubs, put up posters, register with the American Homebrewers Association so your festival will be listed in *Zymurgy*. Have a good mailing list and start early.
- 📌 **Respect people's beer.** It's a labor of love, treat it as such. Be sure to have ample receiving and storage space prior to competition, consider enlisting the aid of a friendly restaurant or beer store.
- 📌 **Don't try to get too big too fast.** Allow your event to grow organically. If it's run well, it will.
- 📌 **Learn from your past.** Hold a follow-up meeting within two weeks after your event to determine what went right, wrong and how you'll do things next year.
- 📌 **Think of everything.** Don't worry, no one can, but you still have to try. Imagine yourself going to a homebrew festival. Mentally walk your way through the whole event and consider what needs to be done at every step. Many minds will help here.
- 📌 **Position your portapotties downwind** — A tip from a festival organizer who learned the hard way.



Jim Berryhill, John Wolff, Pat and John Morrison, Caroline Duncker and Donna Murphrey enjoy a brewery tour in Texas.

that required three buses all pointed in different directions. The buses returned for the awards ceremony and continued tasting.

Cowtown Capper member Rob Stenson, who was heavily involved with the 1996 brewoff, said the festival presented awards in 24 beer categories, plus mead, cider and saké. The brewoff has judging down to a science, says Stenson, citing the club's own judging software. Stenson attributes another aspect of the festival's success to its being held in a hotel where most attendees stay to eliminate drinking and driving concerns.

Stenson has some advice for clubs considering hosting a festival. "Do the second one first," he says. "The second one's always easier."

The Dixie Cup

Since October 1995, the coveted Dixie Cup has been on vacation in Florida. And while its "owners," the Foam Rangers of Houston, Texas, are distressed about their trophy's prolonged absence, they don't worry for its well-being. The Dixie Cup trophy sends them a scenic Florida postcard every month.

The Dixie Cup is the South's oldest homebrew competition. It has been around since 1983, and until 1995 the Dixie Cup trophy had never left Texas. Then came the dark October day when the Central Florida Home Brewers won the competition and spirited the Texans' sacred zymurgological

icon off to the land of Mickey, Minnie and cryogenically preserved animators. The Floridians (more about their festival later) have been twisting the knife monthly by sending the woeful Texans a postcard of the Dixie Cup enjoying the Sunshine State.

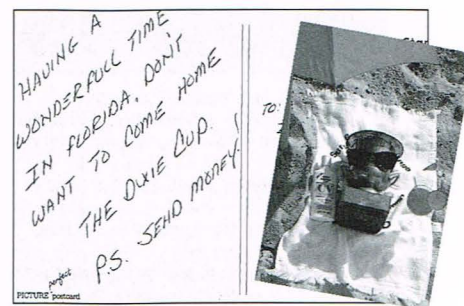
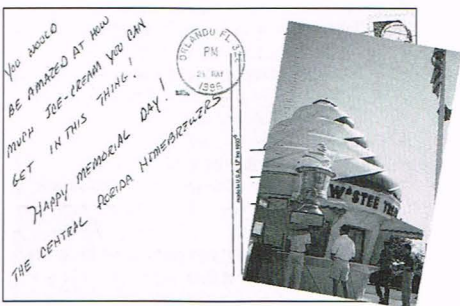
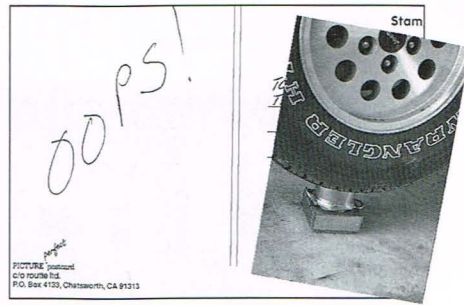
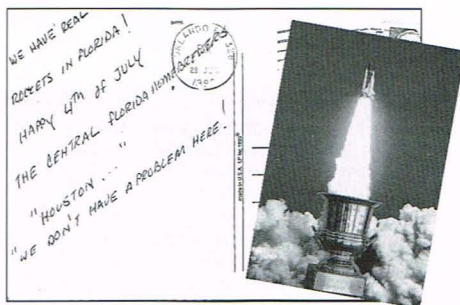
With more than 500 entries each year, winning the Dixie Cup is no mean feat. Like the Crescent City Competition and the Bluebonnet Brew Off, the Dixie Cup is a two-day affair with a Friday evening kickoff of first-round judging, a potluck dinner and beer and food tasting with Fred Eckhardt, who has tantalized attendees by combining beer with chocolate, cheese and ice cream.

Saturday morning the judging continues, while nonjudges attend a conference featuring guest lecturers such as George Fix, Pierre Celis and Anchor Brewing Co.'s Tim Haring. This is followed by a Houston pub crawl and the awards ceremony, which includes a big jambalaya dinner prepared by the frustrated chefs of the Crescent City Homebrew Club.

