

Vol. 20 No. 1 Spring 1997 Published by the American Homebrewers Association

# ZYMURGY

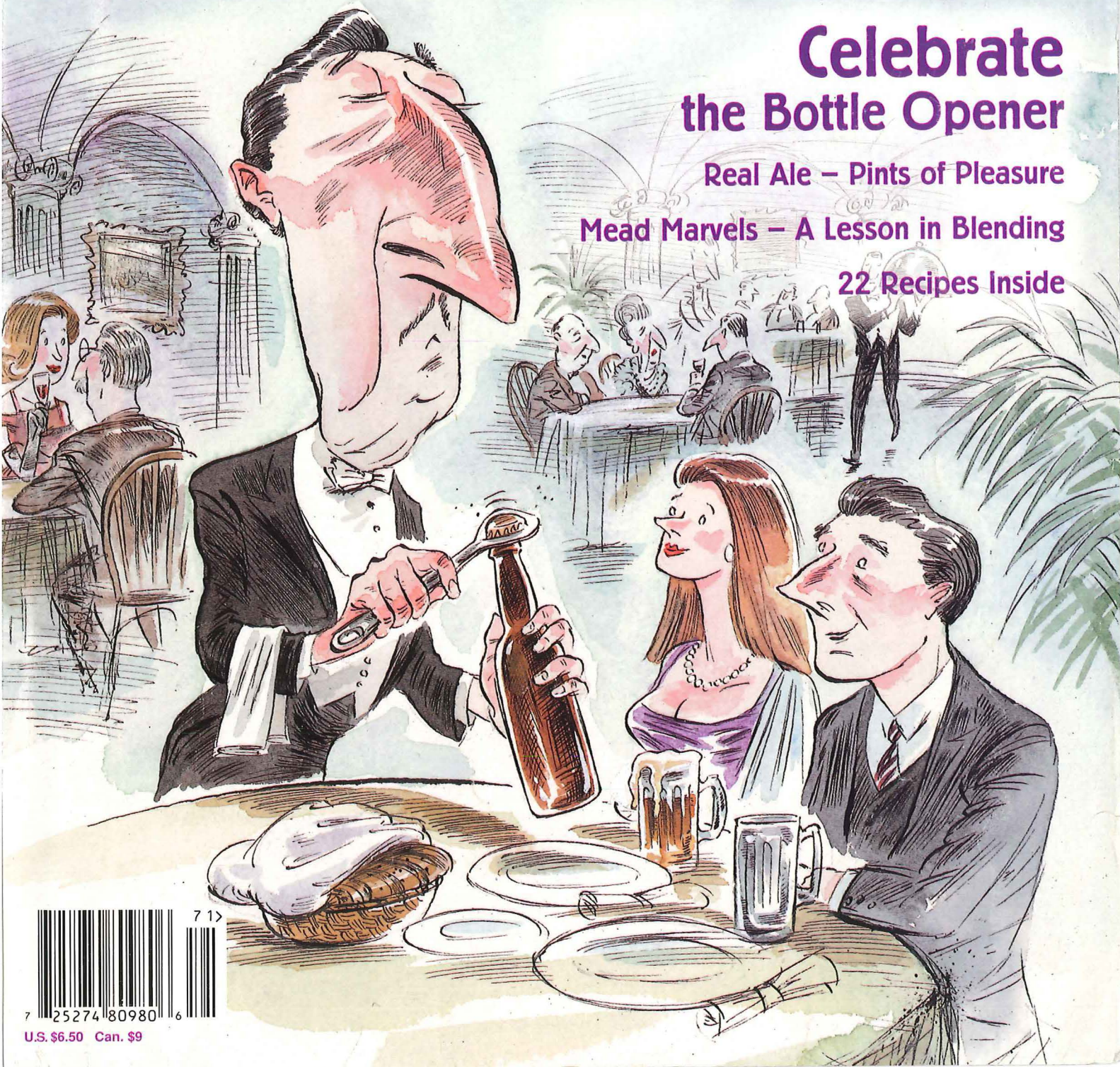
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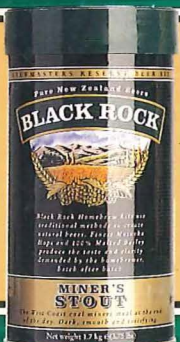
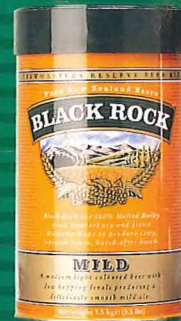
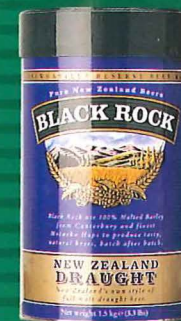
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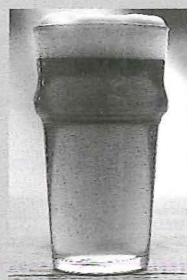
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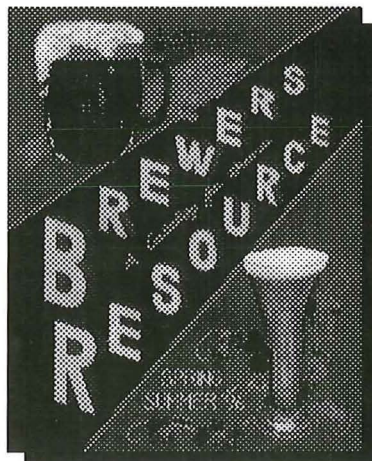
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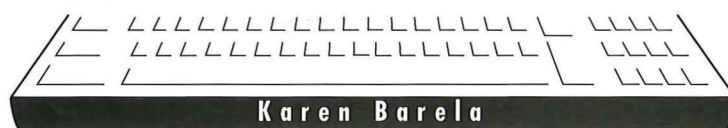
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# EDITORIAL



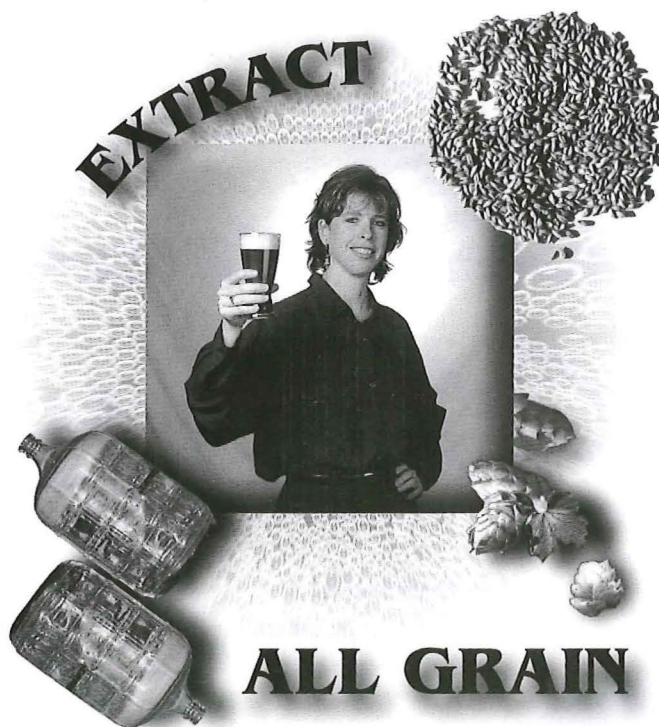
## You Are What You Homebrew

In our AHA 1995 membership survey we asked, "Who introduced you to homebrewing?" Some 47 percent said you introduced yourself. This probably says several things about you as an AHA member: you needed a hobby, you're a self-starter and you should tell a friend.

We all need a hobby and research proves it. In a nationwide consumer survey first published in 1988 by the Hobby Industry Association, nearly one of every three U.S. households had at least one occupant involved in craft activities. When the survey was conducted in 1994, the number of households with hobbyists had grown to 90 percent, a substantial increase in a six-year period.

Homebrewing offers the perfect hobby — an opportunity to participate in a virtually limitless variety of creative endeavors, many of which require no particular talent, just a desire to craft satisfying homebrews. In an increasingly mechanized, computerized society homebrewing allows us a sense of satisfaction and enables us to take pride in saying, "I brewed it myself."

Perhaps it's the homebrewing hobby itself that attracts self-starters. You like to build and use gadgets. We know most of you are college educated. You brew for



both the process and the end result. Only 8 percent said you brew for the end product alone and another 6 percent answered that you brew for the science and the process, with the end product becoming almost secondary.

You make room for this hobby in your life. You love this hobby! You should tell a friend about homebrewing.

"Who introduced you to homebrewing?" In addition to you self-starters out there, another 37 percent said you were introduced

to homebrewing by a friend. Friends shouldn't let friends go through life without knowing the joys of homebrewing. Today, tell a friend about homebrewing. Get someone in your neighborhood, office, golf club or bowling league to try homebrewing. Think of all of the nonself-starters out there who need someone like you to show them what can happen when you pitch yeast.

Think about how you found homebrewing. What made you want to brew that first batch? Did homebrewing find you or did you find it? If you were introduced to homebrewing by a friend, was it the taste of the homebrew that made you want to brew, or was it because you needed a hobby, because you liked the process, because you too wished for the magic that brewing brings?

We strive to make sure each issue of *Zymurgy* includes something that feeds your individualistic self. Every batch of your homebrew is your unique creation. I believe a spiritual part of you somehow shows up in your homebrew. Instead of "You are what you eat," for us it's "You are what you homebrew."

Karen Barela has been homebrewing since 1987. An AHA employee since 1990, she is fortunate to work with a company that lets her homebrew on the job.



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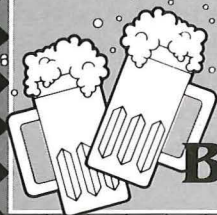
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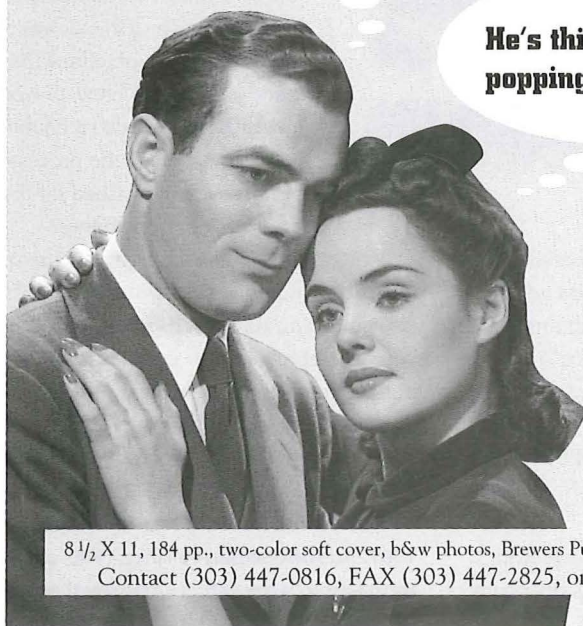
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# DEAR

## Z Y M U R G Y

### Our Readers

## Revving Up the Club

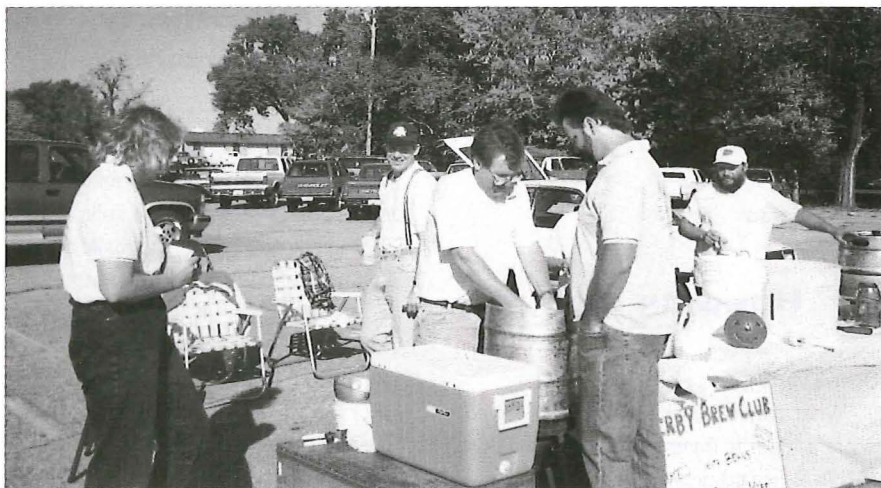
Dear *Zymurgy*,

I have an exciting story for you. I would like to tell you how pleased I am with the change in our club since we took some advice from Roger Clark and Chris Kaufman of the Derby Brew Club in Derby, Kan. Following their example we have put together a club brewing system and are brewing at each meeting. Although everyone doesn't have an active interest in mashing on their own, some of our novice brewers seem to enjoy taking part at meetings.

The main reason I started our group here in Salina, Kan., was to help others learn what they wanted to know to brew their own best beer. Derby is quite active in entering, hosting and winning competitions — another quality we hope to emulate at some point here in Salina.

These Derby guys are fantastic! I attended one of their meetings late last year. They brewed using a mentorship system, announced the previous month's contest results, planned for upcoming competitions, gave a hop-back construction demonstration and served last month's club brew. There were plenty of bocks and doppels to sample (their style-of-the-month). I was excited.

By brewing at the meeting they helped take the mystery out of all-grain brewing (most of their membership brew all grain). They developed a program where two brewers team up each month to plan the brew and execute it at the meeting. I wanted to try this with our group. Since then, Roger helped us with his technical prowess and moral support.



**The Derby Brew Club's brewing equipment does double duty at the chili cook off. Public events are great ways to gain new club members and publicize the hobby of homebrewing.**

I'm proud to announce we have begun brewing. It has been a lot of work, but has changed the mood of the meetings: more dynamic and lots more excitement about

brewing. The group also has become more cohesive.

Thanks again for a great magazine and a super organization. I started brewing two

## Corrections

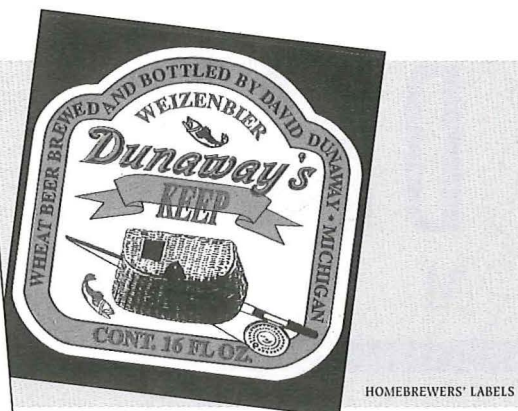
In the Champion Reserve India Ale recipe on page 84 of *Zymurgy* Special Issue 1996 (Vol. 19, No. 4) the total hopping schedule should be as follows:

- 16 AAUs Cascade hops (45 min.)
- 6 AAUs Cascade hops (30 min.)
- 2 1/4 AAUs Perle hops (64 g) (finish)
- 1 oz Cascade hop pellets (28 g) (dry, secondary)

In "Lactic Bacteria," the sidebar on page 38 of *Zymurgy* Winter Issue 1996 (Vol. 19, No. 5), Gram (after Danish physician Hans Christian Joachim Gram) should have been capitalized.

In *Zymurgy* Winter 1996 (Vol. 19, No. 5) the caption on page 19 for the "Yeast Genes Sequenced" brief should say, "The chemical breakdown of yeast DNA into nucleotide bases is shown on these electrophoresis gels." Also, brewing yeast do contain 16 chromosomes as stated, but the total number of estimated genes is about 6,000 for all the chromosomes together.





years ago and couldn't have picked a better time to begin. The AHA has had much to do with that.

Thanks,  
Jim Huskey  
Salina, Kansas

## Hopping Mad

Dear *Zymurgy*,

What's up with Jack G. Frost, Ph.D., who wrote a letter in *Zymurgy* Fall 1996 (Vol. 19, No. 3) regarding the credibility of recipes published in *Zymurgy*?

Mr. Frost seemed to have a problem with hop levels of 55.7 IBUs in an American-style ale. This seems perfectly fine to me and, in fact, a little light. I brew similar ales starting at about 56 IBUs on up to 67 IBUs — and this is before I dry-hop in the keg! The ale doesn't turn out like a "solution of alum" either, an assertion Mr. Frost made about the 55.7-IBUs ale.

Hopefully the brewer who created the recipe Mr. Frost basically said was a lie will defend his brew. There are a lot of homebrewers out here who like a well-hopped ale and if Mr. Frost doesn't like ale that highly hopped, he doesn't have to brew it.

The beauty of homebrewing is that we all get what we like. I know that's why I'm into it.

Anyway, keep printing those great recipes. I appreciate and use them, and I think they are very credible.

Sincerely,  
Kevin "Hopped to the Hilt" Schramer  
KeoMarv@gnn.com  
Glen Ellyn, Illinois

## A Brotherly Compromise

Dear *Zymurgy*,

Last Christmas I made my first batch of homebrew. My brother and I split the cost of the ingredients. I wanted to make a brown ale with a recipe from Charlie Papazian's *The New Complete Joy of Home Brewing* (Avon, 1991). My brother wanted to make a style with a higher alcohol content.

For both of us to be happy we had to compromise so we modified the recipe and called our newly invented beer, "Da Bomb Brown Ale, a Bitter X-mas Special." The beer was excellent, although it needs to sit for at least one year to peak. It's a very well-balanced beer, stout in color and body, with a mild sweet taste.

If you brew with extract I highly recommend giving this very handsome beer a chance. Here's the recipe, please pass it on.

### Ingredients for 3 1/2 gallons (13 L)

- 7 lb Alexander's dark plain malt extract syrup (3.2 kg)
- 3 lb Alexander's amber ale extract (1.4 kg)
- 1/2 lb crystal malt (0.23 kg)
- 1/4 lb black patent malt (0.11 kg)
- 2 oz Fuggles hops (57 g) (boiling)
- 2 oz Cascade hops (57 g) (half used in boiling, half for aroma)
- 1 package liquid yeast
- 2/3 cup corn sugar (15.8 mL)

Enjoy,  
Sutton Brothers  
San Francisco, California

## Overcoming Limitations

Dear *Zymurgy*,

I am a U.S. Marine on active duty on a remote island in the Indian Ocean where all conveniences are worth their weight in diamonds. I recently was stateside on leave and was able to acquire your magazine.

Prior to enlisting, I was an active homebrewer, brewing three or four times a month, enjoying a homebrew on almost a daily basis. Boy, do I miss those homebrews! I currently have two five-gallon glass carboys with airlocks, etc., a 3 1/2-gallon kettle and all the goodies for making the liquid gold. My problem is this: two Marines and all their gear, including civilian toys, condensed into a space about the size of an average living room. Cooking in rooms is not authorized, so that's out. Aside from renting a place in town, which is tough on my pay, plus my schedule, are there any options that may allow me to rekindle those flames to cook my wonderful beer? Please print my address so I might hear from others who have "improvised, adapted and overcome!"

Sincerely,  
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## Stainless Is Painless

Dear *Zymurgy*,

With regard to the article on immersion chillers in *Zymurgy* Fall 1996 (Vol. 19, No. 3), as a point of interest for those who like nothing but stainless steel and glass to touch our beer, I fabricated my own wort chiller from a 50-foot by three-eighths-inch-diameter stainless-steel coil purchased from a restaurant supply house for about \$43. A couple of creative bends and a few compression fittings later and I was in the cool-down business. I get very similar tem-



perature drops and times as those in your study, even though stainless-steel is not quite as efficient a heat exchanger as copper. The truth is the difference between a 15-minute cool down and a 20-minute cool down does not impact my life like a four or five-hour cool down in a snowbank used to!

In addition, I use a flat-lipped stainless-steel lid (also from a second-hand restaurant supply house) on my seven-gallon stainless-steel boiling kettle, which I notched with two three-eighths-inch edge holes for my chiller intake and outlet lines. With the lid in place I can raise and lower the chiller and agitate the wort in a sanitary environment.