According to Steve Moore, a former Dixie Cup organizer, the festival costs \$5,000 to \$6,000 to put on, most recouped through entry fees, admission charges and a big raffle with plenty of donated prizes.

Sunshine Challenge Cup

As any Texas homebrewer will tell you, the Sunshine Challenge Cup is run by the Central Florida Home Brewers, the lowdown varmints who snagged their Dixie Cup.



The Central Florida Home Brewers created a series of postcards "exploiting" the Dixie Cup to fuel excitement and the spirit of competition.

In its sixth year, the 1996 Sunshine Cup had 370 entries and over 300 attendees. Unlike other festivals, this is a three-dayer. Friday night is a big luau at a Holiday Inn in Orlando, conveniently connected to The Mill, a local brewpub and the Central Florida Home Brewers' sponsor.

Saturday morning attendees have the opportunity to take the Beer Judge Certification Program judges exam. The day features guest speakers. Saturday night is another big dinner at The Mill. The evening features a healthy selection of sponsor-donated beers plus entertainment by Barleywine, a band that includes local homebrewers and performs only at the Sunshine Challenge. It has been known to change its name from year to year, so don't bother looking for the compact disc.

Sunday begins with more judging, moves on to an afternoon Orlando pub crawl and ends with an evening awards ceremony.

Sunshine Cup Coordinator Ron Bach estimates the festival costs between \$9,000 and \$10,000. The goal is "to put on the highest quality event and break even." Entry fees (\$5.50 each) cover the cost of the competition and sponsors chip in to cover additional costs. This year's sponsors included Boston Beer Co., Anheuser-Busch Specialty Brewing Group, Sierra Nevada, Ybor Brewing, Liquid Bread and area homebrew supply and beer merchants.

And what about those Texans bent on settling a score? Bach says, "They came after us hard and took a lot of ribbons, including our Heavy Medal Award for the individual brewer with the most points, but they didn't take the Sunshine Cup."

AHA CLUB-ONLY COMPETITION WINNERS

KINSMANN'S KÖLSCH WRAPS UP ULTIMATE ALT

The 1996 Ultimate Alt Club-Only Competition received 66 entries for the March 23 and 24 judging at the Rohrbach Brewing Co., Rochester, N.Y. The Upstate New York Homebrewers Association organized the event.

- 1 **JACK KINSMANN** of Bartlett, Ill., representing Club Wort.
- 2 **KIRK W. OLSEN** of Erie, Pa., representing the Brewing Excellence in the Erie Region (BEER).
- 3 **RONALD E. ALLEMAN** of Bolton, Conn. representing the Hop River Brewers.

BOCK IS BEST RESULTS

There were 68 entries this year, and the competition was organized and judged by the New York Notorious Brewers of Montgomery, N.Y.

- 1 **BRUCE STOTT** of Rockville, Conn., representing the Hop River Brewers.
- 2 **ROBERT DAWSON** of New Carrollton, Md., representing Brewers United for Real Potables.
- 3 **BILL CAMPBELL** of North East, Penn., representing Brewing Excellence in the Erie Region.



American Homebrewers Association
SANCTIONED COMPETITION PROGRAM

KUDOS

ST. PAUL BREWING CELEBRATION

May 7, 1995 — St. Paul, Minn., 152 entries
Peter Ausenhus of Minneapolis, Minn., won best of show.

1995 THIRSTY HOMEBREW COMPETITION

Nov. 18, 1995 — Iowa City, Iowa, 213 entries
Peter Diltz of Coggon, Iowa, won best of show.

KEYSTONE HOPS WAR OF THE WORTS I

Jan. 20, 1996 — Montgomeryville, Pa., 181 entries
Chuck Hanning of Malvern, Pa., won best of show.

LAS VEGAS WINTERFEST 1996

Jan. 21, 1996 — Las Vegas, Nev., 241 entries
Jim Livingston of Mentone, Calif., won best of show.

SECOND ANNUAL OREGON LAGER JAM

Jan. 27, 1996 — Albany, Ore., 35 entries
John Sterner of Albany, Ore., won best of show.

PAUMANOK HOMEBREW COMPETITION

February 3, 1996 — Long Island, N.Y., 88 entries
Shawn Bosch of Wading River, N.Y., won best of show.

FUR RONDY '96

Feb. 13, 1996 — Anchorage, Alaska, 214 entries
Dennis Urban of Anchorage, Alaska, won best of show.

KANSAS CITY BIER MEISTERS' 13TH ANNUAL HOMEBREW COMPETITION

Feb. 16, 1996 — Olathe Kansas, 342 entries
Steve Ford of Shawnee, Kansas, won best of show.

COMMANDER SAAZ'S INTERPLANETARY HOMEBREW FLY BY

Feb. 17, 1996 — Cape Canaveral, Fla., 117 entries
Mike Lelivelt of Durham, N.C., won best of show.

THIRD ANNUAL FEBFEST

Feb. 17, 1996 — Lake Bluff, Ill., 50 entries
Shawn Quigley of Round Lake Park, Ill., won best of show.

SEVENTH ANNUAL REGGAE AND DREDHOP COMPETITION

Feb. 17, 1996 — Boulder, Colo., 189 entries
Mark Groshek of Denver, Colo., won best of show.

THIRD ANNUAL AMERICA'S

FINEST CITY HOMEBREW COMPETITION

March 2, 1996 — San Diego, Calif., 123 entries
Todd Fitzsimmons of San Diego, Calif., won best of show.

BIDAL SOCIETY HOMEBREW COMPETITION

March 8, 1996 — Kenosha, Wis., 153 entries
Jeff Sprecker of Warrenton, Md., won best of show.

MARQUIS DE SUDS OPEN

March 9, 1996 — Calgary, Alberta, 173 entries
Jack O'Reilly of Calgary, Alberta, Canada, won best of show.

NYCHG ANNUAL COMPETITION

March 9, 1996 — New York, N.Y., 126 entries
Tom Cahalane of Staten Island, N.Y., won best of show.

SECOND ANNUAL HIGH DESERT BREWERS SPRING THING

March 9, 1996 — Idaho Falls, Idaho, 82 entries
Alan Johnson of Idaho Falls, Idaho, won best of show.

QUEEN OF BEER

WOMEN'S HOMEBREWING COMPETITION

March 10, 1996 — Placerville, Calif., 49 entries
Vicki Newman Hearst of Orlando, Fla., won best of show.

WINTER CARNIVAL BREWER'S ASSAY II

March 16, 1996 — Fairbanks, Alaska, 25 entries
Wayne Swiers of North Pole, Alaska, won best of show.

MARCH IN MONTREAL

March 16, 1996 — Montreal, Quebec, Canada, 58 entries
Harry Wagner of Edmonton, Alberta, Canada, won best of show.

SIXTH ANNUAL MARCH MASHFEST

March 22, 1996 — Fort Collins, Colo., 201 entries
Scott Mills of Loveland, Colo., won best of show.

GREAT ARIZONA BEER FESTIVAL

March 22, 1996 — Phoenix, Ariz., 195 entries
Shane Baldwin of Phoenix, Ariz., won best of show.

PALM BEACH DRAUGHTSMEN HURRICANE BLOW OFF

March 23, 1996 — West Palm Beach, Fla., 131 entries
Larry Stenger of Royal Palm Beach, Fla., won best of show.

TENTH ANNUAL BLUEBONNET BREW OFF

March 23, 1996 — Irving, Texas, 819 entries
John Manczuk of Watauga, Texas, won best of show.

FIFTH ANNUAL NEW YORK CITY SPRING REGIONAL HOMEBREW COMPETITION

March 24, 1996 — Staten Island, N.Y., 217 entries
Shawn Bosch of Wading River, N.Y., won best of show.

CENTRAL NEW ENGLAND HOMEBREW COMPETITION

March 30, 1996 — Worcester, Mass., 91 entries
Bruce Stott of Rockville, Conn., won best of show.

HUDSON VALLEY HOMEBREWERS' INC.

SIXTH ANNUAL HOMEBREW COMPETITION
March 30, 1996 — Fishkill, N.Y., 191 entries
Jim Taylor of New Paltz, N.Y., won best of show.

THIRD ANNUAL GREATER

WICHITA HOMEBREW COMPETITION
April 12, 1996 — Wichita, Kansas, 156 entries
Gary Lloyd of Topeka, Kansas, won best of show.

FIRST ANNUAL BIG RED HOMEBREW CONTEST

April 13, 1996 — Bloomington, Ind., 63 entries
David Shea of Bloomington, Ind., won best of show.

DUKES OF ALE SPRING THING

April 19, 1996 — Albuquerque, N.M., 251 entries
Lonnie Haden of Albuquerque, N.M., won best of show.

THIRD ANNUAL NAKED

PUEBLO HOMEBREW COMPETITION

April 21, 1996 — Tucson, Ariz., 123 entries
Greg Scharrer of Scottsdale, Ariz., won best of show.

SIXTH ANNUAL DOCK STREET HOMEBREW COMPETITION

April 21, 1996 — Philadelphia, Pa., 215 entries
Bob Grossman of Haddonfield, N.J., won best of show.

GREEN MOUNTAIN HOMEBREW COMPETITION

May 11, 1996 — Burlington, Vt., 254 entries
Paul Hale of Burlington, Vt. and Phil Kaszuba of Essex Junction, Vt., won best of show.