The final bonus is no green oxidation to worry about, as with copper. Stainless is painless!

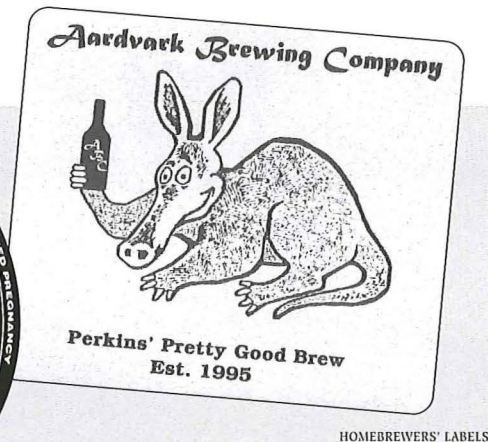
Brad Hunter  
AHA Member  
Appleton, Maine

## Unsatiated by Stout

Dear *Zymurgy*,

We would like to express a counter opinion to William Sherwood's review of the latest Classic Beer Style Series book *Stout*, by Dr. Michael Lewis, that appeared in *Zymurgy* Fall 1996 (Vol. 19, No. 4). Our position is that of the homebrewer, not the professional brewer, in that Dr. John Wolff has been homebrewing for 20 years, both in England and here in the United States, while John Kessel has been homebrewing for five years and is a BJCP Certified judge. From our perspective, *Stout* is a weak effort that is of little practical value to the homebrewer (or homebrew judge) because it fails to do the most basic of tasks set out before it: define the style.

This book runs completely counter to the other nine Classic Beer Style Series books, all of which were able to define their major world beer style, distinguish its various subcategories and explain how to brew it at home and in a small brewery. Unfortunately, Dr. Lewis is unable to do so, proclaiming on page 66 that "a stout is simply a black beer called a stout by the brewer who made it." [Author's emphasis]. It seems that Dr. Lewis could distinguish the differences



between a Guinness dry stout, a Mackeson sweet stout and a Courage Russian imperial stout, but he found that such subcategories of stouts "are simply not on the logical continuum in sensory or analytical terms. The definition [of subcategories] continues to elude us."

Others, though, have found that elusive definition of stout. For example, in 1996, both the American Homebrewers Association and the organizers of the Great American Beer Festival® defined five subcategories of stout. Our experience in drinking commercial examples indicates that there are at least three major divisions of stout: dry, sweet and strong. How Dr. Lewis was allowed to avoid defining stout and its major subcategories in a book intended to define stout and how to brew it is beyond us. We are surprised that he also fails to explain the process used by Guinness, which, in his words (p. 61), "impart(s) the color and unique flavors characteristic of Guinness." He is referring to what he calls "Guinness Flavor Essence," but gives no further description of what that may be. One would think that a scientist and teacher of Dr. Lewis' credentials (see Mr. Sherwood's review for a list of accolades) would want to specifically target the beer style of interest before telling anyone how best to brew it. Perhaps one shouldn't blame the author too much. Examination of the acknowledgments reveals that he actually wrote very little of the book.

The chapter on homebrewing stouts (written by Ashton Lewis) is weak on techniques and ingredients that the homebrewer might use to achieve authentic results. Mr. Lewis spends only six paragraphs on water, mashing, boiling and fermenting stouts. He

chooses instead to focus on such topics as milling and prediction of original gravities. Nowhere does Mr. Lewis state what kind of pale malt to use (two-row or six-row? domestic or British?), or what kind of yeast is best in a stout. Somehow he seems to have missed the liquid yeast revolution, although he does suggest using 14 grams of dry yeast, as an aside for the homebrewer, one supposes. The author seems comfortable with this, though, most likely because he has assumed that a commercial brewery will have a house pale malt and a house yeast, so selection wouldn't be an issue.

Many homebrewers will purchase this book to have their most basic questions regarding stouts answered, questions such as what is a stout? *Stout*, by Dr. Lewis, will not be able to answer these basic questions, although these are the same questions that are answered by all the other Classic Beer Style Series books.

John Kessel and Dr. John Wolff  
Arlington, Texas

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Dear Readers,

We like to publish the labels you design for your homebrew in "Dear *Zymurgy*." Next time you create a great label, send one to Homebrew Labels, PO Box 1679, Boulder, CO 80306-1679. If you include your name and address (and we choose to print your label), we'll send you a nifty gift.

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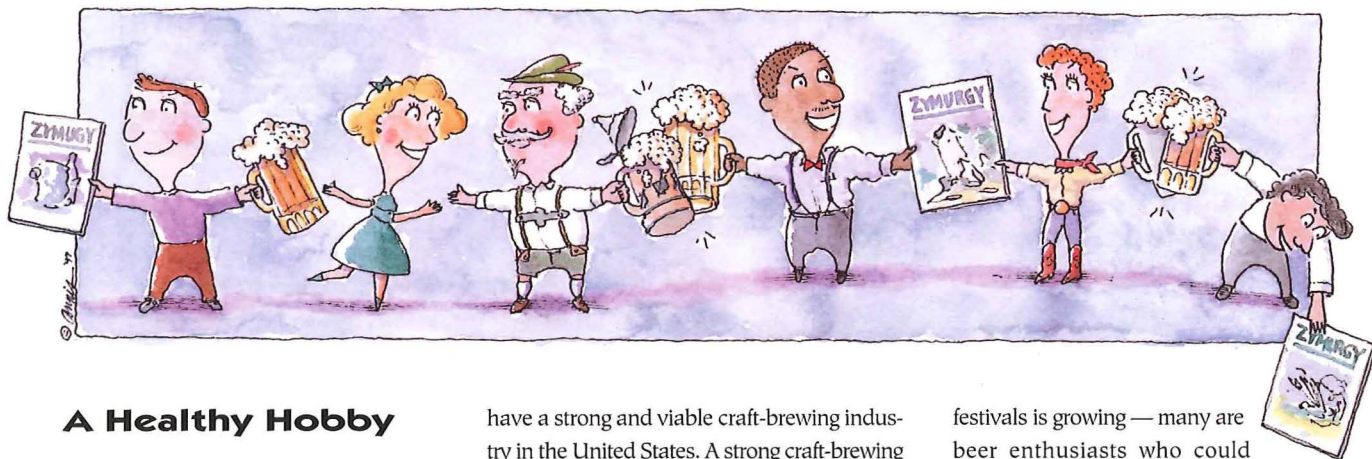
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# A S S O C I A T I O N NEWS

← Karen Barela



## A Healthy Hobby

We've just finished our annual planning season and we are making some changes. We spend a few months every fall planning for the following year and also sketching the next three to five years. For the next couple of years we will focus on membership growth because AHA membership has leveled off for the first time since before 1983 when we had fewer than 2,700 members. While our renewal programs with current members remain strong (thank you for renewing!), we are not gaining new members with the same speed as we have in the past.

Some people say homebrewing is a fad. We've also heard from some homebrew suppliers that their sales are flat. A few owners have said there is no need to homebrew anymore because people can buy good beer at their local microbrewery, brewpub or even liquor store. They've also suggested that the craft-brewing industry has grown so big it has negated the need for people to homebrew.

We don't think people are going to stop homebrewing. Having choices of good beer only increases the desire to discover and brew more beer. Homebrewing and the support of homebrewers is one of the big reasons we

have a strong and viable craft-brewing industry in the United States. A strong craft-brewing movement is good for homebrewing. Think of all the people who have been introduced to the idea of fresh handcrafted beer by drinking one in a brewpub. Think of all the people who used to believe beer was one style and have since discovered the infinite range of styles.

Many homebrewers now are professional brewers. The homebrew industry has received outstanding support from craft brewers and craft breweries. People have been brewing for 5,000 years and Americans have been legally (at the federal level) homebrewing since 1978. We need to homebrew and we'll continue to homebrew.

Is the decrease in new members part of a natural cycle? Probably. There have been many changes in the past 19 years, particularly in the past seven years, in craft brewing and homebrewing. I believe the future holds many more homebrewers, many more craft brewers and a bright future. Join us in telling a friend about homebrewing.

We know it works when you tell a friend, because the number of homebrew clubs has been growing rapidly. (We have more than 700 clubs registered with the AHA.) We know the number of craft-brewing festivals is growing and the crowds that attend these

festivals is growing — many are beer enthusiasts who could become homebrewers. It's our goal to continue to grow and promote the hobby. With growth we get better technology, more innovative equipment, more homebrew recipes, new ideas for conference speakers, more speakers for your meetings, more people attending meetings and more people buying supplies from supply shops. A growing industry is a strong industry. Help a friend get involved in homebrewing and help us grow the hobby.

## New Programs and Membership Benefits

We've already introduced you to a few new membership benefits and we're interested in hearing what you think of them. The Brew Bucks coupon booklet was included in *Zymurgy* Winter 1996 (Vol. 19, No. 5) — a gift to you from the advertisers. They want to thank you for supporting them and we want to provide you, our members, with a benefit you can use. The only way to get the Brew Bucks coupon





booklet is through your AHA membership. Let us know what you thought of our first Brew Bucks effort and look for the next one in **Zymurgy** Fall 1997 (Vol. 20, No. 3).

Beer Town is another benefit we've introduced and designed just for you. It's our redesigned World Wide Web home page (<http://www.beertown.org>) that has been up and running since last September. It's the place to go for immediate information about many of the AHA and AOB programs, a calendar of beer-related events, list of breweries and connections to many other beer, brewery, homebrew club and supply shop sites. It's also the home of virtual events. Beer Town featured a live broadcast from the 1996 Great American Beer Festival.

## 1997 Competition News and Notes

The deadline for entering the AHA 1997 National Homebrew Competition is just a few weeks away. First-round entries are due April 28 through May 9. We want to issue a warm welcome to our new site this year in Atlanta, Ga., and welcome back the eight other sites. For our members and readers in Canada, we encourage you to enter the competition and support your Canadian site hosted by the Canadian Amateur Brewers Association. We introduced the Ontario site last year to help reduce the shipping hassles related to sending your competition entries to the United States, to provide you with a more convenient opportunity to judge and to allow you to send checks in Canadian dollars. To continue offering this site your participation is needed to justify the commitments involved. In 1996, the other seven sites received 300 to 600 entries each while the Canadian site received just 65 entries. We know there are more Canadians brewing great competition-quality homebrew! Please support your site.

We'd like to thank all of the hard-working volunteers who help make the competition possible and all of the sites whose support and sponsorship allow us to produce the world's largest homebrew competition.

**Mississauga, Ont., Canada:** Dennis Kinvig, Richard Oluszak, Craig Pinhey; **Fresno, Calif.:** Lowell Hart, Bill McCrory, Harry Houck; **Thornton, Colo.:** Phil Fleming,

Gary Gutowski; **Atlanta, Ga.:** David Feldman, Lee Gross, Rick Lubrant, Chris Terenzi; **Chicago, Ill.:** Roger Deschner, Tom Fitzpatrick, Brad Reeg; **Shawnee, Kan.:** George Huhtanen, Alberta Rager, John Weerts; **Salem, Mass. (cider only):** Paul Correnty; **Portland, Ore.:** Ed Lingel, Scott Sanders, Pat Savage; **Lancaster, Pa.:** Kathy and Randy Martin.

## Celebrating 20 Years of Zymurgy



This is our 19th year of publishing **Zymurgy**, which means 1998 is the 20th anniversary of the AHA and its magazine. We'd like to hear your ideas on what you want to do to celebrate. On our 15th anniversary we threw a party — the Homebrew Rave at Wynkoop Brewing Co. in Denver, Colo. — and invited Colorado AHA members. But for our 20th, well, that's quite a milestone and we need a celebration to do it justice. We'd like to incorporate an anniversary celebration into the AHA 1998 Homebrewers Conference and Festival in July, possibly on the West Coast. Send your ideas now for themes, logos, speaker topics and anything else you can think of that would make the celebration beerrific! If we use your idea, we'll send you a gift. Write to 20th Anniversary, PO Box 1679, Boulder, CO 80306-1679.

## Rendezvous at the Great Lakes



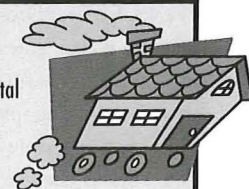
We haven't seen many of you in awhile and most of you we've never met. We want to meet you and hear your beer stories. We want to share a beer with you and talk about homebrewing. The AHA and much of the AOB staff will be at the Great Lakes Homebrew Rendezvous, July 17 through 19, at the Sheraton City Centre in Cleveland, Ohio. The keynote speaker will be Michael Jackson. Mark Dorber from the White Horse Pub in England will talk about real ale and cellermanship and Charlie Papazian will offer his unique vision of life and homebrewing. There's a nearly endless supply of free beer and homebrew (how could you possibly need another reason to attend!) and you will make new friends for life. You'll have a great time at the Great Lakes Rendezvous. For more information see the conference brochure in the Summer Issue (Vol. 20, No. 2) or contact the AHA.

Karen Barela is president of the AHA.

## Movin' and Brewin'

We never want you to miss an issue of **Zymurgy**, so be sure to let us know if you move. **Zymurgy** is mailed bulk rate third class under our 501 (c)(3) nonprofit tax status, saving us money on postage costs. However, with third-class mail the U.S. Postal Service does not automatically forward your mail. Unless you let us know you've moved or changed your address, your issue of **Zymurgy** disappears into the mail black hole. I know, moving is stressful enough and probably the first thing you're going to want to do is set up your homebrewery (see "World of Worts"), but don't forget to notify us of your new address. It will take only a few minutes, then you'll have time to concentrate on your first batch in your new home. Phone, fax or e-mail to the American Homebrewers Association, PO Box 1510, Boulder, CO 80306-1510; (303) 546-6514; FAX (303) 447-1815 or [service@aob.org](mailto:service@aob.org).

As always, we are here to serve you. Please feel free to contact us anytime with your comments and ideas or just to share your latest recipe.





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# CALENDAR

## FEBRUARY

**15** Florida State Fair Homebrewing Competition, **AHA SCP**, Tampa, Fla. Entries due Feb. 12. Contact Mark Stober at (813) 977-0141.

**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, Kan. 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 Meridith at (217) 428-7022 or KELLUMS1@AOL.COM.

**22** Brew-Ski, **AHA SCP**, Flagstaff, Ariz. Entries due Feb. 15. Contact Jeff Handley at (520) 774-2499 or outpost@homebrewers.com.

**27** The Great Stamford Beer Festival, **AHA SCP**, Stamford, Conn. Entries due Feb. 25. Contact Cynthia Pucci at (203) 323-0124.

**27-28** "All About Beer" Seminar, Center for Brewing Studies, Sonoma, Calif. Call (707) 935-1919.

**28-March 2** Cheers One World Beer Festival, Miami, Fla. Call (800) 396-3939 or clusey@mail.aip.com

## MARCH

**1** Knickerbocker Battle of the Brews, **AHA SCP**, Troy, N.Y. Entries due Feb. 21. Contact Keith Looney at (518) 458-9354 or looneyke@lms.com

**1** Eighth Annual Reggae and Dred-hop Competition, **AHA SCP**, Boulder, Colo. Entries due Feb. 21. Contact Bob Kauffman at (303) 828-1237 or jac@usa.net.

**2** First Homebrew Competition and Exhibition sponsored by Bottles and Kegs, Front St. Brewery and Surf 107 FM, **AHA SCP**, Wilmington, N.C. Entries due March 1. Contact Elizabeth Rogers at (910) 772-6300.

**8** Sixth Annual Moon Madness Competition, **AHA SCP**, Reading, Pa. Entries due March 1. Contact Mark Johnston at (610) 944-0500.

**8** Fourth Annual America's Finest City Homebrew Competition, **AHA SCP**, San Diego, Calif. Entries due Feb. 4 – March 4. Contact Dion Hollenbeck at (619) 459-8724 or hollen@vigra.com, <http://www.vigra.com/~hollen/AFCHBC>.

**8** Skye's Scottish Ale Homebrew Competition, **AHA SCP**, Mount Vernon, Wash. Entries due March 5. Contact Charlie Sullivan at (360) 336-2884.

**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 Brian Rezac at (303) 447-0816 ext. 121 or brian@aob.org.

**15** Hudson Valley Homebrewer's Inc. Seventh Annual Homebrew Competition, **AHA SCP**, Poughkeepsie, N.Y. Entries due March 8. Contact Al Alexsa at (914) 255-8685 or alalexsa@mhv.net.

**21-22** Seventh Annual March Mashfest, **AHA SCP**, Fort Collins, Colo. Entries due March 9. Contact Scott Mills at (970) 669-6088 or smills@webaccess.net; <http://www.fortnet.org/~smills/masht.html>.

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

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

**22** Seventh Annual Three Rivers Alliance Serious Homebrewers Competition, **AHA SCP**, Pittsburgh, Pa. Entries due March 15. Contact Donald Van Ollefen at (412) 492-7198 or <http://ralph.pair.com/trash.html>

**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, Woodland, American Brewers Guild, Davis, 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>.

**23** Second Annual South Shore Brew-off, BJCP Recognized, Boston, Mass. Entries due March 15. Contact Glenn Markel at (508) 226-3249; [grmarkel@aol.com](mailto:grmarkel@aol.com) or Randy Reed at (617) 341-8170; [esbitter@aol.com](mailto:esbitter@aol.com).

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

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

## APRIL

**5** Maltose Falcon's Mayfaire, **AHA SCP**, Woodland Hills, Calif. Entries due March 19. Contact Brian Vessa at (310) 397-8352 or [bav@earthlink.net](mailto:bav@earthlink.net).

**5-6** Great Arizona Beer Festival Homebrew Competition, **AHA SCP**, Phoenix, Ariz. Entries due April 1. Contact Rick Drake at (602) 843-3420 or [hardrockengr@MSN.com](mailto:hardrockengr@MSN.com).

**12** Greater Wichita Homebrew Competition, **AHA SCP**, Wichita, Kan. Entries due March 29. Contact Chris Kaufman at (316) 789-0415 or [ckaufman@GTE.net](mailto:ckaufman@GTE.net).

**12** 11th Annual Bidal Society of Kenosha Regional Homebrew Competition, **AHA SCP**, Kenosha, Wis. Entries due April 5. Contact Carol DeBell at (414) 654-2211.

**18-19** Crescent City Homebrewers Homebrew Competition, **AHA SCP**, New Orleans, La. Entries due April 4. Contact Ernie Spreen at (504) 888-5410 or <http://home.earthlink.net/~csule>.

**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](mailto:FTMK71B@Prodigy.com).

**19** Upstate New York Homebrewers Association 19th Annual Competition and Eighth Empire State Open, **AHA SCP**, Rochester, N.Y. Entries due April 9. Contact Todd Colin at (315) 986-8837 and [DoctorBrew@aol.com](mailto:DoctorBrew@aol.com).

**26** First Brewers East End Revival (BEER) Brew-Off, **AHA SCP**, Ronkonkoma, N.Y. Entries due April 18. Contact Les Stoddard at (516) 467-3951.

**26** Iowa City Homebrew Classic, **AHA SCP**, Iowa City, Iowa. Entries due April 19. Contact Bruce Klotz at (319) 626-6159 or [bklotz@avalon.net](mailto:bklotz@avalon.net) or <http://www.cs.uiowa.edu/~phenning/thirsty/index.html>.

**28-May 9** AHA National Homebrew Competition first-round entries due. Contact Caroline Duncker at (303) 447-0816 ext. 116 or [caroline@aob.org](mailto:caroline@aob.org).

## MAY

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

**3** Seventh Annual Southern California Homebrewers Festival, Temecula, Calif. Call (310) 908-9434 or e-mail [TerryAle@aol.com](mailto:TerryAle@aol.com)

**3** 1997 Green Mountain Homebrew Competition, **AHA SCP**, Essex Junction, Vt. Entries due April 18. Contact Dave Gannon at (802) 879-1304 or [dgannon@zoo.uvm.edu](mailto:dgannon@zoo.uvm.edu).

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

**16-18** Second Annual Midwest International Beer Exposition, Chicago, Ill. Call (847) 678-0071 or <http://www.pic.net/expo>.



**17-18** AHA National Homebrew Competition first-round judging, Portland, Ore.; Fresno, Calif.; Thornton, Colo.; Kansas City, Kan.; Chicago, Ill.; Atlanta, Ga.; Lancaster, Pa.; Salem, Mass.; Mississauga, Ontario, Canada. Contact Caroline Duncker at (303) 447-0816 ext. 116 or caroline@aob.org.

**24** Bock is Best Club-Only Competition, **AHA SCP** Entries due May 19. Contact Brian Rezac at (303) 447-0816 ext. 121 or brian@aob.org.

**24** Knights of the Brown Bottle and Texas Scottish Festival First Celtic Brews Homebrew Competition, **AHA SCP**, Arlington, Texas. Entries due May 24. Contact Steve Weststrom at (817) 360-4847 or Steph10344@aol.com.

## JUNE

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

**7-8** California State Fair Homebrewing Competition, Sacramento, Calif. Entries due May 17. Contact J.J. Jackson at (916) 483-4512 or 71147.2553@compuserve.com. California residents only.

**13** Vancouver Brewmaster Festival, Vancouver, B.C. Contact Roger Newton at (604) 290-4268 or rnewton@direct.ca.

**14** B.U.Z.Z. Boneyard Brew-Off, **AHA SCP**, Champaign, Ill. Entries due June 7. Contact Joel Plutchak at (217) 333-8132 or joel@bolt.atmos.uiuc.edu.

**15** San Joaquin County Fair, **AHA SCP**, Stockton, Calif. Entries due May 31. Contact Rick Stanton at (209) 957-4549 or ruudrick@juno.com. California residents only.

**20** Ohio State Fair Homebrew Competition, **AHA SCP**, Columbus, Ohio. Entries due June 20. Contact Virgil Strickler at (614) 644-4047.

**21** Heartland Brew Fest, **AHA SCP**, Des Moines, Iowa. Entries due June 13. Contact John Busbee at (515) 289-1933 ext. 232.

**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** AHA 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, The Great Lakes Homebrew Rendezvous, Cleveland, Ohio. Contact the AHA at (303) 447-0816.

## AUGUST

**9** Beer & Sweat, **AHA SCP**, Cincinnati, Ohio. Entries due Aug. 9. Contact Robert Pinkerton at (513) 251-9754 or 102126.3315@compuserve.com.

**9** Extract Extravaganza Club-Only Competition, **AHA SCP**, Pittsburgh, Pa. Entries due Aug. 4. Contact Brian Rezac at (303) 447-0816 ext. 121 or brian@aob.org.

**9** Josephine County Fair Amateur Beers Competition, **AHA SCP**, Grants Pass, Ore. Entries due Aug. 7. Contact Hubert Smith at (541) 597-2142 or brewboy@magick.net.

## SEPTEMBER

**19-21** The Greater Milwaukee Brew Festival, Milwaukee, Wis. Contact Glenn Helgeland at (414) 242-4810 or (888) 404-1454.

**20** 1997 Thunder Mountain Brew-Off, **AHA SCP**, Sierra Vista, Ariz. Entries due Sept. 12. Contact Paul Lachmanek at (520) 378-4290.

## OCTOBER

**2-4** 16th Great American Beer Festival®, Denver, Colo. Call the AOB at (303) 447-0816.

**AHA SCP** = American Homebrewers Association Sanctioned Competition Program.

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

To list events, send information to **Zymurgy** Calendar of Events. To be listed in **Zymurgy** Summer Issue (Vol. 20, No. 2), information must be received by March 7, 1997. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months before the event. Contact Caroline Duncker at caroline@aob.org; (303) 447-0816 ext. 116; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679.



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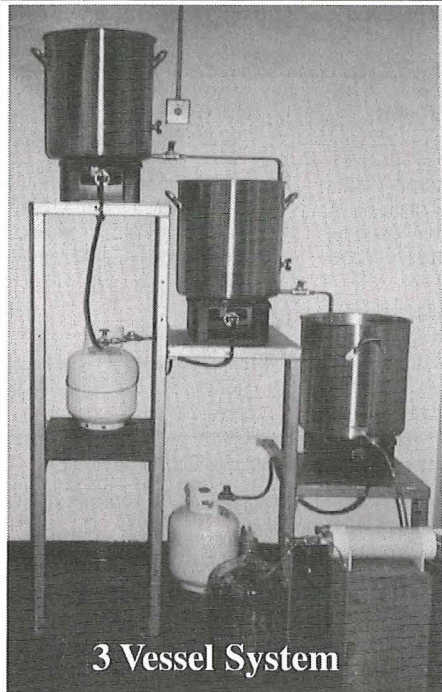
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# BREW NEWS

Jim Parker

## HEAD LINES



### A loaf of bread, a dozen eggs, a pound of malt ...

Western New Yorkers can now add hops and brewers yeast to their late-night shopping lists thanks to an agreement between the Tops Friendly Markets and Niagara Tradition Brewing Supplies. The grocery chain has agreed to sell homebrew kits and supplies in its supermarkets in an effort to encourage homebrewing.

Paul Dyster, manager of Niagara Tradition, has introduced a line of kits and individual supplies, such as grains, hops and yeast. The idea is not to supplant local homebrew shops but to augment them, he said.

"We're trying to bring some of the services that surround a homebrew shop to people in communities that aren't large enough to support a homebrew shop," he said. "So basically what we've done is design a product line that, while it's relatively small in terms of items it gives people, contains everything they need to brew many of the major world beer styles."

Also included in each kit is a 24-hour telephone number brewers can call for help.

Niagara Tradition is sponsoring a series of homebrew competitions in conjunction with local breweries. The first, "The Quest for the Grail," is being held in cooperation with Middle Ages Brewing Co. of Syracuse. The goal for homebrewers will be to produce an ale close to Middle Ages Holy Grail Ale.

A tip sheet will give competitors two-thirds of the recipe — the rest is up to them.

The winner will receive homebrew supplies from Niagara Tradition and get to brew for a day at Middle Ages. Brewers will earn points in each of the competitions and a "brewer of the year" will win a free trip to some brewing mecca. (*Great Lakes Brewing News*, Oct. Nov. 1996)

### Grapes Make Way for Hop Vines

Two California vintners are giving a new meaning to the old winemakers' saying, "It takes a lot of beer to make good wine." The Benziger Winery in Sonoma and Korbel Champagne Cellars in Santa Rosa have announced plans to add microbreweries to their wineries.

Benziger went so far as to rip out 1 1/2 acres of prime merlot grapes to plant hops in anticipation of its Sonoma Mountain Brewing Co. The brewery is scheduled to open in early 1997.

Korbel is in the planning stages of its brewery, according to president Gary Heck, who said the brewery is seen as one way to boost sagging sales in the sparkling wine market.

The plans call for a brewery and beer garden that would be open to the public on the winery site along the Russian River. The beer would be distributed locally.

Randy Meyer, a winemaker at Korbel and a homebrewer, has been developing the concept and would take over as the brewer. Heck says hops for the brewery would be grown on a one-third-acre pasture on his Olivet Ranch. (*Modern Brewery Age*, Aug. 5, 1996)



## 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 or check the Association of Brewers World Wide Web page at <http://beertown.org> for more frequent updates.

\* Denotes microbrewery/brew-on-premises combination

### OPENINGS

(As of Oct. 15, 1996)

### UNITED STATES

#### Microbreweries

**Alaska:** Borealis Brewery, Anchorage; Denali Brewing Co., Anchorage

**Arizona:** Barzona Brewing Co., Ahwatukee; Lawler Brewing Co., Scottsdale; Nimbus Brewing Co., Tucson; Sonora Brewing Co., Phoenix

**California:** American Brewers Guild, Woodland; Kappatsu Brewing Co., Point Richmond; Mount St. Helena Brewing Co., Middletown; Stoopid Moose Brewing Co., Temecula; Yuba River Brewing Co., Nevada City

**Colorado:** Backcountry Brewery, Frisco; Far Superior Brewing Co., Boulder; Lone Wolfe Brewing Co./The Old Nugget, Carbondale; Squaw Mountain Brewing, Evergreen; Steamworks Brewing Co., Durango

**Connecticut:** Essex Brewing Co., Niantic

**Florida:** Brautech Brewing Co., Medley

**Hawaii:** Menchune Brewing Co., Hilo

**Illinois:** Bent River Brewing Co., Moline

**Iowa:** Stone City Brewing Co., Solon

**Maine:** Berwick Bay Brewing Co., South Berwick

**Massachusetts:** Concord Junction Brewing Co., Concord; Your World Brewery, Westminster

**Michigan:** Arcadia Brewing Co., Battle Creek; Atwater Block Brewing Co., Detroit; Kraftbrau Brewery, Kalamazoo; Mountain Town Station, Mount Pleasant; Roffey Brewing Co., Holland

**Minnesota:** Mantorville Brewing Co., Kasson

**Nebraska:** Spilker Ales, Cortland

**Nevada:** Copper Summit Brewing Co., Reno

**New Hampshire:** New Hampshire Custom Brewers, Hollis

**New Jersey:** High Point Wheat Beer Co., Butler

**New Mexico:** Wolf Canyon Brewing Co., Santa Fe

**New York:** North Country Brewery, Saratoga Springs; Brooklyn Brewery, New York

**North Carolina:** Flagstone Brewing Co., Winston-Salem; Old North State Brewing Co., Fuquay-Varina

**Ohio:** Bavarian Brewing Co., Maumee; Black Swamp Microbrewery, Toledo; Rust Belt Brewing Co., Cleveland

**Pennsylvania:** Appalachian Brewing Co., Harrisburg; Franconia Brewing Co., Mountaintop; Gettysburg Brewing Co., Gettysburg (micro with restaurant); Pretzel City Brewing Co., Reading; Red Bell Brewing Co., Philadelphia

**South Dakota:** Sanfords Grub and Pub, Spearfish

**Texas:** Burton Creek Pub and Brewery, College Station; Live Oak Brewing Co., Austin; Real Ale Brewery, Austin

**Utah:** Moab Brewery, Moab

**Virginia:** Williamsburg Brewing Co., Williamsburg

**Washington:** Head Canal Brewing Co., Poulsbo

#### Brewpubs

**Arizona:** River Road Brewery, Tucson

**California:** Albany Brewing Co., Albany; Antelope Valley Brewing Co., Lancaster; Barbary Coast Brewing Co., San Francisco; Carmel Brewing Co., Carmel; Sudwerk Brewery and Grill, Sacramento; Tustin Brewing Co., Tustin; Valley Brewing Co., Lancaster BrewCity (No 2), Walnut Creek

**Colorado:** Hops Grill and Bar in Denver, Denver; Il Vicino Wood Oven Pizza, Colorado Springs; Irish Brewpub, Pueblo; Pints Pub and Brewery, Denver

**Connecticut:** Bank St. Brewery, Stamford; Post Road Brewing Co., Waterford; Brewery at Ninth Square, New Haven

**Delaware:** Iron Hill Brewery, Newark

**Florida:** Big River Grille and Brewing Co. at Disney Boardwalk, Lake Buena Vista; Cleveland Brewery at the Cleveland Hotel, Miami; Hammerhead Brewing Co., Key West; Independence Brewing Co., Fort Lauderdale; Panama City Brewery and Café, Panama City Beach; Spanish Springs Brewing Co., Lady Lake

**Georgia:** Texas Cattle Co. Border Grille and Brewery (No 2), Warner Robins

**Idaho:** Casey's Pub, Post Falls

**Illinois:** Copper Dragon Brewing Co., Carbondale; Founders Hill Brewing Co., Downers Grove; Glen Ellyn Brewing Co., Glen Ellyn

**Indiana:** Main Street Brewery, Evansville; Upland Brewing Co., Bloomington

**Kentucky:** Brew Works at the Party Source, Covington; Jeremiahs, Paducah

**Louisiana:** Caddoo Brewing Co., Shreveport; Lafourche Brewing Co., Thibodaux

**Maine:** Belfast Bay Brewing Co., Belfast; Oak Pond Brewing Co., Skowhegan

**Maryland:** Brewers Alley, Frederick; Brewers Art, Baltimore; Carroll Creek Pub and Brewery, Frederick; Globe Brewing Co., Baltimore

**Massachusetts:** Brew Moon Restaurant (No 3), Cambridge; John Harvards, Framingham; Narrow Gauge/Granary Brewpub, Farmington

**Michigan:** Black River Brewing Co., Holland; Jasper Ridge Brewery, Ishpeming

**Nevada:** Monte Carlo Pub and Brewery, Las Vegas

**New Jersey:** High Point Wheat Beer Co., Butler

**New Mexico:** Blue Corn Café East, Santa Fe; High Desert Brewing Co., Las Cruces; Second Street Brewing Co., Santa Fe

**New York:** Big House Brewing Co., Albany; Brick House Brewing Co., Patchogue; Flying Bison Brewing Co., Buffalo; Long Shore Brewery and Pub, Farmingdale

**North Carolina:** Cross Creek Brewing Co., Fayetteville

**Ohio:** Buckley Brewery and Grill, Cincinnati; Diamondback Brewing Co., Cleveland; Rock Bottom Brewery (No. 9), Cincinnati

**Oregon:** Hawks Brewing Co., Roseburg; Pacific City Brewing Co., Pacific City; Rose City Brewing Co., Portland

**Pennsylvania:** Bullfrog Brewery, Williamsport; Foundry AleWorks Co., Pittsburgh; Gettysbrew, Gettysburg

**South Carolina:** Southend Brewery and Smokehouse (No 2), Charleston; Zebo Restaurant and Brewery, Charleston

**Texas:** Blue Star Brewing Co., San Antonio; Breckenridge Brewery, Dallas; Corpus Christi Grille and Brewing Co., Corpus Christi; Moon Under Water Restaurant and Brewery, Dallas

**Utah:** Pinnacle Brewing Co./Grogg's, Helper

**Vermont:** Jigger Hill/Tonbridge Quality Ales, Tonbridge; Three Needs Brewery and Taproom, Burlington

**Virginia:** Sweetwater Tavern and Brewery, Centerville

**Washington:** Cedar River Brewing Co., Renton; North Fork Brewers, Deming; Rock Bottom Brewery (No 10), Seattle

**West Virginia:** Nail City Brewing Co., Wheeling

**Wisconsin:** Prairie Brewing Co., Sun Prairie; Twin Ports Brewing Co./Choo Choo Pub, Superior

#### Contract Breweries

**California:** Bohemian Breweries Inc., Torrance; Yosemite Brewing Co., Mariposa

**New Jersey:** Shore Brewing Co., Harvey Cedars

**New York:** Buffalo Brewing Co., Lackawanna

**Washington, D.C.:** Washington Brewing Co.

### CANADA

#### Microbreweries

**Alberta:** Flanagans Brewing Co., Edmonton; Wild Rose Brewing Co., Calgary

**Ontario:** Durham Brewing Co., Ontario; Hogtown Brewery, Mississauga; Lakes of Muskoka Cottage Brewery, Bracebridge

**Quebec:** La Brasserie Aux Quatre Temps, St. Hyacinthe

#### Brewpubs

**Alberta:** Grizzly Paw Pub and Brewing Co., Canmore; West Trail Brewing Co./Taps Pub and Brewery, Edmonton

**New Brunswick:** Tapps Brewpub, St. Johns

**Quebec:** La Microbrasserie St. Arnaud, St. Jovite

### CLOSINGS

#### UNITED STATES

**Colorado:** Marks Brewing Co., Berthoud

**Michigan:** Frankenmuth Brewery, Frankenmuth (closed/under repair)



## Texas Brewing Landmark Closes



One of Texas' oldest brewing traditions died Sept. 27, 1996, when the Lone Star Brewery in San Antonio ceased production.

The Stroh Brewery Inc., which acquired the Lone Star plant when it bought G. Heileman Brewing Co. in July, decided the 63-year-old plant was too old and too small to remain viable. It is the smallest of Stroh's 10 breweries.

Lone Star opened in 1933, shortly after the repeal of Prohibition and employed 200 workers at the time of its shutdown. About 170 of those workers lost their jobs in the closure. The company estimated it would cost \$40 million to upgrade the plant to make it competitive.

The Buckhorn Museum and hospitality facilities, occupying about one-third of the 32-acre site, remains open. The museum draws about 150,000 visitors per year. (*The Brewers Bulletin*, Sept. 17, 1996)

## THE BIG WORLD OF BEER

### German Breweries Face Grim Future

Germany, home to 1,250 of the European Union's 1,650 breweries, could see the ranks of its brewing companies halved within 15 years, according to a report from the Roland Berger business consultancy.

The German beer market has been slipping the past couple of years with production of 117.5 million hectoliters (100.1 million bar-

rels), down 1 percent in 1995, according to the trade association Deutsche Brauer-Bund.

The trade group predicts sales will fall to 110 million hectoliters (93.7 million barrels) within 15 years, causing a number of smaller and regional breweries to fail.

Among the cited causes for the possible shakeout are a drop in consumption by the nation's youth, the proliferation of inexpensive canned beers and increased competition from imported brands. (*Brewer's Guardian*, June 1996.)

## Prohibition Strikes in India



India's brewing industry, a 3.3-million-barrel-per-year business, took a major hit last July when the federal state of Haryana began enforcing a complete prohibition on the sale of alcoholic beverages.

Breweries can continue producing until their annual license expires, but all production must have ceased by Dec. 31, 1996. At that time the breweries will be scrapped to prevent any further brewing.

Only military canteens and soldiers are exempt from the prohibition.

Haryana is the second federal state in India to announce a prohibition in the past two years. Andhra Pradesh began enforcing a prohibition in 1995, joining two other federal states that had previously prohibited alcohol.

Still, the Indian brewing industry is expected to double production to nearly seven million barrels by the year 2000. (*Brewing and Beverage Industry International*, No. 3, 1996)

## Importer Brings Belgian Brewing Home

Vanberg and DeWulf, which has been bringing Belgian beers to the United States since 1982, will help produce Belgian-style beers in the United States by early 1997.

Vanberg and DeWulf entered into a partnership with principals from Moortgat Brewery (makers of Duvel) and DeSmedt (makers of Affligem) to build a farmstead brewery in upstate New York for the production of traditional Belgian-style ales.

The unnamed brewery will have a Belgian brewer schooled at Louvain's Institute of Brewing Studies and be located on the site of a former hop farm in Cooperstown, N.Y. Beer production is expected to begin in late spring. (*Vanberg and DeWulf press release*)

## TECHNOTES

### Continuous Production Fermenter in the Works

Belgian scientists are experimenting with an immobilized yeast cell fermenter that would allow for continuous beer production of up to six months without repitching yeast.

The system consists of two stages, an immobilized cell bioreactor, in which wort is pumped through ceramic matrices filled with active yeast cells, and a free cell cylindrical fermenter that is continuously stirred. Total fermentation time for both stages is about 61 hours with an attenuation rate of 35 percent for the first stage and 75 percent for the second.

Wort fed continuously into the system has been found to remain stable for up to six months. (*Brewing and Distilling International*, July 1996)



## Just How Rich Is That Wort?

A trio of Finnish scientists has determined that near-infrared spectroscopy can be a useful tool for quickly determining the fermentability and extract content of industrial wort.