FIRST ANNUAL HOME BREWERS

CONTEST AT THE BLACK HORSE BREWERY

May 11, 1996 — Clarksville, Tenn., 77 entries
Roy Conrad of St. Bethlehem, Tenn., won best of show.

OREGON HOMEBREW COMPETITION AND FESTIVAL

May 11, 1996 — Albany, Ore., 207 entries
Robert Wolff of Ellicott City, Md., won best of show.

Beer and Sweat

The folks at the Bloatarian Brewing League in Cincinnati, Ohio, have an unusual twist to their Beer and Sweat competition — it's an all-keg competition. That's the beer. It's held in southern Ohio in August, thus the sweat.

The 1996 competition received 81 five-gallon kegged entries and hosted approximately 250 attendees, with some coming from as far away as Japan. The event was held under a large tent in a parking lot where the chairs began sinking into the pavement. Before you jump to conclusions regarding Bloatarian girth, these chairs were empty. The sinking was the result of week-old paving.

Beer and Sweat begins on Friday night with an informal dinner. Judging begins Saturday morning after a judges exam and carries on throughout the day. At 5 p.m. there's a symposium featuring guest speakers and a beer tasting featuring more than 100 kegs of homebrew. This goes on into the evening when the winners are announced and everyone feasts on a buffet oddly enough not prepared by the Crescent City Homebrewers.

Bloatarian Robert Pinkerton reports there has never been a problem with attendees misbehaving. "Our sergeant-at-arms, Jim Rudy, is 6-feet-10-inches and weighs 500 pounds," says Pinkerton, "and when he says 'that's enough' no one argues."



Chuck Boyce, BBL treasurer and past BBL president hoists his mead trophy.



Brea Ludwigson and Bob Klahn with oak barrel mugs and oak barrel of mead.

NEW AHA REGISTERED HOMEBREW CLUBS

For a complete list of AHA registered homebrew clubs, contact the AHA. If you want to register your homebrew club with the AHA, send a brief letter including the same kind of information you see here and your club roster to the AHA administrator, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816; FAX (303) 447-2825; or aha@aob.org.

This list reflects club registrations received through Aug. 29, 1996. Club registrations received after that date will appear in *Zymurgy* Spring 1997 (Vol. 20, No. 1).

ITALY

**The Congo River
Delta Master Brewers Association**
c/o A.V. Bonetti
Via Moretta 25030 Rudiano
Brescia

JAPAN

Japanese Homebrewers Association
c/o Satoru Ishii
994-19 Shiratori-cho, Tsuchiura
Ibaraki 300
0298-32-2735
s-ishi@da2.so-net.or.jp

SLOVENIA

Društvo domaćih pivovarjev Ljubljana
c/o Miran Sinigoj
Cankarjeva 10
Ljubljana 1000
(386) 61 1253 071
FAX (386) 61 1681 057
miran.sinigoj@lek.si

UNITED STATES

ARIZONA

Rillito Creek Brew and Yacht Club
c/o Kendal Head
4775 N. 1st Ave.
Tucson, AZ 85718
(520) 293-1740
rillito@azstarnet.com

White Mountain Spotted Ales
c/o Mike Friedman
PO Box 2298
Pinetop, AZ 85935
(520) 537-0369

CALIFORNIA

Lodi Brew'ns
c/o Jerry Melton
312 S. Fairmont Ave., Suite C
Lodi, CA 95242

Mountain Mashers
228 Commercial St. #192
Nevada City, CA 95959

CONNECTICUT

Millstone Mashers
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72 Richard Brown Dr.
Uncasville, CT 06382
(860) 848-1752
rigbywe@gwsmtpl.nu.com

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Delaware Ale and Lager Society
(SANDALS)**
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Millsboro, DE 19966
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FLORIDA

Miami Area Society of Homebrewers
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6200 S.W. 37th St.
Miami, FL 33157
(305) 854-0505
djhbrew@aol.com

River City Brewers of Jacksonville
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Warner Robins, GA 31088
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The Midnight Carboys
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McHenry, IL 60050
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Pasadena, MD 21122
(410) 360-9478
b1j2x08@bell-atl.com

The Killer Ales of Maryland
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FAX (410) 558-8157
maya@grc.nia.nih.gov

WORT DOGS

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3305 Pinefield Lane
Waldorf, MD 20601

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Chesterfield, MI 48051
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c/o Pat Babcock
2478 Cabot St.
Canton Township, MI 48188-1825
(313) 397-9758
pbabcock@oeonline.com

Gitche Gumee South Shore Brewers

c/o Grant Ian Lyke
757 Elliott St.
Ishpeming, MI 49849
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FAX (201) 376-0493
djbrew@aol.com
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NORTH CAROLINA

Cape Fear Homebrewers Association
c/o David Holesovsky
918 Bashlot Pl.
Fayetteville, NC 28303
(910) 868-8267
dholesovsk@earthlink.net