Studies on 84 wort samples from two breweries showed that near-infrared spectroscopy is much quicker and just as accurate

as traditional chemical analysis for determining the extract content of wort. For large breweries this could be an important advance in process control, as wort found to be out of spec for a particular batch could be adjusted in subsequent batches and blended to improve consistency. (*Journal of the American Society of Brewing Chemists*, 54:3 129-190)

Jim Parker, Institute for Brewing Studies administrator, is a former journalist, former pub owner and former pub brewer who has been homebrewing since 1987.



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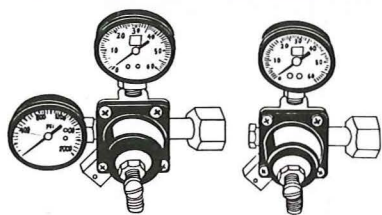
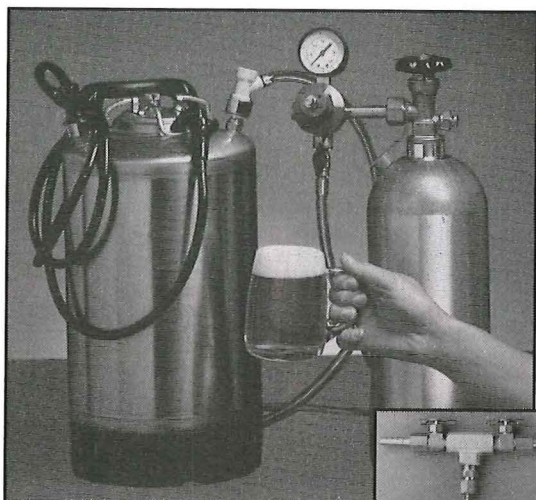
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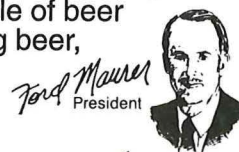
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# JACKSON ON BEER

Michael Jackson

## Can Estonia Rediscover Its Brewing Tradition?

**O**n my last visit to Estonia there was snow on the ground. One of my most vivid memories was of a horse-drawn sled sliding across the fields. On my recent visit, there was bright sun and the fields were ablaze with dandelions and buttercups, but I still managed to see a horse pulling a plow.

Much had changed. Last time, Estonia was under Soviet rule. Now it is independent.

The new middle class have Fords and VWs. I even spotted a Lada laggard talking into his car phone as he spluttered dangerously down a lovely cobbled street.

For reasons I could not quite pinpoint, the man who came to interview me for Estonian television was wearing a cowboy hat, kerchief, shirt bulging with a pack of Marlboros and jeans.

I did not have the heart to tell him that smoking is now a capital offense in the land of the free. Nor that a beer called Rock (as

in music) would not be thought hip in the territories of Samuel Adams and Anchor Liberty. I let that pass, too.

After all, we were enjoying our drink in a well-regarded beer bar, Karja Kelder, in the medieval Old Town of Tallinn, the capital. And our companions were members of the Imperial Beer Club, named possibly after the stout or more probably after a long-gone cafe.

"What's your favorite beer song?" demanded one member.

My mind went blank. "What about a beer joke?" suggested another.

I thought of the story, the very old story, of the man who drowned in a brewery tank but not before getting out three times to relieve himself.

Judging from the hilarity, they had not heard it before.

Karja Kelder, in the vaulted cellars of a former brewery at 1 Vaike Karja, has a limited selection, but it does offer the traditional beer snack of boiled salted broad beans.

Such rituals are very important to Estonians, who can be a captious crowd.

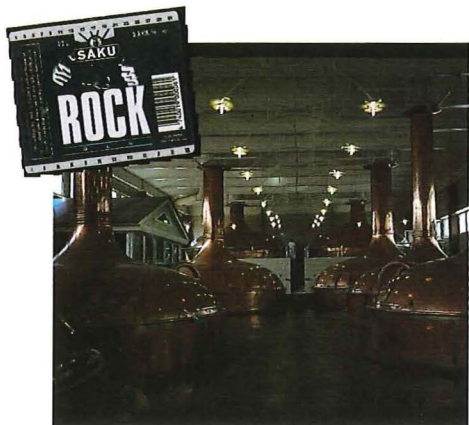
"Where are the bits of bacon?" demanded one, poking around among the beans.

"Where's the garlic rye bread?" asked another. I busied myself with a succulently moist, barley-studded black pudding. Let us hope such pleasures are not sacrificed to dry-roasted peanuts or taco chips.

Under Soviet rule, Estonia could never progress far beyond 1945. As it tries to gallop through five decades in as many years, I pray it manages not to devastate its heritage in the way we did during the 1950s and 60s.

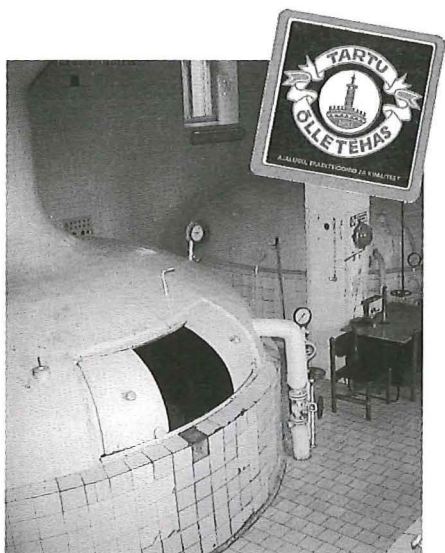


**While in Estonia, I traveled 40 miles northeast of Tallinn to the village of Haljala (above), to see a brewery on a former collective farm. The brewery, called Viru, was being run by its former employees in a joint venture with a small Danish brewery. I tasted a grainy golden lager and a caramel-tinged Munich-style dark, both served at a tap that could have passed for a very basic wild west saloon. One of the customers told me he had spent the Soviet years exiled to Siberia. This made South Dakota seem positively cozy.**



**The gleaming copper brewhouse is a showcase for the growing Saku brewery.**



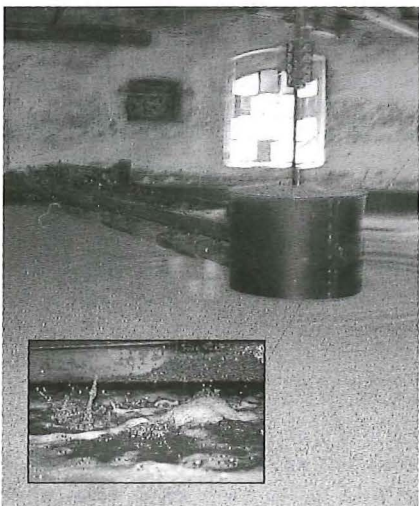


**Unusual concrete-jacketed steel vessels grace the Tartu brewery.**

Just outside Tallinn I revisited the Saku brewery among the pines of what was once a nobleman's estate. Its history as an estate brewery goes back at least to 1820, and in 1876-77 a new "steam brewery" was built.

On my first visit I had seen buildings from the turn of the century among the much more utilitarian structures of the Soviet period.

Not much had changed externally. Inside was a beautiful new brewhouse with vessels in the traditional shapes made from copper. It was produced in Czechoslovakia, and may have been the last copper brewhouse built there. In the new Czech Republic, I believe, such equipment is made of stainless steel.



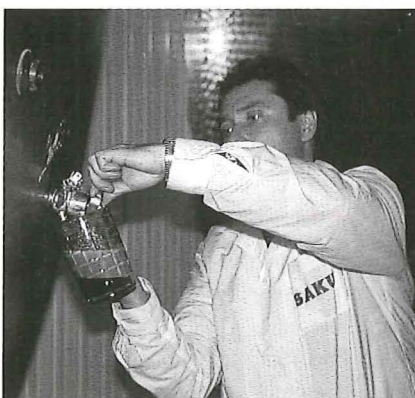
**The germination of barley into malt evolves in their traditional malting tower. Inset: Aeration of the barley steep prior to germination.**

Once built, the brewhouse spent seven or eight years in mothballs before it could be installed, thanks to Mr. Gorbachev's campaign against alcohol.

When Estonia ceased to be a Soviet republic the brewery was privatized, with a substantial share in the hands of Hartwall of Finland and Pripps of Sweden.

The new brewhouse is now in operation, and I tasted some of its products. They are now all malt, cleaner and more aromatic than in the old days, but more "international" in character. The regular Pilsener is fresh-tasting and slightly grainy, with 22 units of bitterness. A new product called Original (26 bitterness units) is smoother and drier. I preferred the crisper, more bitter Hele (pale), with 32 bitterness units, and the malty, lightly toffeeish ambered Tume (dark).

In midsummer there was none of the brewery's malty, coffeish porter, the only one currently made in Estonia and avail-



**A Saku brewmaster samples their special full-flavored Christmas Porter.**

able only at Christmas. It was porter that first took me to Estonia in 1990. I have always been fascinated by the story of British exports of porter to the Baltic in the 1700s and 1800s. They were, after all, the origins of what we would now call Russian imperial stout.

I had especially enjoyed the saga of the Belgian Le Coq company and its British successors, who bought a brewery in 1910-12 to produce the style in the important town of Tartu in the southeastern part of the country.

I have told the story several times and will not labor it again, save to say I was anxious for another look at the Tartu brewery



**Brewing in the Baltics is a growing business for Tartu's brewery manager.**

now that Estonia is once again independent. On my first visit, I had the impression that for all my attempts to explain, the manager could not quite grasp why I had come so far to see his brewery. There were new managers this time, and they had caught up with my interest.

When I first saw photographs of the brewery, I was taken with its round castellated tower. When I finally got there, I discovered it was more than ornament, it was a maltings.

Although the germination vessels were of the drum type, the kilning floors were circular, like the tower, with rakes turning from a central pivot.

On my return, I was pleased to see the maltings still working. I was told that the first drum maltings in the world was built in Scotland in 1876, and that the one in Tartu was the second.

*This column is reprinted from What's Brewing with permission from the author.*

Michael Jackson, internationally the best known writer on beer, was awarded the Gold Tankard for Beer Writer of the Year 1996 by the British Guild of Beer Writers. His *Beer Companion* (Running Press, 1993) was awarded the 1994 Glenfiddich Trophy and the Andre Simon Award. Michael's articles, books, documentary videos and CD-ROM introduce beer styles to countless drinkers and brewers outside their native lands.





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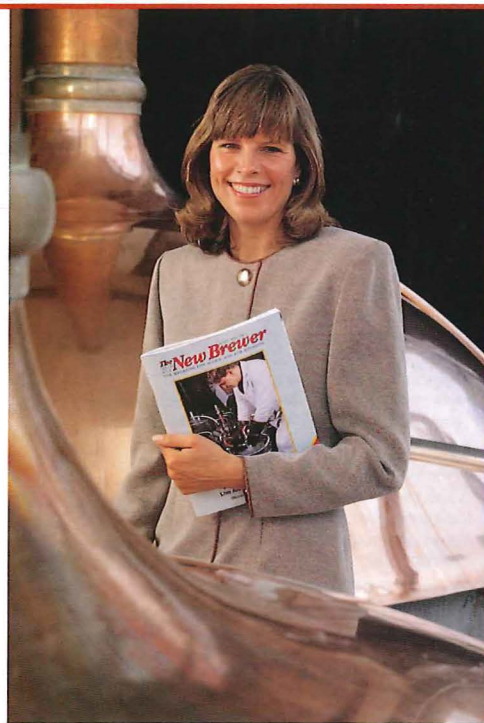
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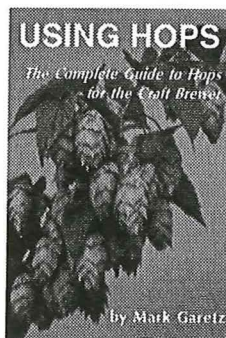
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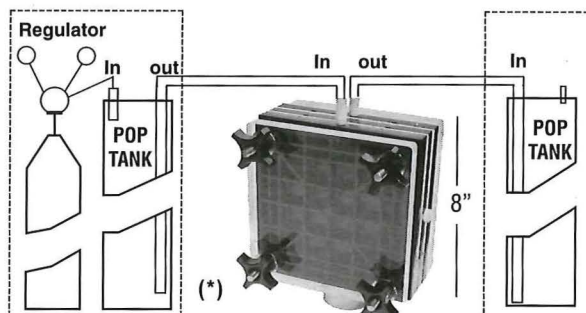
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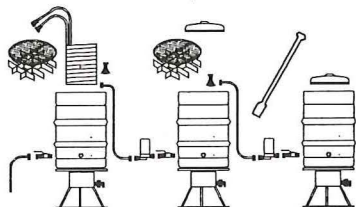
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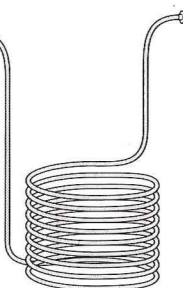


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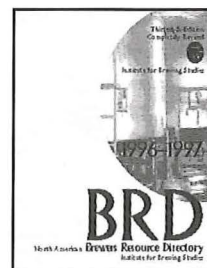
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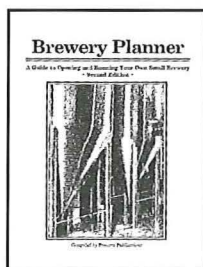
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# HOMEBREW COOKING

Jeff Renner

## Bread for Brewers

What's better than the smell of wort boiling? Maybe fresh bread hot from the oven, especially if you made it yourself. As a homebrewer, you've probably considered baking bread if you don't already bake. You're already attracted to the combination of grains and yeast. Making bread is easier than brewing. Plus it's ready a lot sooner! Byproducts of brewing including spent grains, last runnings and even yeast can be

used for baking bread. Something in their common ingredients seems to make beer and bread complement one another.

Bread has four basic ingredients: flour, water, salt and yeast. Sounds like *Reinheitsgebot*, doesn't it? We can find substitutes for some of these ingredients and add to the list as well. If some basics of proportions and procedures are followed, even "failures" can be better than store-bought loaves. Where creativity succeeds, great things happen.

In my bread classes I teach a basic recipe. Once this is mastered, you can make intelligent guesses about the results of substitutions and additions to create just about any bread style. Exact amounts of ingredients are not specified because ingredients vary. Instead, adjust the final dough consistency with the last additions of flour (or water, if you are using a food processor or mixer).

### Spent Grain Bread

After mashing and sparging, spent grains have given up most of their sugars and much of their protein, but what remains can be incorporated into homemade bread for additional flavor, texture, fiber and nutrition. Last runnings, while too dilute for brewing, still have a bit of malty sweetness and flavor that complement the flavor of grains nicely. Spent grains are 70 to 80 percent liquid (Briggs et al., 1981), about 80 percent with my brew system. This means that for every pound of drained spent grains (about 3 1/2 cups unpacked), you must reduce the liquid in the basic recipe by about 1 1/2 cups and the flour by about three ounces (about two-thirds cup). I like to use last runnings (drained from the grains after lautering is halted) for the rest of the liquid.

Note: Spent grain will spoil very quickly if not refrigerated, frozen in recipe-sized batches or dried on a cookie sheet in a slow oven. Dried spent grain can be substituted by weight for part of the flour.





You don't need to be an all-grain brewer to make spent-grain bread, just use the spent specialty grains you have steeped. Save the dark grains for dark bread, especially rye.

How much spent grain can you use in bread? If you use drained but wet grain, the amount of liquid contained is the limiting factor. Because one basic bread recipe uses three cups of liquid and you need one-quarter cup to rehydrate the yeast, then 1 3/4 pounds or about six cups of drained grain containing 2 3/4 cups of liquid is the maximum. Of course, your spent grain may contain more or less liquid, but you can adjust the consistency when you knead in the last flour. If you use dried spent grain there is no limit, but substituting for more than 25 percent of the flour will result in mighty dense and fibrous bread.

If using a bread machine just follow the manufacturer's recipe and substitute the spent grains for flour and liquid as described above, or use half of the recipe provided here (if it fits) and the manufacturer's directions.

What about baking with brewing yeast? Before the differentiation between baking yeast and ale yeast in the middle of the last century, bakers had two choices for leavening their bread: a self-sustaining culture (sourdough), or brewer's yeast called barm. In the British Isles, sour breads were disliked and the latter was favored. In the last century and a half, the two yeasts have diverged greatly as they were selected for different traits. I have had some luck baking with washed ale yeast, and the bread is nicely flavored but is extremely slow to rise. If you want to try ale yeast for baking I suggest starting with three tablespoons of thick sedimented yeast from an actively fermenting ale and being patient.

## The Bread Basics

Proper proportions of ingredients are necessary for making successful yeast breads. The basic ingredients of flour, water, salt and yeast can be added to or substituted for if you keep in mind how these changes will affect the amounts of other ingredients needed and the final product.

I like to use the sponge method of making dough, which involves first making a stiff

batter (sponge) using about half the flour and the rest of the ingredients except salt and any fat or fatty ingredients. I also suggest using less yeast than is common and rising at room temperature, but expect longer rising times. This gives a far more flavorful and better-keeping bread and a slower-paced schedule that is easier to work around.

## Basic Bread Recipe

Makes three medium loaves or two big ones.

- 3 cups water (1/4 cup at 105 to 115 degrees F for yeast\*, 2 3/4 cups at room temperature)**
- 3/4 tbsp dry yeast (1 packet) dissolved in above warm water with optional pinch of sugar (for nutrients)**
- 1 tbsp salt**
- 2 1/2 lb bread flour (about 6 to 8 cups, but it is best to weigh ingredients)**

\*For instant yeast not requiring rehydration, follow instructions and mix yeast with dry flour and use all three cups of liquid in the recipe.

## Special Ingredients

Substitutions and additions will (1) replace flour; (2) replace liquid or (3) have no effect on the recipe. For example, spent grains will replace both flour and liquid.

**Sweetening:** Up to one-fourth cup of honey, malt extract or sugar (one-half cup for sweet bread). Malt or honey are nice for whole-wheat; one-fourth cup dark malt extract is great for rye and pumpernickel. When baking with dry malt extract, mix it with some flour to prevent lumps before adding it to the other ingredients.

**Liquids:** Substitute milk for water, or add dried milk powder without changing the amount of flour or water.

**Shortening or oil:** Up to one-fourth cup to one-half cup for rich bread; one-fourth cup slows staling and softens crumbs.

**Flour:** Any weight-for-weight substitution; add whole-grain flours first.

**Other:** Eggs, raisins, nuts, seeds, potatoes, etc. Precook or soak grains and reduce liquid in the recipe accordingly.

## Five Steps to Bread

### 1st Step: Sponge

Dissolve the yeast in one-fourth cup of warm water. Add four cups flour (if using whole-grain flours, add these first) and all other ingredients except salt, fat, eggs, raisins or nuts. Stir 100 strokes or use electric beater, cover and let rest one to three hours. It will at least double. If left overnight, this will become tart and then sour, a good procedure for rye breads. If you make twice what you need and save half for next time, you will be on your way to sourdough.

### 2nd Step: Dough and first rise

Sprinkle salt over the sponge, add the rest of the nonflour ingredients and stir briefly. Add two to three cups flour and fold in as much as possible. Sprinkle about one cup of flour on the work surface, turn the dough out and knead to incorporate flour to give a soft but not sticky dough. Continue to add enough flour to keep the dough from sticking, but not so much it makes the dough really stiff (this is more of a problem with whole-grain flour).

Knead with a "push with a roll, fold with a turn" rhythm until the dough is smooth and elastic, about five to eight minutes. Well-kneaded dough should feel about like your earlobe. If it fights back, wash and dry your bowl and very lightly oil it for the dough to rise in; when you return, the dough will be much more cooperative. Place it in the bowl, cover with plastic wrap and let rise at room temperature until doubled. This will take perhaps three hours, depending on the temperature.

### 3rd Step: Punch down and second rise

Rather than punching down the dough, turn it out on a work surface and knead a few moments to expel all the CO<sub>2</sub> bubbles and redistribute the yeast nutrients. Return to the bowl and cover until doubled. This will take perhaps two-thirds the time of the previous rise.

### 4th Step: Shaping the loaves and pan proof

Place dough on the work surface and divide into two pieces for five-by-nine-inch pans or three pieces for 4 1/2-by-eight-inch pans if you are making all white bread, which rises higher. Ideally, the dough should fill the pan about two-thirds if it were pushed flat. Shape the loaves either by firmly kneading them into a fat sausage shape or by



# Glossary

- **BREAD FLOUR** is made from hard wheat because of its high levels of particularly strong gluten. It is the best base flour for bread, especially if you are using other flours such as whole wheat or rye, or heavy additions such as grains. Soft wheat's gluten is typically weak and is used for pastry flour. All-purpose flour has some strong and some weak gluten and is not recommended for bread. If you can't find bread flour at your supermarket, check a local health-food store or co-op.
- **FERMENTATION** is the metabolic process of yeast where sugars are broken down into carbon dioxide and alcohol. Enzymes also are produced that develop or mature gluten so it can better trap CO<sub>2</sub>.

- **GLUTEN** is a grain protein. Wheat gluten is strong and elastic and traps fermentation gas, producing a well-raised loaf. Rye gluten is much weaker and other grains have almost useless gluten for yeast baking and need some wheat flour.
- **ORGANIC GRAINS** are grown with no chemicals. This classification does not affect baking qualities.
- **SPENT GRAINS** are the grains left in the lauter tun (or Zapap or grain bag) after lautering and draining last runnings, which is the liquid remaining in the grains that is too dilute to include in the brew kettle.
- **WHOLE GRAIN** includes the starchy white endosperm, the germ and the outer bran.

flattening the piece and rolling it up. Seal the ends and seams and put seam-side down into lightly greased pans. Cover and let rise until doubled (when a depression from your finger remains in the dough).

## 5th Step: Baking, cooling and eating

Bake in a 350-degree-F preheated oven until golden brown for white bread or rich brown for darker breads, about 35 to 40 minutes. Remove from the pans and let cool on racks before slicing.

## It's Your Bread

Don't be afraid of bread. Mistakes will still be bread and will be better than store-bought bread. Experiment with different ingredients and adapt other recipes to this method (less yeast, two room-temperature rises) for best results. Think about whether an addition or substitution will require adjustment of other ingredients, and you will be able to create your own recipes by modifying the basic one. A food processor or heavy-duty mixer work especially well for whole-grain breads, although the sponge method is a bit awkward with a food processor. A half recipe combining steps one and

two works well for these. Add the cold liquid slowly to the rest of the ingredients until a ball forms, then process about a minute until the gluten is well developed. The process for a mixer is similar but you need to knead longer with the dough hook, according to manufacturer's instructions.

Here are some sample variations of the basic recipe using spent grain:

**Spent grain basic white or tan:** Substitute 3 1/2 cups (1 pound) of drained spent grain from a pale or amber beer for 1 1/2 cups of liquid and 3 ounces of flour in the basic recipe, using bread flour for the balance. For a little additional sweetness and flavor, add one to two tablespoons malt extract. Substitution of one cup whole-wheat flour gives a little more flavor while keeping it light. This bread makes nice dinner rolls, toast or sandwiches (try making one loaf and 12 to 18 dinner rolls). How about avocado and tomato slices with mixed sprouts and shaved red onions with a vinaigrette dressing accompanied by a cool West Coast pale ale?

**Spent grain whole wheat:** Substitute whole-wheat flour for part or all of the bread flour in the above recipe. For more dense, chewy bread, use six cups (1 3/4 pounds)

spent grain and no additional liquid. A common mistake in 100 percent whole-wheat bread is making the dough too dry or stiff. Whole-wheat flour will absorb liquid a little more slowly than white. This hearty bread is a great accompaniment to a cold-weather soup or stew. A British bitter would go nicely.

**Spent grain rye bread:** Substitute rye flour for one-fourth to one-half of the flour in the white bread recipe above. A little dark malt extract adds flavor and color. If you let the sponge sit covered overnight, it will become tart, which is nice in rye bread. Suggested optional ingredients are one to two tablespoons caraway seeds, one tablespoon dried dill (or three tablespoons fresh), and one-half cup chopped onion (or more if you're bold and don't have a date). I especially like dill-onion rye with cold cuts and cheese sandwiches. Corned beef, anyone? I'll have a tall, crisp Pilsener with mine.

**Spent grain pumpernickel:** Here's where we pull out all the stops. Use the maximum spent grains (1 3/4 pounds or six cups), preferably from a dark beer, one-fourth cup dark malt extract and 25 percent each rye and whole-wheat flour, with the balance of bread flour. Whole rye flour is best if you can get it. If you like sourdough, try fermenting the sponge 24 hours, then proceed. This is a dense, chewy, Old World-style bread. Sliced thin and spread simply with sweet butter it's a perfect companion to black bean soup or topped with cheeses, meats, mustard and onions for a real smorgasbord. Enjoy with an alt, rauchbier or maybe a bock if you have time for a nap after lunch.

## References

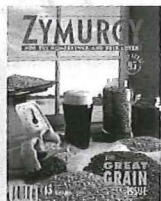
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- Reed, Gerald and Tilak W. Nagodawithana. *Yeast Technology* second edition, Van Nostrand Reinhold, 1991.
- Jeff Renner, a homebrewer since 1973, is a charter member of the Ann Arbor Brewers' Guild and a BJCP Certified judge. Since 1979 he has owned and operated The Best French Bread in Town, a licensed wholesale bakery in his home.**
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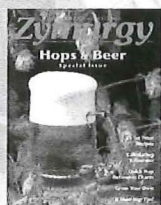
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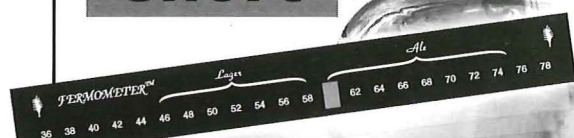
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# TIPS & GADGETS

Ken Schwartz

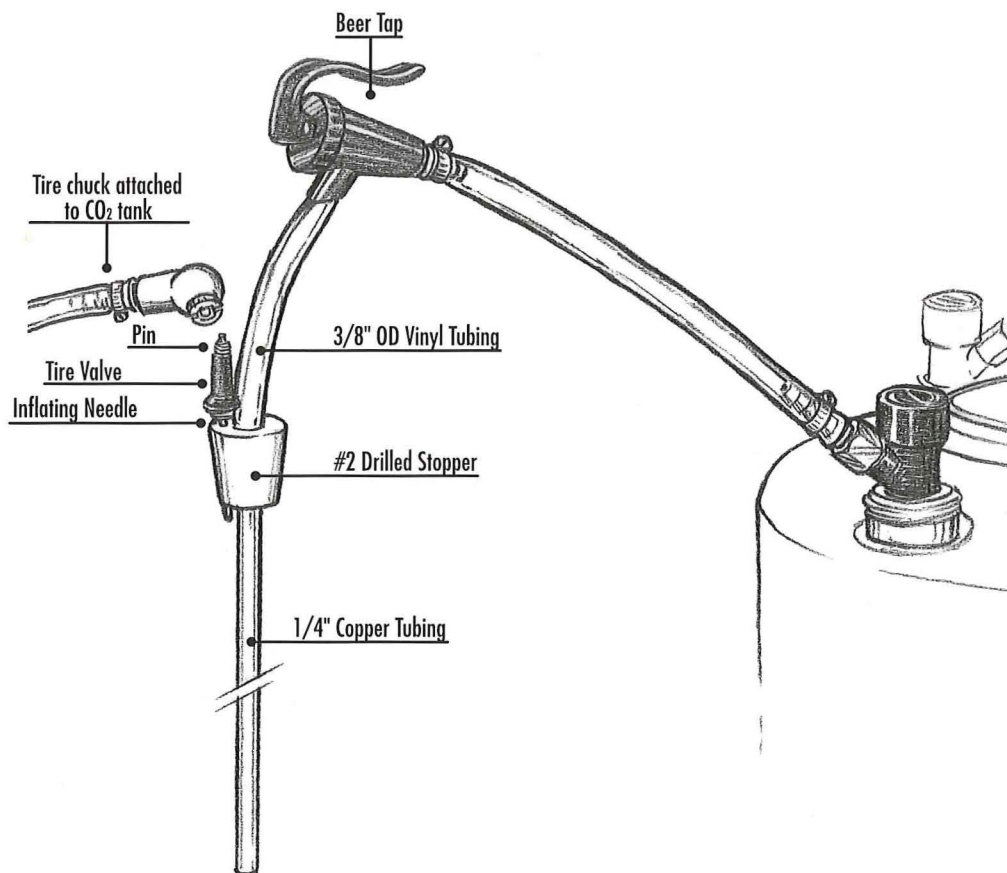
## Frugal Counterpressure Bottle Filling

Counterpressure bottle fillers are the easy way for keggers to fill a few bottles when the need arises. This design enables you to build your own without spending all of your malt money on parts.

A simple but well-known technique for filling bottles from a keg uses some vinyl tubing on the business end of a keg thumb tap. The bottle is filled simply by inserting the tubing to the bottom of the bottle, opening the tap then capping when filled. This concept has been presented many times in various brewing forums, including *Zymurgy* Fall 1995 (Vol. 18, No. 3), where a review of commercial counterpressure bottlers gave this design a good score for low oxidation, but graded it down because of CO<sub>2</sub> loss and no real "counterpressure" during filling.

A variation on the theme adds a No. 2 drilled stopper installed on the tap's mouth and requires you to cork the bottle tightly and fill with carbonated beer until the pressure equalizes with the keg, then "burp" the stopper to slowly relieve the pressure and fill the rest of the bottle. A good one-third of the bottle must be filled before the pressure equalizes, often resulting in heavy foaming and CO<sub>2</sub> loss. Smoothly regulating the amount of pressure release can be tricky, too.

The improvement presented here adds a couple of parts but allows true counterpressure operation and very simple pressure release for filling. By boring a small hole in the stopper alongside the existing large hole and inserting an inflating needle for filling



### Using the Filler

- (1) Fit stopper loosely in bottle.
- (2) Apply air chuck to tire valve to purge bottle, or pressurize and burp a few times (the bottle, not you).
- (3) Fit stopper tightly into bottle and pressurize while holding the stopper in place.
- (4) Open beer tap. A small amount of beer may flow, then flow will stop.
- (5) Press tire valve pin slightly to slowly release pressure. Beer will flow as pressure is released.
- (6) When bottle is full, close beer tap. Press valve pin to completely release remaining pressure. Remove bottler slowly and cap bottle immediately.



basketballs attached to a tire valve, a gas release mechanism can be added. Use an inexpensive tire chuck attached to your CO<sub>2</sub> tank regulator to purge and prepressurize the bottle as easily as if you were inflating a tire. Holding the bottle with your fingers around the neck and your thumb securing the stopper in place, pressurize the bottle and open the beer tap, then slowly relieve the pressure by pressing the pin in the tire valve. It's easy to get a foam-free fill, even with room-temperature bottles. Unlike its commercial cousins, it only requires two hands to operate.

The inflating needle screws tightly into the underside of the tire valve, forming a tight seal. The hole in the stopper can be bored using a drill press, red-hot sewing needle or a carefully guided finishing nail. Be careful not to poke out the side of the stopper — start on the small end and come out next to the existing hole on the large end.

Insert the inflating needle so the hole at the end of the needle is just peeking through the bottom of the stopper. I used a few inches of three-eighths-inch outside diameter vinyl tubing to connect the stopper to the tap, to allow enough room for the valve and needle. A length of one-quarter-inch copper or stainless-steel tubing inserted into the vinyl tubing forms the fill tube.

Clamp the air chuck to a T on an existing keg gas line or an unused manifold outlet. Also install a plastic pinch clamp on the air chuck line, because without it the air chuck will leak CO<sub>2</sub> under pressure when not in use. You can fill different sized bottles by changing the length of the fill tube. The filler comes apart completely for cleaning.

**Ken Schwartz** ([kennyeddy@aol.com](mailto:kennyeddy@aol.com) and <http://members.aol.com/kennyeddy>) has been homebrewing in El Paso, Texas, since 1992. His brewing schedule is interrupted with a day job as an electrical engineer at Clarostat Sensors & Controls Inc., where he designs electronic hardware and software for in-house equipment and develops new products. He satisfies his interest in the technical side of homebrewing as "Gadget Guru" and "Tek Dude" for El Paso's Borderline Brewers homebrew club.

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# Vinothèque U.S.A.

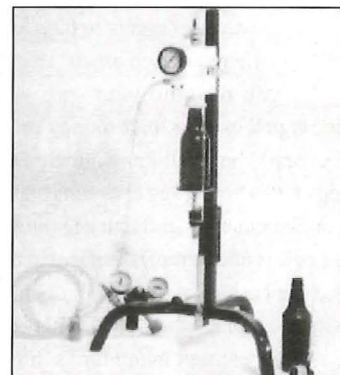
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## A Salute to the Bottle Opener



**A**ccording to legend, the Greek philosopher Archimedes once boasted, "Give me a lever long enough and I'll move the world!" Two to three inches, however, is more than a sufficient length for popping the cap off any beer bottle on the planet.

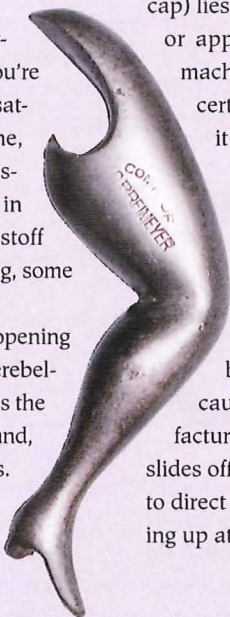
Opening a bottle is, to rephrase Thomas Edison's famous maxim, 99 percent anticipation and 1 percent perspiration. Most of the effort is expended in realizing that you're thirsty and then deciding which homebrew would best satisfy your craving. If you're a regular reader of this magazine, chances are you've got several openers in easy reaching distance of the fridge, and one or two on a key chain, just in case you find yourself on a desert isle with only nontwistoff bottles to drink. (Heck, in this age of rampant body piercing, some may have openers surgically implanted.)

After you've done it a few thousand times, the act of opening a bottle becomes almost a reflex programmed into your cerebellum. You don't stop to think that this simple action involves the coordinated motion of 27 distinct bones in your wrist and hand, as well as an even greater number of muscles and tendons.

Nor do you consider the scientific theory behind the opener. Like a seesaw, wheelbarrow, broom or baseball

bat, a bottle opener belongs to a class of simple machines called levers. A lever, at its most basic, is a bar free to move around a fixed point called a fulcrum. More specifically, an opener is a class 2 lever because the load or object to be lifted (the rim of the crown cap) lies between the fulcrum (the top of the bottle) and the effort or applied force (in this case, your hand). Like all simple machines, the opener serves to redirect and multiply force. It's certainly easier to lift off a cap with an opener than to wrest it off with your bare hand, or — God forbid — gnaw it off with your teeth.

If you're shaking with anticipation at the thought of that chocolate cheesecake stout, there may be several misfires before you hear the reassuring pssssccchhht! and see the wisp of white vapor rising up from the bottleneck. "Usually, if you try to open a bottle in one grand movement, you mess something up," cautions C. Mead Bates, president of CYMBA Inc. (a manufacturer of openers based in Darien, Conn.). "Often, the opener slides off because you were pulling it back toward you. You've got to direct the pressure toward the glass part of the bottle, while lifting up at the same time."



**The fish figural opener features a square gas key and dates between 1910 and 1920.**

**A very rare hand figural opener from the Hand Brewery in Pawtucket, R.I., dates to the same time period.**

**The cast-iron leg figural from Missouri advertising "C. Breimeyer" dates to the 1930s.**

**By Greg Kitsock**





**The Alcatraz Brewing Co. key opener is laser cut in the shape of an actual jail key.**

Tom Pastorius, owner of the Penn Brewery in Pittsburgh, Pa., advises carefully lifting up one edge to vent some of the CO<sub>2</sub> before popping the cap. That way, you minimize the possibility of a foamover into your lap.

Most fastidious of all are bottle cap collectors. To obtain a pristine specimen, they'll place a nickel or dime on top of the cap to avoid direct contact between the opener and metal surface, then slowly work their way around the edge of the crown.

It's a simple action, repeated millions of times each day, but representing more than 100 years of technological progress.

You can't discuss openers without talking about bottle caps, and you can't divorce bottle caps from the bottle itself. Before the 1890s, almost all beer was draft. There were several reasons. First of all, glass was manufactured and shaped by artisans and was too expensive for widespread use. Other problems were the short shelf life of bottled beer, owing to microbial infection, and the inability to control secondary fermentation in the bottle. In his 1816 treatise,



**The Antartica key ring opener features a rare gas wrench.**

*The American Practical Brewer and Tanner*, Joseph Coppinger writes that bottling is frequently rendered "unprofitable by great breaking of bottles arising from the impure state of beer." His solution: filter the beer through charcoal and soak the corks in pure spirit the night before. Pasteurization

would eventually provide a better alternative.

Another hurdle was purely legal in nature. Before 1890, the Internal Revenue Service taxed beer by the keg only. To stay within the law, brewers had to keg beer first so a tax stamp could be affixed and canceled,

then transfer it to bottles — an unnecessarily tedious process. On July 3, 1890, Congress (largely at the behest of Captain Frederick Pabst of the Pabst Brewing Co.) modified the law so that brewers could gauge the beer as it flowed from the aging cellar to the bottling room.

With the bottle's place assured, the search was on for a stopper that would keep CO<sub>2</sub> in and dirt out, and that wouldn't fly off like a rocket during pasteurization. Hundreds of different designs were patented during the late 19th century. Some were attached with bailing wire, much like modern swingtops. Others had to be removed by means of a corkscrew.

Enter William Painter.

The son of a Quaker farmer from Maryland, Painter displayed an amazing knack for mechanics as an apprentice at his uncle's leather company, and later as foreman of a machine shop. His inventions ranged from a device for detecting counterfeit coins in a fare

box to a pump for removing water from ships. But it was the crown cap, which he patented in 1892, that would make him a rich man.

The crown cap was so named because the metal disk, with its indentations around the rim, vaguely resembled the customary headgear of royalty. Unlike

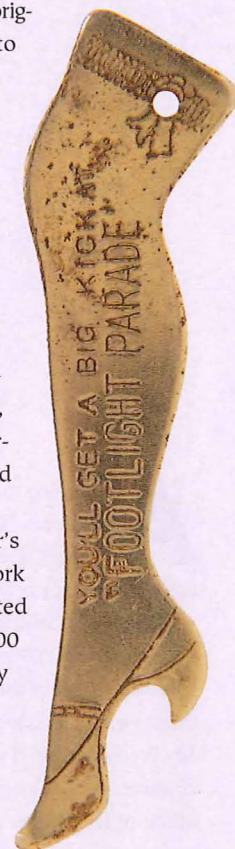
previous bottle closures, which were essentially plugs, Painter's invention consisted of a metal cover that could be crimped tightly over the lip of a bottle to form an airtight seal. To prevent the beer from coming in contact with the metal, the inside was lined with cork. Painter's innovation caught on

slowly, as many brewers resisted retooling. Ironically, Pabst, whose lobbying efforts had made bottling commercially feasible on a grand scale, was one of the last major hold-outs. Nevertheless, after Painter's patent expired in 1909, all brewers switched to the crown cap or went out of business, never to reopen, when Prohibition became law.