OKLAHOMA

Southwest Oklahoma Brewing Society
c/o Peter Galie
22 Ketch Creek Dr.
Lawton, OK 73501
(405) 529-5250

PENNSYLVANIA

**State College Underground Maltsters
(SCUM)**
c/o Curt Speaker
309 Mary Elizabeth St.
Boalsburg, PA 16827
speaker@ehs.psu.edu

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State of Franklin Homebrewers
c/o Beth Eason
401 Allen Ave.
Elizabethton, TN 37643
(423) 542-3579
71363.1510@compuserve.com

The Music City Brewers

c/o Bryan Gros
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Nashville, TN 37204-4244
(615) 269-0412
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Spokane, WA 99212

Greater Everett Brewer's League

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6709 44th St. NE
Marysville, WA 98270

Senior Suds

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270934 Hwy. 101
Sequim, WA 98382
(360) 683-8251

The Olympic Brewtherhood

c/o Lantz Newberry
E 11 Rainbow Dr.
Shelton, WA 98584
(360) 427-5129
lantzni@ix.netcom.com

WISCONSIN

Great Lakes Homebrewers Association
c/o George Derler
1856 Butternut Lane
Grafton, WI 53024
(414) 375-0154

Pinkerton says the 1996 festival was a great success, despite chairs sinking into parking lot and 1,000 pounds of ice melting within the first hour on Saturday. Beer and sweat, indeed.

Southern California Homebrewers Festival



A scenic southern California site supports the annual homebrew festival.

Our final homebrew festival is not a competition but a massive homebrew happening. The Southern California Homebrewers Festival is the creation of about 30 homebrew clubs in the Southern California area. It is held the first Saturday in May at a scenic camping area overlooking Lake Skinner near Temecula, Calif. Many of the 1,200 to 1,300 attendees simply pitch a tent for the weekend.

Participating clubs set up booths around the festival and offer advice, merchandise, camaraderie and, of course, beer. One of the festival's organizers, John Thomas, sees potential here for some good-natured one-upmanship between the clubs. "One of the booths this year had an elaborate wooden bar with 25 spigots and servers dressed like the Blues Brothers," Thomas says. He suspects other clubs may now be contemplating how they can top that.



Revelers at the Southern California Homebrew Festival had more than 2,000 gallons of homebrew to sample in 1996.

The SCHF brings in food vendors and such speakers as Randy Mosher, George Fix and Chicago Beer Society President Ray Daniels. Attendees pay \$25 admission for the weekend, which includes all the beer they can drink. A massive raffle of donated prizes helps offset the remaining costs.

A Growing Trend

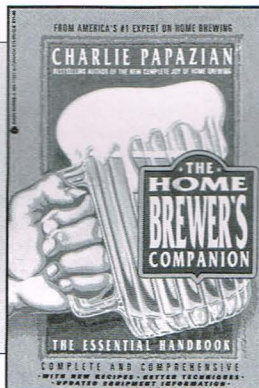
When asked to peer into the crystal ball and predict the future of regional homebrew

festivals, organizers were unanimous in their visions. They saw more and more festivals springing up to the point where every city will have at least one. As a result, they see the possibility for more regional festivals like their own. Does this worry them? Just the opposite. More homebrew festivals lead to more homebrewers and club members, which leads to more homebrew festivals, and on and on.

Hank Stewart is a freelance writer, homebrewer and volunteer fireman who lives just outside of New York City.

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Aurora, CO 80014
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FAX (303) 750-1751

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Colorado Springs, CO 80907
(719) 473-3776

Highlander Home Brew Inc.
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Littleton, CO 80120
(303) 794-3923; (800) 388-3923

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Broomfield, CO 80020
(303) 460-1776

Liquor Mart Inc.
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(303) 449-3374; (800) 597-4440

Old West Homebrew Supply
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Colorado Springs, CO 80903
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FAX (719) 635-7004
oldwest1@aol.com;
http://oldwestbrew.com

Poppy's Hop Shop
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Laporte, CO 80535
303-224-4420

Rocky Mountain Homebrew
7292 N. Federal Blvd.
Westminster, CO 80030
(303) 427-5076;
rmhbrew@ix.netcom.com;
http://www2@csn.net/~vsabbe/rmh
_beer_page.html

What's Brewin'
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Boulder, CO 80301
(303) 444-9433

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Denver, CO 80219
(303) 936-4422

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(860) 886-7676;
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Stanton, DE 19804
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<http://www.OnlineSU.com/BYOB>

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Atlanta, GA 30328
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(808) 877-3018

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Brew & Grow

2379 Bode Rd.
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(847) 885-8282; FAX (847) 885-8634

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Winfield, IL 60190
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TheCoop@Netwave.net;
<http://www.thebrewerscoop.com>

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Chicago, IL 60622
(800) 213-BEER

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Crystal Lake, IL 60014
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Evanston, IL 60201
(708) 328-9651; FAX (708) 328-9664

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St. Charles, IL 60174
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Sugar Grove, IL 60554
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<http://www.bacchusbarleycorn.com>

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(502) 425-1692

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Elsie's Gourmet German Delicatessen

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Finksburg, MD 21048
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FAX (410) 290-6795;
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(800) 666-7026

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Boston Brewers Supply Co.