The crown required a special device to remove it. According to Thomas D. Gibson's article "Capping the Bottle" in the Spring 1996 issue of *Invention & Technology*, Painter's original solution was to punch two holes in the metal, through which a loop or metal handle could be inserted for grasping and removing the cap. This proved unsatisfactory for two reasons. First, it added a step to the manufacturing process. Second, it raised the risk of perforating the cork and causing leakage.

In 1894, Painter's company, Crown, Cork and Seal, was granted patent number 514,200 for what was probably the first modern bottle opener. It consisted of "a suitable handle, provided with a cap-engaging lip adapted to underlie a portion of an applied bottle sealing cap, and also having a centering gage affording gaging contact with the side of the cap adjacent to the engaging lip ..."

The early 20th century was a golden age for bottle openers, both whimsical and utilitarian. Collectors of antique openers have catalogued 57 different figural varieties. One popular design was shaped like a woman's leg, with the instep of her heel forming the cap lifter. Another is shaped like a snapping turtle, with the turtle's jaw being used to



**This opener shaped like a woman's leg is a rare find for collectors.**



grasp and remove the cap. Openers were also manufactured in the shapes of a fish, a beer truck, a baseball player, a dachshund and a seal. Over the years, some companies would distribute brewery-specific figurals: The Iroquoise Beverage Co. of Buffalo, N.Y., issued an Indian-shaped opener; the Wooden Shoe Brewing Co. of Westminster, Ohio, put out a clog-shaped model; and the Kaier Brewing Co. of Mahanoy City, Pa. (deep in the heart of anthracite country) was responsible for a wall-mounted opener in the shape of a coal miner.

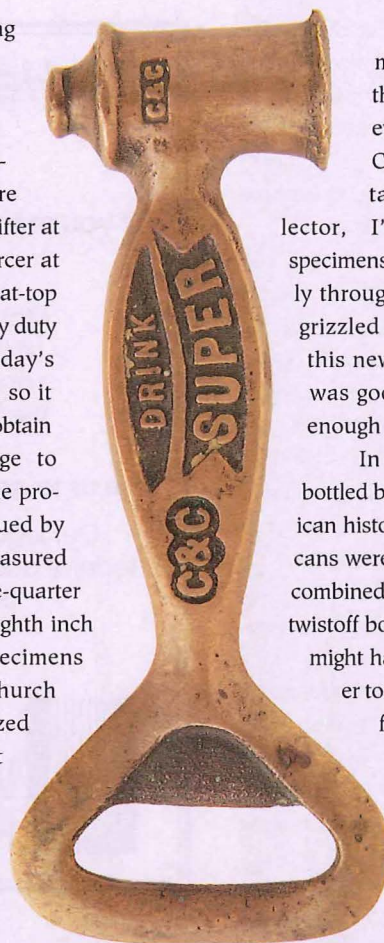
In 1914, one Chicago company patented a figural opener in the shape of a nude woman crouching, patterned after the famous painting "September Morn" by French artist Paul Chavas. This portrait of a peasant girl skinny-dipping in a chilly mountain lake had caused a furor the previous year when the notorious American prude Anthony Comstock spied it in a storefront and tried to have it censored. Perhaps to avoid a similar controversy, the manufacturer issued a G-rated version of the opener with the woman clothed in a bathing suit.

In 1909, Edwin Walker patented the wire opener, which consisted of a metal coil drawn into an oval or semicircular shape, with a diameter just big enough to accommodate the cap. Wire openers offered less surface area for brewery advertising, but were cheap and easy to make.

Opener technology underwent another quantum leap in 1935, after the Got-

tfried Krueger Brewing Co. of Newark, N.J., became the first brewery to market beer in cans. To service all containers, openers were redesigned with a cap lifter at one end and a can piercer at the other. The earliest flat-top cans were made of heavy duty steel as opposed to today's lightweight aluminum, so it took a larger opener to obtain the necessary leverage to punch in the metal. The prototype can piercer, issued by American Can Co., measured 5 1/2 inches long, three-quarter inches wide and one-eighth inch thick. These early specimens were nicknamed "church keys" after the oversized keys that the sextant would carry to open and lock the local house of worship. Bates offers an alternate explanation for the term "church key." Early openers, he argues, had tiny square holes in the handle that could be used to adjust the valves that turned gas lamps on and off inside the churches. Gradually, openers were shortened to about three inches, probably as a result of the rising costs of raw materials and World War II metal shortages.

Dual purpose can and bottle openers were manufactured by the millions. Liquor stores would pass them out free with the purchase of a case of cans. Many pre-1940 cans came printed with instructions and diagrams for using the new openers. Curiously, the illustrations often showed only a single hole punched in the top. It took a little time before the manufacturers and public realized that by punching two holes on opposite sides, you could make the beer pour faster.



**C&C's Super opener is still an enigma to collectors. The heavy hammer head feature indicates the tool was also used to crack ice.**

The grasp and punch motion became so reflexive that it was difficult to give up, even after Pittsburgh Brewing Co. introduced the first pull tabs in 1962. As a can collector, I've seen several early specimens with a hole punched directly through the tab, as though some grizzled oldtimer said, to hell with this newfangled technology, what was good enough for dad is good enough for me!

In 1969, canned beer outsold bottled beer for the first time in American history, and virtually all of those cans were self-opening. The pull tab, combined with the introduction of the twistoff bottle cap later in the decade, might have relegated the beer opener to antique shop drawers, if not for the craft-brewing revolution and the concurrent interest in homebrewing. "The market in soft drinks is mostly gone," says Bates.

Granted, most of today's openers are of the cheap, plastic key-chain variety, that are strewn about like confetti at beer festivals and trade shows. However, figural openers are making a comeback. The Jack Daniels Brewery has produced a classic "spinner" opener with one end shaped like a human hand with outstretched index finger. A metal dim-

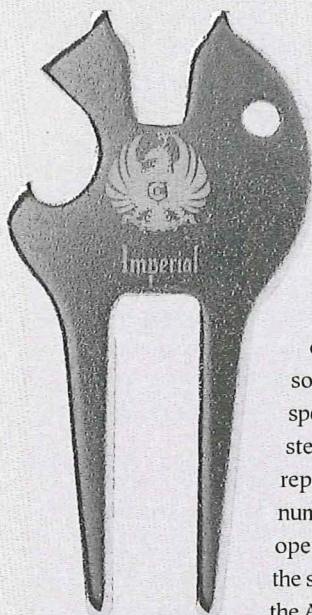


**The spinner design, originally made by Brown and Bigelow in St. Paul, has been adapted by numerous breweries. The spinner serves the dual purpose of opening bottles and pointing out the benefactor of the next round.**



**This baseball player opener was made by Vaughn of Chicago. The design was patented in 1914, featuring a gas key in the hollow of the player's elbow.**





**This fully functional opener from Imperial Beer doubles as a divot repair tool.**

er, and a combination opener/divot fixer for golf fanatics.

The only requirements for an opener, notes Bates, are that you have two points in the right juxtaposition, about one-half to three-quarters inch apart, and that you have enough leverage (at least the length of a half dollar). "After that, you can build anything around it that will not get in the way of those points."

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Greg Kitsock is the associate editor of *Barley Corn* and a frequent contributor to other publications including *The New Brewer* and *American Brewer*. He has been an avid breweriana collector for the last 20 years.

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ple in the handle allows the opener to be spun; whomever the finger points to has to buy the next round.

Bates, a collector of antique openers, has created some unique figural specimens in stamped steel and brass. His repertoire includes numerous bottle-shaped openers, an opener in the shape of a jail key for the Alcatraz Brewing Co.

in Indianapolis, a fake cellular phone with an opener embedded in the speaker,

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PHOTO BY ROBERT GOLDMAN



# REAL ALE

## ONE OF LIFE'S FLEETING PLEASURES

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**T**he citizens of Britain and America have been described as "two peoples separated by a common language." *They* run their cars on "petrol" and fix them with "spanners" or "spiders," "pants" are what's worn underneath your "trousers" and you must "queue" for a pint of "real ale."

Most of these linguistic differences can be understood because they have a direct counterpart in American culture. Thus the term "real ale" might seem obvious: "real" as in well or properly made, genuine, authentic and "ale," a top-fermented beer typical of England and now enjoyed widely in the United States.

By such a definition, the New World seems to be crawling with real ales these days. Certainly any ale brewed and served in England should pass the test.

Such is not the case, however. Real ale is a term of art among beer drinkers in England. The term inspires passion and devotion there. Use it casually in an English pub and you may find yourself wearing your beer rather than drinking it.

Any beer called real ale in Britain must pass muster and, not surprisingly, cheaters and frauds abound. Although based on the beers of simpler times, the making and serving of real ale today is anything but simple. The problem comes in the way of modern contrivances — that is, if you consider filtration, refrigeration and compressed gas to be modern. You see, real ale is served pretty much the way it would have been served more than 200 years ago.

In those days, beer was drawn directly from a cask in the cellar. Like red wine, the temperature of the beer was that of the cellar itself. Whether inadvertently or intentionally, the casks were not airtight so carbonation was low. Air from the room quickly entered the barrel as beer was drawn out, reacting directly with the beer to change its flavor. In addition, it brings microbes that will further affect things. Thus the flavor of beer served in this manner changes as it is served,

giving the drinker a different impression not only from day to day, but sometimes from hour to hour.

The serving of real ale today has benefited from some 20th-century innovations. Refrigeration is used to maintain a constant cellar temperature that hovers around a decidedly unfrosty 55 degrees F. Stainless-steel casks have replaced the wooden varieties once used. To ease the burden on the publican, the beer may travel by hose from the cellar to the bar, but still is pulled by human force rather than being pushed by bottled gas. This movement is achieved by something called a beer engine. The apparatus works just like an old-time water pump: pump the handle and beer is pulled up from the cellar and delivered to a glass held under the spout. Once poured, a classic real ale presents a flavor sensation that is quite different from other beers. For starters, the whole feel of the beer in your mouth is different. With the prickly, acidic bite of the CO<sub>2</sub> stripped away, the resulting beer is softer and gentler than the usual gassy pint. In addition, the warmer temperature of the beer makes all the flavors available and usually results in a pint that is much more interesting to drink.

Of course, cask-conditioned beers are neither filtered by the brewer nor pasteurized before shipment. These factors, combined with the secondary fermentation in the cask, ensure that the average real ale is beer at its freshest and, generally, most flavorful. Adherents applaud the rich flavor profile produced in cask-conditioned ales, but the production of these flavor highs comes at the cost of consistency. The very factors that improve the flavor of real ale can be detrimental. In fact, real ale handling procedures commonly create noticeable changes in the same product from cask to cask in the same pub. The changes wrought by these factors were clearly illustrated to a group of beer drinkers meeting in London's famed White Horse pub last summer. Landlord Mark Dorber presented two beers for tasting and we were asked to comment on the differences between

BY RAY DANIELS





**A barman at the White Horse Pub in London draws a pint of real ale.**

them. The two were quite distinct, and my hasty notes written at the time read as follows. Beer #1: Caramelly aroma, bit fruity, flavor dominated by caramel. Beer #2: Dry-ish, light malt flavor, very light fruitiness.

After some discussion, the beers were revealed as being the same product, namely Shepherd Neame Spitfire, but served from two different casks. Both were quite drinkable yet quite different. The lesson for visiting Yanks was clear: in such variation lies some of the charm and allure of real ale.

### REAL ALE STYLES

Technically any ale can be a real ale, but traditionally only English-style ales are considered by the Campaign for Real Ale. At the annual Great British Beer Festival, awards are given in just six categories — mild, bitter, best bitter, strong beers, bottle conditioned and specialty bitter. Expanding this just slightly, CAMRA research on beer styles has classified as many as nine styles and substyles as shown below.

STYLE	OG	BITTERNESS	BU:GU
Light mild	1.036	21	0.58
Dark mild	1.034	21	0.61
Bitter	1.035	25	0.71
Best bitter	1.041	30	0.73
Strong bitter	1.048	30	0.63
Porter	1.047	36	0.77
Old ale	1.050	28	0.56
Winter ale	1.065	29	0.45
Barley wine	NA	NA	—

But one man's charm and allure is another man's inconsistency. Each product must have a time when it is at its best or, at the very least, when it presents the flavor profile the brewer intended. Yet the whole concept of real ale undermines efforts to deliver beer with a consistent taste.

Under the worst circumstances a pint of real ale may not only be disappointing but downright bad. Indeed, real ale is subject to a host of ills and abnormalities rarely seen in other commercial beers. Given all these difficulties, the big question is why bother?

On the whole, the glory of real ale is based on a worthwhile observation: that beer brewed and served following real ale conventions tastes quite different from the stuff that has been hyperprocessed by the brewery chemists. If one must compromise some consistency of flavor for improved character overall, then so be it.

While the increased flavor argument is a sound basis for producing any food or beverage product, the devotion to real ale in England seems to go beyond reason at times. In part, the appeal of real ale seems to be from that certain facet of the English character that abhors easy consistency — especially if it is contrary to the way things traditionally have been done — no matter what the flavor effect.

Still, American beer enthusiasts find that part of the charm of their local microbrewery may come in the batch-to-batch variation of their favorite product. Through regular visits, they chart the changes in character and the variations in freshness. And when the beer is particularly good, it is an occasion to stay and enjoy just one more before heading home. In truth, such observations are similar to those enjoyed by real ale enthusiasts. In addition to holding opinions about which brewers and products are best, they opine about which pubs and seasons produce the best beer.

Today, a handful of breweries, many of them brewpubs, offer some sort of real ale in the United States. Try one next time you have the chance. If possible, taste the real ale version side by side with the same beer served in the conventional manner. You'll

### REAL ALE IN LONDON

#### THE GREAT BRITISH BEER FESTIVAL

Each year the British organization the Campaign for Real Ale (CAMRA) sponsors the Great British Beer Festival to showcase real ales properly served. The festival runs for five days in early August and is held at the Olympia Exhibition Hall in the heart of London. More than 300 real ales are served as well as 180 foreign beers and other fermented beverages. Music, food and pub games are part of the package. Other real ale festivals are held around the country at different times of the year. For information, contact CAMRA at 44 (0) 1727 867201; FAX: 44 (0) 1727 867670; e-mail: [camra@camra.org.uk](mailto:camra@camra.org.uk).

#### PUBS WITH REAL ALE

If you make it to England at any time, go to the nearest bookstore and pick up a copy of *The Good Beer Guide* listing the pubs CAMRA has designated as having both good beer and good atmosphere. Any entry is a good place to start your exploration of real ale.

find the differences are enlightening as well as enjoyable.

If your introduction to real ale makes you a fan, don't hold your breath waiting for a real ale explosion to sweep the United States. In addition to special equipment, the proper serving of real ale requires the care and skill of a knowledgeable publican or cellarman. Without that base of knowledge in the bars of America, real ale will never get far. Until then, you'll have to satisfy yourself with the few scattered outlets and nascent real ale festivals that offer this type of beer as a specialty. Or, if you're able, get yourself to London for the annual Great British Beer Festival in early August each year featuring more than 300 real ales.

To be sure, the "perfect" real ale once found will be a fleeting experience. But to enjoy the world of real ale is to gaze upon a tapestry of beer flavor so rich and varied that little can compare.



## PUTTING THE "REAL" IN REAL ALE

**Y**ou can't read much about English beers without running into the term "real ale." While the subject encompasses more subtle issues, a basic definition can be provided in 35 words or less:

"A name for a draft (or bottled) beer brewed from traditional ingredients, matured by secondary fermentation in the container from which it is dispensed and served without the use of extraneous carbon dioxide."

The pinnacle of real ale is represented by cask-conditioned ale — the usual draft format for serving such products. A cask is a stainless-steel (or occasionally wood) barrel made to be laid on its side while the beer is served. The term cask conditioned indicates that secondary fermentation of the ale has taken place inside the cask.

The Campaign for Real Ale (CAMRA) in Britain has been working since 1971 to revive and preserve the traditions of real ale and cask-conditioned ale. Fortunately, they have been quite successful. Draft bitters and some pale ales may be real ales when you drink them in the United Kingdom these days. Indeed, a beer the typical American tourist would describe as "warm and flat" most likely falls into this classification, although real ale adherents would argue their type of beer is both cool and noticeably carbonated.

The distinction between real ale in its cask form and normal draft beer from a keg is the result of activities by both the brewer and the publican. For starters, brewers often dry-hop their cask ales, adding hop plugs to the beer before the cask is bunged. And, as mentioned above, draft real ales are cask conditioned — carbonated by secondary fermentation in the cask. When real ale brewers ship their beer, it is actively fermenting. When it arrives at the pub, such beer requires careful management to make

sure it is served in good condition. As a result of these actions by the brewer, cellerman-ship is an important skill of the publican because it impacts many qualities of the product when it is served.

### CLEAR BEER HERE

When properly served, a good real ale will be clear with no cloudiness or haze. In addition, it will be at cellar temperature (50 to 57 degrees F) and have a subtle but noticeable level of carbonation.

Because real ale is shipped to pubs while actively fermenting, clarifying the beer is the greatest challenge. Isinglass finings are commonly added by the brewer before shipment to aid clarification. If not, the publican may add the finings himself. Finings help the yeast settle to the bottom of the cask so the beer will clarify more quickly.

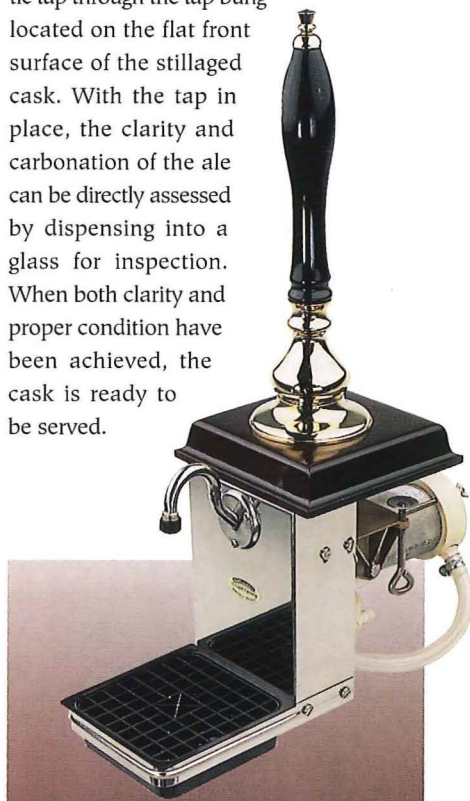
To keep from disturbing the resulting yeast sediment, casks must not be moved for several days before or during serving. Cask-conditioned ales require enough properly refrigerated cellar space to keep a substantial inventory in serving position. The placement of a cask in serving position is called stillaging. In addition to giving the cask a home it will occupy until empty, the publican uses wood chocks to establish a precise forward-tilted position. This position allows the maximum amount of beer to be served, while providing a space below the tap where yeast and finings can collect.

Once the ale is stillaged, it will be vented to achieve the proper level of carbonation. A common trait of real ale — and indeed of all bitters and English pale ales — is a much lower level of carbonation than is found in American beers. Measured as volumes of CO<sub>2</sub> dissolved in one volume of beer, we are accustomed to seeing values of 2.25 to 2.75

in the United States. As a result of cask conditioning the typical bitter will have values of just 0.75 to 1.

During stillaging, the cask bung will be positioned so it is pointed at the ceiling. The publican taps through a partially drilled hole in the center of the bung and inserts a piece of porous wood called a soft spile. Carbon dioxide (usually mixed with beer foam) escapes from the cask through this porous wood for a period as the beer settles. When activity through the soft spile has quieted, it is replaced with a hard spile that retains the remaining carbonation. When the ale is being served the hard spile will be removed to allow air into the cask.

Sometime during spiling the publican will tap the cask. This is done by hammering a brass, stainless-steel or plastic tap through the tap bung located on the flat front surface of the stillaged cask. With the tap in place, the clarity and carbonation of the ale can be directly assessed by dispensing into a glass for inspection. When both clarity and proper condition have been achieved, the cask is ready to be served.



REAL ALE IS A TERM OF ART





**Volunteers Steve Hamburg, Mark Dorber and Randy Mosher set up hand pumps for the Chicago Beer Society's Real Ale Festival. They attached pump clips to some of the 20 beer engines used at the festival.**

Most beer drinkers know that CO<sub>2</sub> pressure is what forces the beer from the bottom of the keg to travel up the hose and into your glass. In bars, beer typically must travel quite a distance from the cooler to the tap head so quite a lot of CO<sub>2</sub> pressure must be applied to move the beer. With real ales, no external CO<sub>2</sub> pressure is applied to drive the beer. Instead, the beer must be "pumped" up to the bar using a traditional beer engine.

The long handle of the beer engine is used by the bartender to actually draw the beer from the cask through the hose and out the nozzle. With the hard spile removed, the cask admits air to replace the volume of beer drawn.

At this point, the product reaching the glass is essentially real ale, or more precisely, cask-conditioned ale. Purists applaud this method of serving because of the unique flavor characteristics imparted to the beer. Secondary fermentation in the cask ensures that the beer is as fresh as it can possibly be and it certainly doesn't lose any flavor through filtration or pasteurization. In addition, the practice of dry-hopping delivers a flavor that is unmatched by nearly any other process.

## THE DARK SIDE

If the charm and glory of real ale can be found in the improved flavor of the fresh product, its dark side can be found in the

ills associated with poorly handled ales. CAMRA's *Good Beer Guide 1995* (CAMRA Books), lists a number of undesirable characteristics that might be found in a pint of real ale. These range from a pint that is simply flat and insipid to one that might display aromas and flavors associated with parsnip, celery, sweat, plastic, sewers or creosote.

In the United States we are accustomed to blaming the brewer when beer is bad, but in most cases when a cask-conditioned ale displays off-flavors it is the person who serves the beer and not the one who makes it who bears the responsibility. The reason for this is simple: most of the faults found in cask ale result from the cellaring practices required by real ales.

Throughout the cellaring process, real ale is exposed to the cellar environment. Also, as mentioned previously, proper cask ale admits air to the container as it is served. These exposures to air change the character of the beer from day to day and, in fact, from hour to hour. The first effect is that of oxidation. Oxygen reacts with compounds in beer to change its character and flavor. These effects may be noticeable within a few hours of tapping and grow more pronounced over a period of several days if the cask is not consumed. More extreme effects of admitting air to the cask can occur when bacteria begin to play a role. Beer-spoiling bacteria can be found in virtually any sample of air and are likely to be present in substantial concentrations anywhere beer is handled or served. In addition, unsanitary conditions in the cellar may introduce contamination by way of a dirty spile or tap. The most common bacteria that affect cask ales are the acetobacter, which convert alcohol into vinegar. Once these enter a cask, it takes only a day or so before they start to have a flavor impact. Cask ale that is poorly handled or not consumed within two or three days of tapping may exhibit a pronounced vinegary flavor.

To help the publican keep his cask ale inventory fresh, real ale producers typically make their beers available in several container sizes, allowing the publican to choose one his patrons will quickly consume. The largest casks are barrels and contain 45 U.S.

gallons, next and more commonly seen are kilderkins containing 22.5 U.S. gallons. The most popular size is the firkin, which contains 11.25 U.S. gallons. Occasionally, you may also see a "pin" of just 5.6 U.S. gallons. (These are one-half, one-quarter and one-eighth, respectively, of the Imperial barrel, which has 45 U.S. gallons.)

From this description you can see that a bar wishing to serve true cask-conditioned ale faces many challenges. It takes a good deal of skill to have beer ready for serving when it is needed. Then one must worry about serving the beer quickly so the quality remains high. Because of all these challenges, it's not surprising that some shortcuts have been developed.

## CHEATERS AND FRAUDS

While purists protest, some English brewers and publicans have found that alternative techniques must be used to deliver a quality product that is something akin

## REAL ALE RESOURCES

- Allen, Fal. "Cask Conditioned Beers for the Craft Brewer," *MBAA Technical Quarterly*, Vol. 33, No. 2, 1996.
- Campaign for Real Ale, 34 Alma Rd., St. Albans, Herts. AL1 3BW; FAX 011 441 727 867670; [www.camra.org.uk](http://www.camra.org.uk).
- Cask Conditioning, A Do-It Yourself Guide*, the UK Homebrew Homepage (<http://sun1.bham.ac.uk/graftong/homebrew.htm>), Gillian Grafton, webmaster.
- Foster, Terry. *Pale Ale*, Brewers Publications, 1990.
- Hough, J.S., D.E. Briggs, R. Stevens, T.W. Young, *Malting and Brewing Science*. Volume 2. Hopped Wort and Beer, Chapman and Hall, 2nd edition 1982, pp 687-692.
- O'Neill, P.J. *Cellarmanship*, CAMRA Books, 1992.
- Wheeler, Graham and Roger Protz. *Brew Your Own Real Ale at Home*, CAMRA Books, 1993.



## REAL ALE IN AMERICA

### BREW PUBS SERVING REAL ALE (AS OF DECEMBER 1996).

Wharf Rat, Camden Yards, Baltimore, Md.  
Back Bay, Boston, Mass.  
Commonwealth Brewing Co., Boston, Mass.  
Walnut Brewery, Boulder, Colo.  
McNeill's Brewery, Brattleboro, Vt.  
John Harvard Brewhouse, Cambridge, Mass.  
Goose Island Brewing Co., Chicago, Ill.  
Wynkoop Brewing Co., Denver, Colo.  
Flatlanders, Lincolnshire, Ill.  
Gritty McDuff's, Portland, Maine  
Il Vincino Wood Oven Pizza, Salida, Colo.  
Twenty Tank Brewery, San Francisco, Calif.

### BREWERIES MAKING REAL ALE (CHECK WITH BREWERY FOR LOCAL AVAILABILITY)

Atlantic Coast Brewing Co., Boston, Mass.  
Boston Beer Co., Boston, Mass.  
Wild Goose Brewery, Cambridge, Md.  
St. Arnold Brewing Co., Houston, Texas  
Bell's, Kalamazoo, Mich.  
Oxford Brewing Co., Linthicum, Md.  
Geary's, Portland, Maine  
Shipyards Brewery, Portland, Maine  
BridgePort Brewing Co., Portland, Ore.  
Rogue Ales Brewery, Salem, Ore.  
Lind, San Leandro, Calif.  
Pike Brewery, Seattle, Wash.

to real ale. Some of these variations may be found in the United States where the knowledge of real ale is more limited. Following are some of the most common practices.

**Hand-pumped ale:** The most visible indicator of real ale to the consumer is the distinctive beer engine used to draw beer from the cask to the bar. Particularly in the United States, bars have a tendency to call any hand-pumped beer "cask conditioned." Unfortunately, in many cases the beer is not being served from a cask but by a standard American keg. Worse yet, it is often true that no secondary fermentation has occurred in the serving container. If these beers are kept at cellar temperature (50 to 57 degrees F) and served without the use of CO<sub>2</sub>, they

maintain some bare vestige of real ale character. Strictly speaking, however, such beers are not real ales, although the resulting product may be quite enjoyable.

**Blanket pressure:** Although specifically prohibited by the definition of real ale, supplemental carbon dioxide is used in serving real ale at some English pubs. In these cases, the CO<sub>2</sub> is not supplied under pressure and plays no role in delivery of the beer to the bar. Rather, CO<sub>2</sub> is substituted for the air that would otherwise fill the cask as it is emptied. A common mechanism for achieving this goal is the cask breather — a demand valve device that admits CO<sub>2</sub> to the cask only when beer is removed. This technique improves the quality and consistency of cask-conditioned ales by eliminating the concerns associated with the admission of ambient air to the cask. Despite this, the practice is frowned upon by purists. Instead, they recommend that air admitted to the casks first be filtered to remove bacteria.

**Nitro-kegs:** In an effort to emulate real ales, some brewers now make ales served with a mixture of nitrogen and carbon dioxide gas. To encourage the belief that they are real ales, the taps for these beers may be designed to look like a beer engine. England's Campaign for Real Ale describes these beers as "less gassy and more creamy than a [traditional] keg beer," but notes they "are still pasteurized, filtered and served too cold, and therefore singularly lacking in flavour."

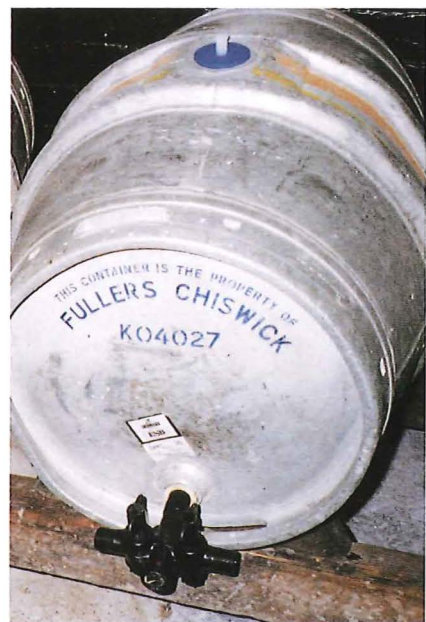
## DISPENSING

The subject of real ale is a passionate one with those who enjoy a "proper pint." While all agree on the requirements for a real ale, other topics, while less clear-cut, are just as hotly debated. For instance, purists insist the proper dispensing spout be used on the beer engine. They are very much against a device called a sparkler that has come into widespread use in recent years. The device forces beer through very small holes as it enters the glass, churning up a thick blanket of small CO<sub>2</sub> bubbles in the glass. When a pint poured in this fashion is set before you it looks like

a swirling maze of foam — a creamy typhoon in a glass. Then, in a minute or two the foam resolves into a creamy inch-high head riding on top of a beautiful, clear glass of beer.

While this method produces a fine-looking beer, some brewers and regulars complain about the resulting flavor effect. This method of dispense is said to remove CO<sub>2</sub> leaving it less lively and, some would say, flat. The method is said to force hop flavor components out of the beer and into the head, changing the balance and character. Finally, that thick, creamy head is supposed to block aromas from the beer itself, reducing enjoyment of the full character of the product. The flavor of the product dispensed in this manner is supposedly so different from that of the properly dispensed item that some pundits of the beer scene insist it no longer deserves to be called "bitter."

Real ale is a conundrum for brewers and for some beer drinkers as well. To produce it, the brewers must turn back the clock on brewing technology, forswearing many of the techniques that make beer more consistently enjoyable. Furthermore, they must relinquish control of their product and its quality to a vast, and often untrained, cadre



**This firkin of Fuller's ale in the cellar of the White Horse Pub in London is hand-spiled and ready to be served.**



By Steve Hamburg

**I**t has become easier to obtain real English casks and hand pumps, but chances are you probably already own most of the hardware needed to keep and serve cask-conditioned ales at home. Plus cellaring techniques are easily adapted to even the most basic homebrewing setups.

Proper procedure is more important than hardware, so let's examine some common flaws in homebrewed real ales and some tips for avoiding them.

The procedures described here assume the use of stainless-steel soda kegs rather than actual casks. Until we have easier access to casks, shives, keystone, taps and spiles, the Cornelius keg continues to be the most practical container for cask-conditioned homebrew.

**Overconditioning** — Overconditioning is the most common flaw seen in U.S. attempts at duplicating real ales. Aim for between 0.75 and 1 volume of CO<sub>2</sub>, meaning the quantity of priming sugar is about half of what you normally use.

Theoretically, there should be enough residual sugar in your beer after primary fermentation to make priming sugar unnecessary. In fact, most accomplished commercial brewers in the United Kingdom never prime their cask beers. At home you simply rack to your kegs and wait, occasionally flipping up the pressure relief valve to see how the condition is developing.

Once the keg has had ample time in its serving position, vent it to release any excess carbonation. Flip open the pressure-release valve to do this. If the beer is particularly lively, some beer may escape through the valve. Leave the valve open until the release of gas has stopped, then close it. In cellarman's terms, this is spiling.

**Poor clarity** — Real ales should never be served cloudy or hazy. Although many U.S. brewpubs serve hazy beers, these would be unacceptable to pub customers in England. Even though the beer is unfiltered, it should be absolutely bright. Clarity is accomplished with finings.

Common British practice is to add finings when racking to the cask. Approximately one pint of isinglass per firkin (nine Imperial gallons), or about eight to 10 ounces per five gallons is enough for standard-gravity ales. Increase the quantity of finings for higher-gravity beers.

Another tip for clearer beer is to cut two inches off the beverage-out line to leave behind the sediment resulting from conditioning in the keg and decrease the chance of pulling (dispensing) cloudy beer.

**Temperature control** — Store the beer for at least a week between 55 and 60 degrees F (13 and 16 degrees C). This is slightly warmer than normal cellar temperatures, but necessary for both clearing and conditioning. Allow the beer to sit undisturbed for another week or two, preferably at cellar temperature (50 to 55 degrees F or 10 to 13 degrees C) before serving. This procedure works best for lower gravity bitters and milds. For higher gravity beers, allow substantially more time.

**Agitation** — A few days before tapping, move the keg to its serving position and leave it there until it is empty. You don't want

to disturb the finings, so make sure the keg is in a secure position. If you must move the beer, roll the keg to remix the finings before final placement. It is best to situate the keg a few days in advance to give it time to settle at proper temperatures before serving.

Most of the time we don't have the chance to let beers settle on site. The best option then is to rack the bright beer into another container for serving. You can do this with a closed keg-to-keg transfer or gentle siphoning procedure. Once the beer is off the sediment it won't keep as long so if there is any doubt about turnover, use three-gallon (11.4-L) kegs.

**Sanitation** — Serving lines, pumps and glassware must be clean. Extra care also should be taken to keep your storage area clean as well. When real ale is served, outside air is introduced into the cask. Keeping your cellar clean and free of bad odors is important. Many of us use refrigerators as substitute cellars, but they are notorious for harboring molds. Clean the interior with a sanitizing agent regularly.

**Improper cask size/selection** — Traditional dispense introduces outside air to the cask so a good publican orders the proper size to maximize the duration at which the beer is in peak condition. In Britain, a popular beer with quick turnover is most commonly dispensed from a kilderkin, occasionally even a full barrel. Specialty ales are a tougher sell, so are best kept in firkins or the rarer pin. For homebrewers, even a five-gallon soda keg can be too much to serve in one shot, so three-gallon kegs are handy.

**Insufficient aging** — All too often, even in Britain, cask-conditioned beers are served too green (young). Standard-gravity beers should mature for two to three weeks. High-gravity beers require even more time, sometimes several months.

Assuming you've followed these precautions and given your beer time to condition and clear, you are ready to tap the keg and take a sip. If you have a beer engine, hook it up and pull a couple of pints (open the release valve fully when the pump is used). If you have a sparkler, don't use it yet (the sparkler will remove condition from the beer). You can also take a sample with a normal gas and cobra tap setup using a very low gas setting. Pour approximately half a pint into a stemmed wine glass. Optimally, you want a crystal clear beer with a nice tight bead on the head. Tip the glass to check the base of the head, looking for a steady profusion of tiny bubbles. If it is too frothy, you'll need to vent some CO<sub>2</sub>. Too flat? Seal the keg and give it more time to condition.

How long does it take for a beer to reach proper condition and drop bright? Some beers drop bright in a three or four hours, others take three or four days. Typically, higher gravity beers fall into the latter category. Plan on at least two days between venting and serving for most ales, and double for stronger ones.

**Steve Hamburg** is a veteran homebrewer, beer judge, writer and speaker with a well-known passion for cask-conditioned ales, beer travel and any sport played with a ball. An active Chicago Beer Society geek, this "Bitter Man" was an organizer of the 1996 Real Ale Festival.



of publicans. In return, they garner the praise of a minority of ale drinkers and, with any luck at all, their loyalty as well. It is a process that makes the heights of beer flavor a bit higher, but also makes the depths a bit lower. As you explore the world of real ale, remember the challenges faced in producing a good pint so that you can rejoice in the rich texture of variety offered by this genre.

## HOMEBREWING REAL ALE

The term "real ale" describes a method of producing and serving beer. It can be applied to any style of British ale to produce a distinct and flavorful product. In English pubs you will find a whole range of beer styles from bitter to barley wine and mild to milk stout presented as real ales. Thus, for the homebrewer, real ale techniques can be broadly applied to a wide variety of recipes.

You can produce proper real ale without any special equipment. Any bottle-conditioned ale meets the strict criteria for real

ale. With just a bit of effort, you can emulate draft real ale in a bottled product.

First, take care not to overcarbonate, aiming for values of 0.75 to 1 volume of CO<sub>2</sub>. This will require priming sugar additions of half the size you would use for other beers.

Second, real ale certainly cannot be served cold and purists insist it should never be stored cold either. The proper temperature for a real ale cellar is 55 to 57 degrees F (13 to 14 degrees C). While the first beer or two may register as being a bit warm at that temperature, you'll find you get used to it. There can be no doubt that beer served at this temperature will reveal more flavor and character than those served in the frost zone of most American brews.

If you want to move beyond bottle conditioning, a second option is to use a keg without a beer engine. While you could force carbonate to a low level with CO<sub>2</sub>, it would be more traditional to carbonate by priming. With this approach, you truly capture the effect of cask conditioning by allowing a secondary fermentation in your serving vessel. Here again, use half the amount of

priming sugar you normally add. When you dispense such beers, you should keep the CO<sub>2</sub> pressure very low (5 psi) or work out some sort of gravity dispense system. Purists may dislike this approach, but as a starting point it's not bad.

If you are really fanatical about real ales, you may find the investment in a beer engine is justified. Reconditioned hand pumps can be found for about \$300, with new ones going for as much as \$500. To use these with a soda keg, just lock open the pressure relief valve and use the engine to draw the beer from the out tube.

By following these techniques for priming, carbonating and serving you can produce English-style ales that emulate the classic real ale serving techniques.

Ray Daniels is president of the Craft Beer Institute in Chicago and an avid homebrewer. He writes and speaks frequently about beer and brewing to audiences around the world and is organizer of the Real Ale Festival<sup>SM</sup>. His book, *Designing Great Beers* (Brewers Publications, 1996), describes the recipe formulation process for many styles of real ale.

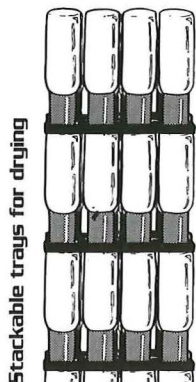
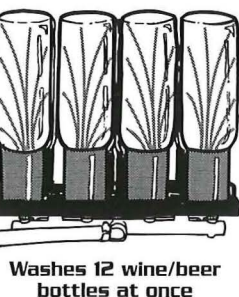
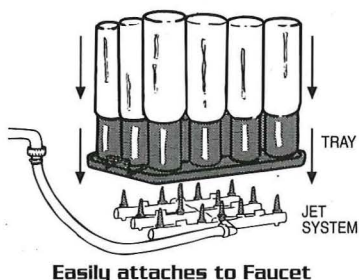
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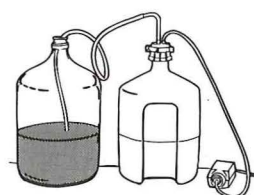
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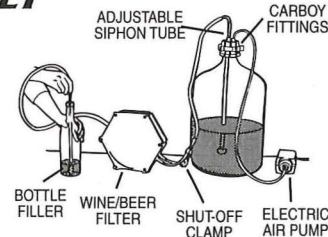
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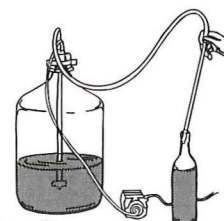
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By  
*Spencer W. Thomas*





*The Magic of*

# MARDI GRAS MEAD

**T**he story begins in June 1994, after Dan McConnell and Ken Schramm presented a talk on honey and mead at the AHA National Homebrew Conference in Denver, Colo.