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<http://www.xensei.com/users/modbrew>;
modbrew@xensei.com

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Worcester, MA 01607
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(612) 780-8191

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http://www.realbeer.com/brewhaus

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jbrew2101@aol.com

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Suffield, OH 44260
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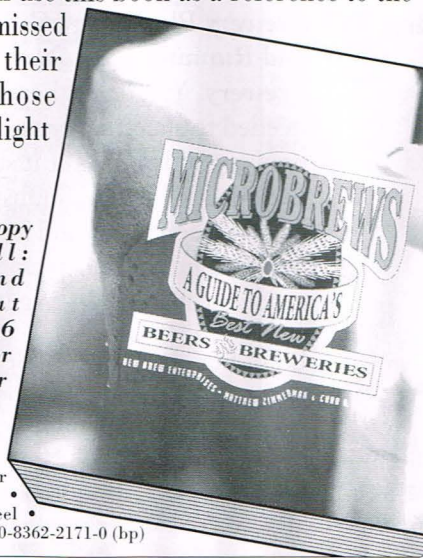
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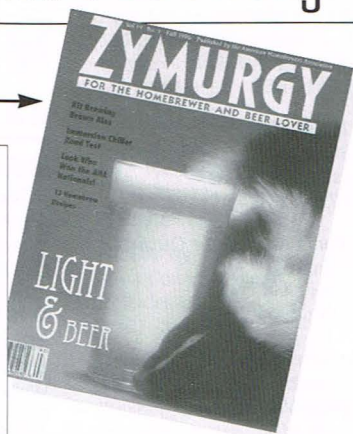
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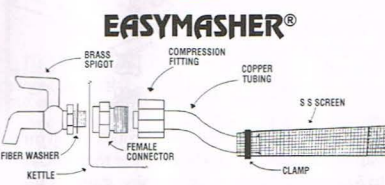
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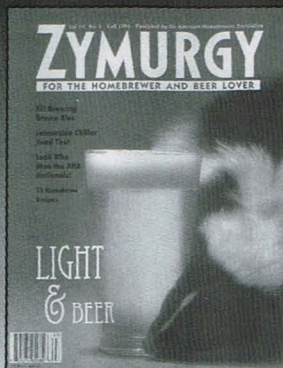
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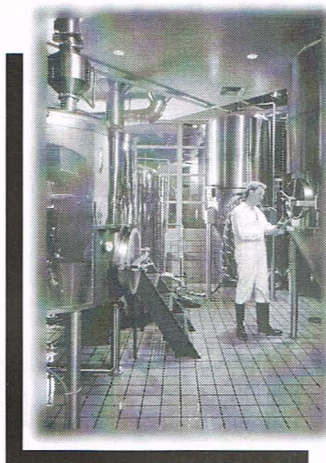
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Homebrewing on the Road

The setting: small town mid-America, beer wasteland, two to three hours from the nearest craft-brewed beverage where good beer is defined as that which is cold; a refinery, a candy factory and acre after acre of corn and soybeans. Young engineers work from dawn to dusk months on end on a refinery project designed to make the environment a better place to live. At the end of those long days there is nothing to come home to but cold pizza, burgers or anything that won't eat them first. These engineers are no gour-

mands by any stretch of the imagination, but they do know their beer.

With nothing to please their beer palate, how do they avoid despair? Fortunately, they work for a generous project manager in a community of scientists and engineers who know and support the art of zymurgy. The project manager, known to enjoy the fruits of grain on occasion, arranged for delivery of brewing supplies. A large package arrives. Dale Shumaker and Dave Anderson tear into the package like it is Christmas. When the paper settles they look with joy at a Cajun cooker, an

eight-inch immersion wort chiller, tubing, heat exchangers, valves, pressure vessels and reactors lying all around the room waiting to be assembled to refine the raw products into something to make Michael Jackson smile.

Dale and Dave are new to homebrewing, having been initiated into it by circumstance. They are members of a large homebrewing community that spans 21 offices across the United States. Within Radian International, a company of 2,500 employees, several dozen homebrewers share techniques, recipes, secret ingredients, equipment and, at times, the fruits of their labor. The community is loosely organized, made up of people from a variety of backgrounds. Their ranks include environmental, chemical, civil and mechanical engineers, chemists, geologists, computer scientists, statisticians and many other disciplines that comprise a multifaceted environmental consulting firm.

There is no formal membership roll, no regularly scheduled meetings, no expressed higher purpose. However, encouragement, advice and recommendations are exchanged in the halls, over the phone, through e-mail and just about any other means. Periodically, not more than once or twice a year, brewers are extorted to share their latest brew after work. These sessions often result in new brewers being recruited into the fold.

The inaugural session, a contest of sorts, was held a couple of years ago. About 25 brewers from the company's Austin, Texas, office



Engineers Dale Shumaker, Stephanie Taylor and Terry Cirbo pass their after hours time by practicing their homebrewing.

Pale Ale

Ingredients for 5 gal (19 L)

- 4 lb Munton and Fison light DME
- 2 lb two-row pale ale malt
- 1 lb two-row pale ale malt toasted at 350 degrees F (177 degrees C) for 10 minutes
- 1/4 lb Special "B" Malt
- 1 lb 40 °L crystal malt
- 1/4 lb wheat malt
- 1 1/2 oz Northern Brewer whole hops, 7.5 to 9.5% alpha acid
- 1 1/2 oz Cascade whole hops, 5 to 6.5% alpha acid
- 1 oz Cascade (dry-hopped in secondary)
- 1 tsp Irish moss (15 min.)
- Wyeast No. 1028 London Special

Partial mash the grains per Papazian. Add DME to sparge and bring to boil. Add one-half ounce of Northern Brewer hops and one-half ounce of Cascade hops 15 minutes into the boil. Add another one-half ounce of Northern Brewers and one-half ounce of Cascades 30 minutes into the boil. Add final one-half ounce of Northern Brewers and one-half ounce of Cascades 50 minutes into the boil. Boil remaining 10 minutes, remove from heat and chill to 75 degrees F (23 degrees C). Strain chilled wort through a large stainless-steel household strainer to remove hops and trub. Add water to make five gallons. Pitch yeast and ferment three days in primary or until yeast activity subsides. Rack to secondary, add one ounce of Cascades directly to fermenter and ferment ten days. Add 1 1/4 cups of light DME at bottling.




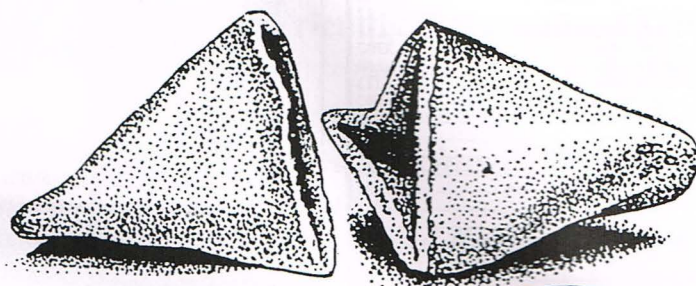
Beer engineers Stephanie Taylor and Dale Shumaker don't let business travel interfere with their homebrewing.

entered pale ales, porters, stouts, Scotch ales, ciders and red ales. An informal judging was held and winners announced. One of the winning recipes was my pale ale. More recently, the contest format has evolved into loosely organized tasting sessions where you can find out if your latest product is really as good as you think it is.

Brewing frequency waxes and wanes with the engineers' travel schedules, workloads and supply (how much of the previous batch is still in the pantry). Dale and Dave are examples of the young engineers the company

includes, so it is no surprise they came to homebrew away from home. No one knows what will become of their brewery after their company project ends. There is a rumor it will stay in town with the tradition being carried on by a homebrewer recently recruited from the ranks of the client. But then it may be "mothballed" in anticipation of a new project in a different beer wasteland.

Leo Dielmann is an environmental engineer working with Radian international, an environmental consulting firm in Austin, Texas. He has been homebrewing for three years. 



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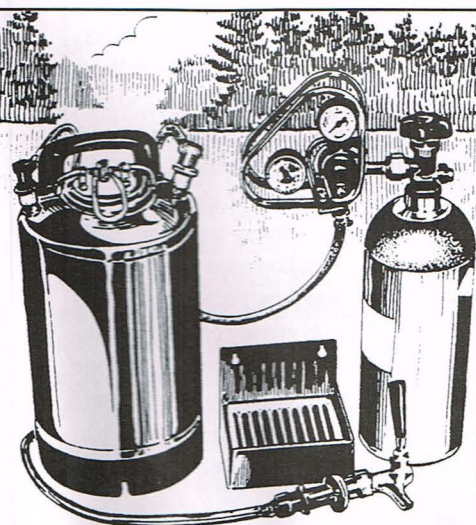
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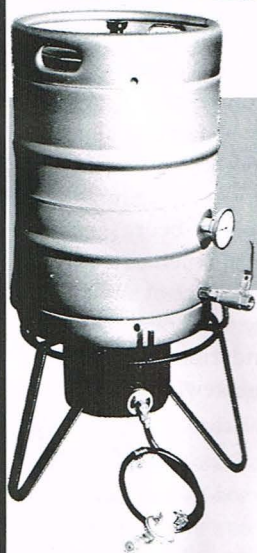
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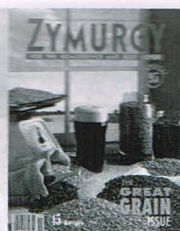


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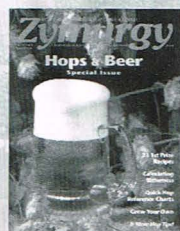
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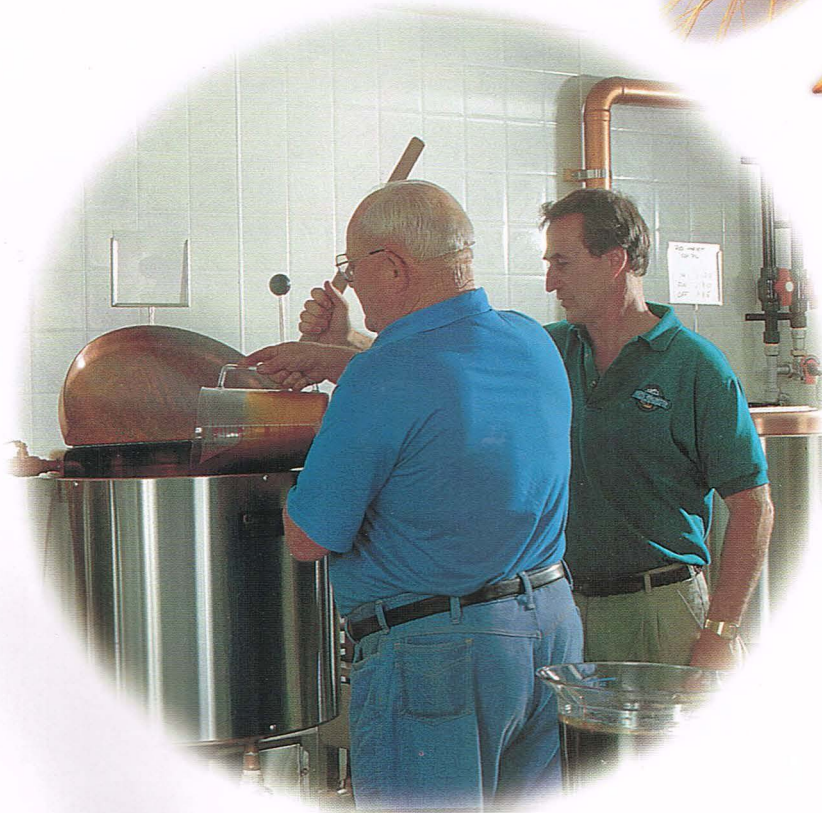
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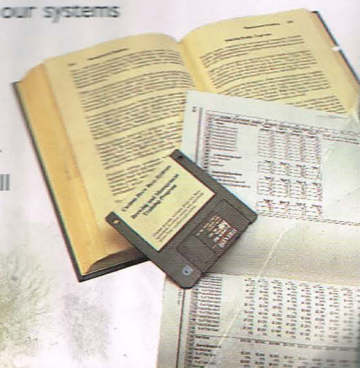
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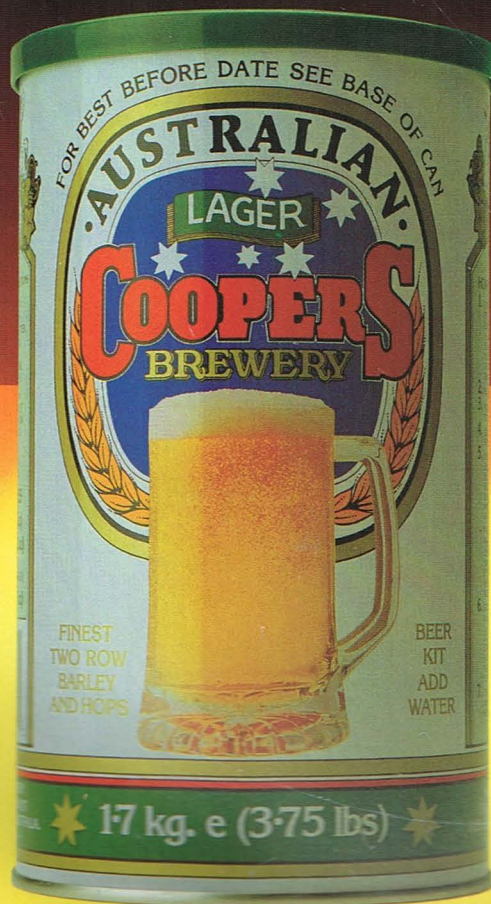
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