The AHA, probably influenced by the free mead Dan and Ken handed out during the tradeshow/festival sessions, asked them to make a mead for the 1995 Conference. "No way," they exclaimed, "it takes at least two years to make a decent mead!" So, 1996 became the target year.

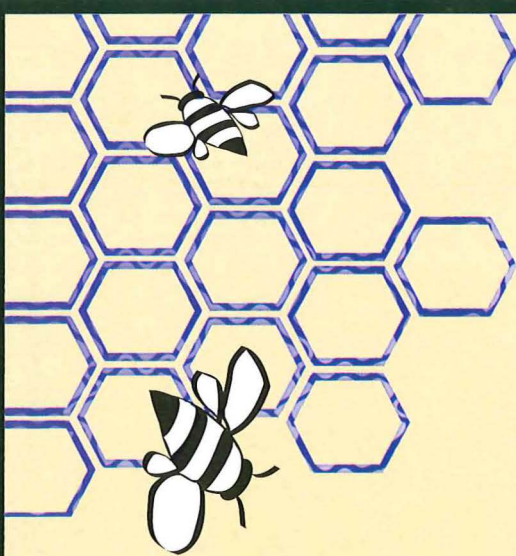
Or, the story could start in April 1993, when Ken and Dan gathered more than 150 pounds



of seven varieties of honey and made 70 gallons of mead in preparation for their June 1994 AHA Conference presentation. Or perhaps it was sometime in between when Ken searched out, bought and moved to a house with a yard full of fruit trees. All these events contributed to the complex beverage called "Mardi Gras Mead" served at Homebrew Bayou, the AHA 1996 National Homebrewers Conference in New Orleans, La.

In any case, the story has many threads all meeting and, literally, blending together in the end. These are the ciders, the meads, the blending and the magic.





## THE CIDERS



### *Sweet Cider*

Ingredients for about 5 gal (19 L)  
(scaled from 14 gal or 53 L)

- 5 gal fresh pressed apple juice from several apple varieties (19 L)
- 1 lb dark brown sugar (0.45 kg)
- 2 lb Michigan floral honey (0.9 kg)
- 24 oz frozen apple juice concentrate (710 mL)
- Yeast Lab M62 (sweet mead)

- Original specific gravity: not recorded
- Final specific gravity: not recorded
- Age 20 months in glass

### *Dry Cider*

Ingredients for 5 gal (19 L)  
(scaled from 10 gal or 38 L)

- 5 gal fresh pressed apple juice from several apple varieties (19 L)
- 1 lb brown sugar (0.45 kg)
- Yeast Lab A06 yeast

- Original specific gravity: 1.063
- Final specific gravity: about 1.000

In fall 1994, Ken harvested 16 bushels of apples: Jonathans, Northern Spies and Red Delicious from his trees. He had them pressed and used the juice to make two

ciders that would contribute to the mead. The pressed juice had an original gravity of 1.058. He made 14 gallons (53 L) of sweet cider and 10 gallons (38 L) of dry.

Ken does not pasteurize or otherwise sanitize his juice. Heating it can change the flavor and contribute to a pectin haze. Adding sulfites can result in a nasty taste, and some people are allergic to sulfites. In fact, Ken finds when he gets some wild yeast contribution he usually ends up with a more complex, interesting and better-tasting result. However, he still adds cultured yeast for more predictable results.

## THE MEADS



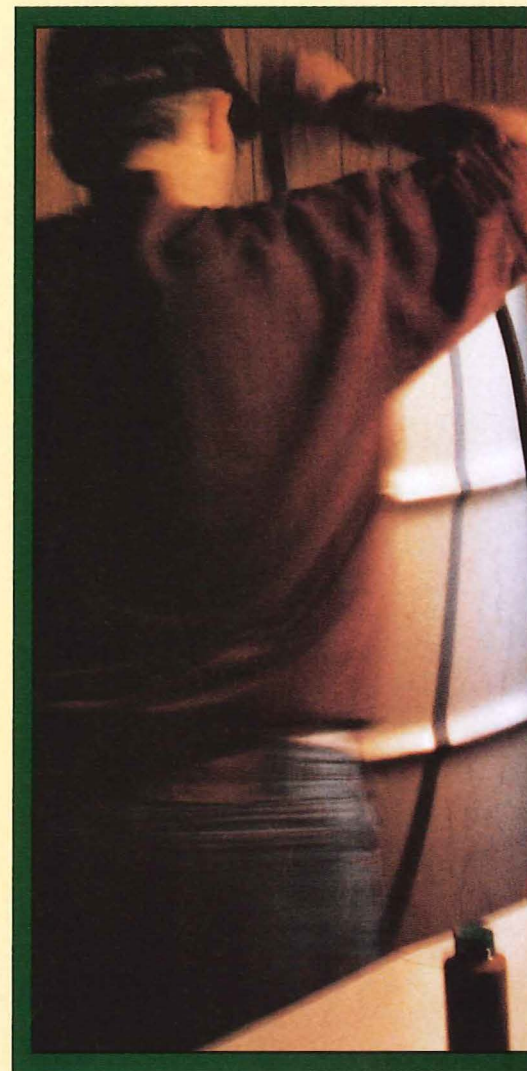
### *Dry or Medium Mead*

Ingredients for 5 gal (19 L)  
(scaled from 15 gal or 57 L)

- 4 gal water (15 L)
- 1 gal Michigan fruit-blossom honey (3.8 L)
- 1 1/2 tsp yeast energizer (7.4 mL)
- 1 1/2 tsp yeast nutrient (7.4 mL)
- 3/4 tsp calcium carbonate or chalk (CaCO<sub>3</sub>) (3.7 mL)
- Yeast Culture Kit Co. D47 wine yeast

Bubble oxygen through the must for 30 minutes to aerate.

On a camping trip to Michigan's Leelanau Peninsula, Dan found a beekeeper who sold him large amounts of fruit-blossom honey. The area is a major fruit-growing region and produces a significant portion of the nation's tart cherry crop. On Dec. 7, 1994, Ken and Dan used 10 gallons (38 L) of this honey to make 45 gallons (170 L) of three meads. The first two batches were brewed from the same 15-gallon (57-L) recipe and fermented separately with the same yeast, and turned out dry and off-dry. The third batch used a different recipe

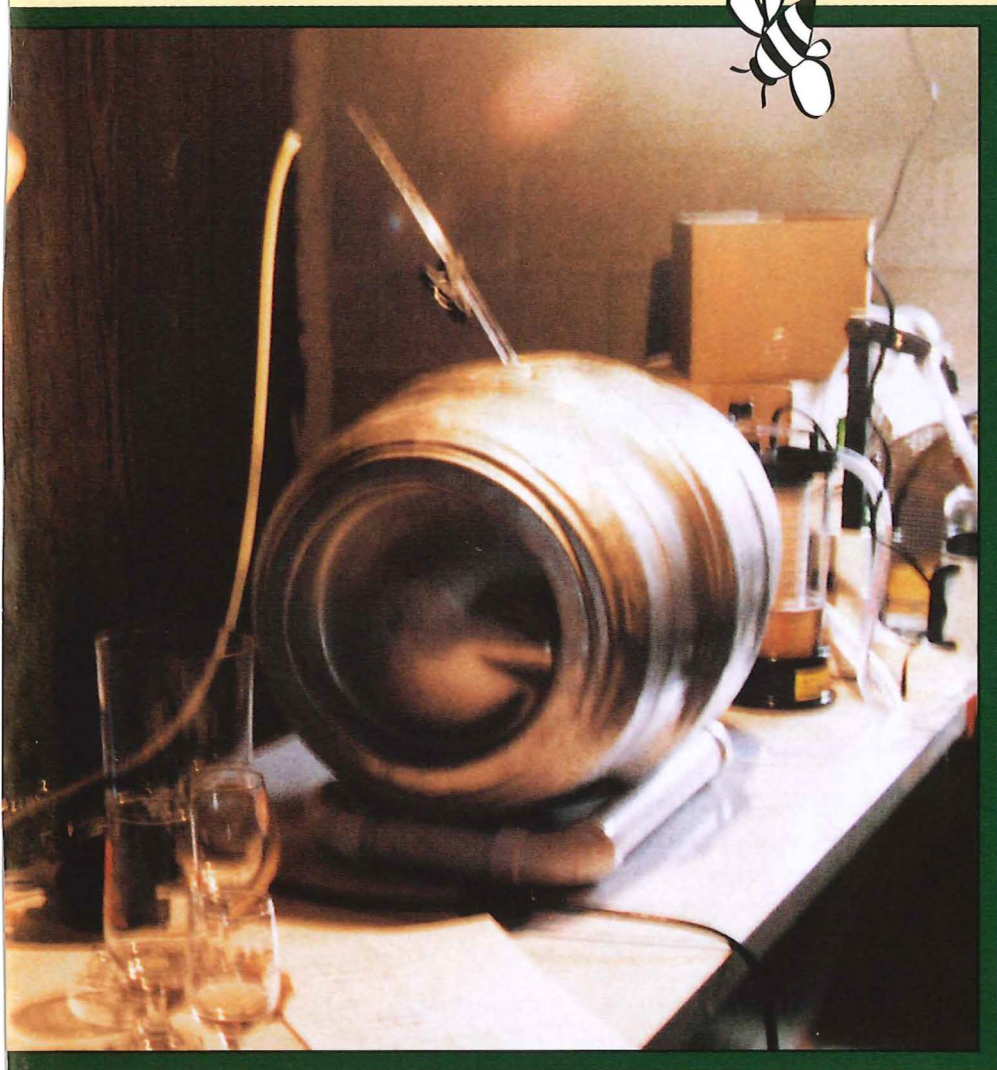


and produced a sweet mead. For reference purposes, the three batches were dubbed dry, medium and sweet.

The equipment needed to brew mead generally is much simpler than for beer. You need a mixing, and possibly pasteurizing, container and fermenters. Ken and Dan used equipment from pico-Brewing Systems. The meads were mixed and pasteurized in pots made from legally acquired half-barrel kegs and fermented in half-barrel kegs (two Sanke and one Hoff-Stevens).

The procedure for all three batches was the same: the water was brought to a boil, the heat turned off and the honey added. The must was thereby pasteurized before chilling and pitching the yeast.





Dan blends cider from a 15-gallon keg into a 55-gallon drum of sweet mead.

### *Sweet Mead*

Ingredients for 5 gal (19 L)  
(scaled from 15 gal or 57 L)

- 3 2/3 gal water (14 L)
- 1 1/3 gal honey (5 L)
- 2 1/2 tsp yeast energizer (12.3 mL)
- 2 1/2 tsp yeast nutrient (12.3 mL)
- 1 tsp calcium carbonate or chalk  
( $\text{CaCO}_3$ ) (4.9 mL)
- Yeast Culture Kit Co. D47 wine yeast

Oxygenate must for 45 minutes before pitching yeast.

The difference between the dry and medium batches raises an obvious ques-

tion: why? They were brewed at the same time using the same recipe, pitched with equal quantities of yeast from a single starter and fermented side by side. Why did one turn out sweeter than the other? The only difference we can pull from the brewing log is that the dry mead was fermented in a Sanke keg (one-half barrel), which is tall and relatively narrow, while the medium mead was fermented in a Hoff-Stevens keg (one-half barrel) lying on its side, which is thus short and squat.

Fermentation proceeded for about one year at ambient basement temperature (55 to 70 degrees F or 13 to 21 degrees C), undisturbed, except for

cleaning and replacing the fermentation locks when they blew off. Ken says it was more than three weeks before he could go longer than a day without replacing at least one airlock. They attribute the vigorous fermentation to at least two factors: oxygenation of the must and pH buffering with calcium carbonate. Oxygenation gets the yeast going strongly and the calcium carbonate prevents the mead from becoming so acidic the yeast stops working.

When asked whether they were concerned about yeast autolysis during this long primary fermentation, Dan replied, "We wanted it!" Leaving wine on the lees, or *sur lie*, is a well-established practice that gives a certain pleasant, toasty yeast character to the finished wine. Vintage Champagnes, for example, often exhibit this character.

On Dec. 27, 1995, Ken and Dan racked the meads into secondary fermenters. At this time, they took samples for blending experiments and topped the meads up to 15 gallons (57 L) to make up for losses. The sweet and medium meads were topped with a sweet mead made from blended leftover honeys during their 1993 meadmaking frenzy for the 1994 conference presentation. The dry mead was topped with a dry clover honey mead, also from the 1994 presentation.





## THE BLENDING

Ken and Dan intended from the beginning to blend the mead. Again, this builds on their winemaking experience. Wines are frequently blended after fermentation to produce a desired unique effect or to maintain a consistent "house character." Blending is not unknown in the brewing community. Lambic beers, for example, usually are blended from several casks of different ages. Guinness Stout allegedly has a small proportion of "soured" beer blended with the new beer to produce its unique flavor profile.

Dan and Ken blended the meads to produce complex, interesting meads, with subliminal or barely perceptible individual flavors combining into a whole definitely greater than the sum of its parts. They blended to accentuate the good qualities and to cover any minor flaws in the individual constituents. Cider was added not only to contribute fruit character, but to add some acidic and tannic backbone. A touch of the secret ingredient, Ken's Cherry Euphoria, added a note of whimsy and mystery.

### *Dinner Blend*

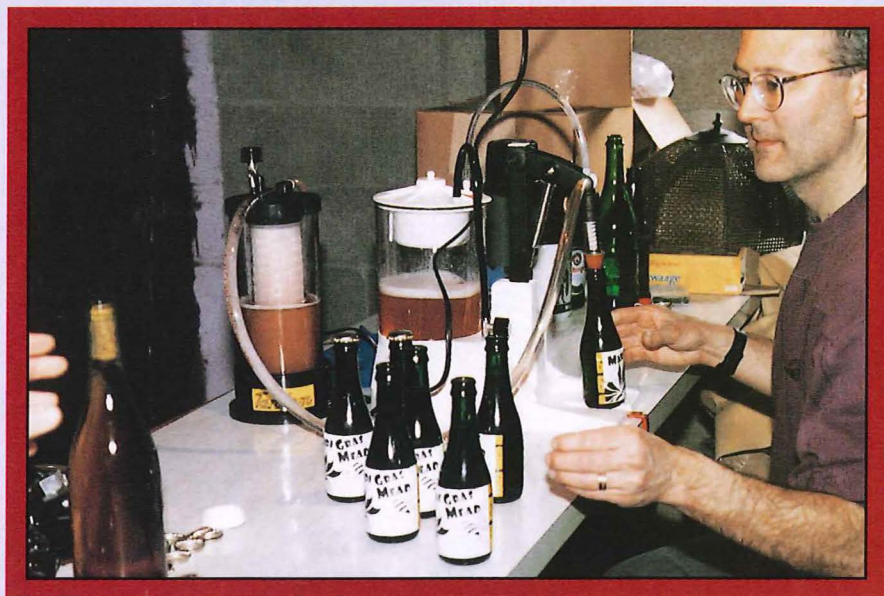
#### Ingredients for 5 gal (19 L)

- 2 1/2 gal dry mead (9.5 L)
- 1 1/4 gal dry cider (4.7 L)
- 1 1/4 gal medium mead (4.7 L)
- 3 cups Cherry Euphoria (710 mL)

### *Sweet Blend*

#### Ingredients for 5 gal (19 L)

- 2 gal sweet mead (7.6 L)
- 2 gal medium mead (7.6 L)
- 1 gal sweet cider (3.8 L)
- 13 oz Cherry Euphoria (385 mL)



**Dan finds a rhythm filling the 600 splits for AHA Conference attendees.**

After racking in December, Ken and Dan began to explore the blending possibilities. It was a process of blending to taste. The working principle was, "So, what if we ..." They eventually settled on two recipes. The "dinner winner" is dry and sparkling in 750 mL bottles to enjoy with dinner at the Conference Grand Banquet. The other is sweet and still, and was distributed in six-and-one-quarter-ounce (187-mL) bottles to the Conference attendees. Ken and Dan hope these will be hidden away to age for another couple of years, when they believe the mead will begin to peak.

The brewers blended and bottled on May 26, 1996. Dan and Ken blended first the dry mead then the sweet mead in a 55-gallon (208-L) stainless-steel drum. Dan, Ken, Hal Buttermore, Jim Johnston and Spencer Thomas set up an assembly line for labeling, filling, corking and capping the bottles. A total of 60 750-mL bottles of the dry mead were filled, corked and capped — 48 were sent to New Orleans for the banquet. That's more than 12 gallons (45 L) of mead. That was the easy part! Then 600 187-mL "splits" had to be filled with about 30 gallons of sweet mead.

The mead was lightly filtered on its way to the filler. The bottles used an ingenious vacuum filler (Temco Enolmatic with a G. Wein Tandem filter). It draws air from the bottle simultaneously pulling mead into the

bottle. When the bottle is full, a valve automatically closes, stopping the flow. Bottling had its own rhythm: push the bottle on the filler, wait, take the bottle off the filler. Dan did most of this while the rest of us attached labels and placed bottles on his right for filling or took full bottles from his left to cap.

## THE SECRET INGREDIENT

### *Ken Schramm's Cherry Euphoria*

#### Ingredients for 2 1/2 gal (9.5 L)

- 5 1/2 1-gal (3.8 L) freezer bags of Northstar sour cherries (from Ken's yard)
- 10 lb sugar (4.5 kg)
- 2 1/5 gal inexpensive vodka (8.3 L)

Combine ingredients and let steep for several months.

It's not clear whether they originally planned to use some of Ken's Cherry Euphoria in the blend, or whether it just happened. In any case, it's in there. The blending proportions given above are approximate. In the end, it was added by eye and by taste, with little attention to accurate measurement.



## THE MAGIC

What happened once the meads, ciders and Cherry Euphoria were blended and put in the bottle? The only way to tell is to taste it. We did this in August, two months after the 1996 Conference.

The dry mead: The nose explodes with honey, apples, a blush of cherries and a hint of almonds. Alcoholic warmth is evident. There is some toastiness from leaving it on the lees. The color is golden pink, it is clear with a huge white head. The mead is dry with some underlying sweetness and warming alcohol — a delightful dryness that meadmakers strive to achieve and have difficulty reaching. The honey flavor is solid with the apples well-defined.

Ken: "The Jonathan apple has a quintessential apple profile. Finally, there is a solid, but not obtrusive tannic backbone."

Dan: "It needs five solid years in the bottle."

Ken: "No, it needs two years".

Dan: "OK, two years and we start bringing them out over the next three years."

The sweet mead: Honey dominates the nose. There is some toastiness with a little sherrylike oxidation. The fruitiness is very nice with apple notes. The color is orange blush and it has huge legs. The flavor starts out sweet but is supported by a good acidity and some bitterness. Notes of toast and almonds are perceptible. There's just a hint of sherry and a nutty almond-hazelnut finish.

## THE MEAD MESSAGE

What can we learn from these two experienced meadmakers and the process by which they produced these meads? There are certainly technical tidbits that we can pull out and use directly, such as must oxygenation and pH control for quick fermentation. But Dan would like us to think about the role of blending in the formulation of a truly superior product. In meadmaking as in winemaking — much more so than in brewing — we are at the mercy of our ingredients. A maltster can produce essentially the same malt year after year. The brewer has exquisite control over the wort composition by varying the malt bill

and the mash conditions. The winemaker and meadmaker, however, start with a product of a plant or animal, which varies from year to year and source to source. We use this product without significant modification and hope for a desirable result.

By blending, we can recover some degree of influence. Perhaps more importantly, it is by blending that the meadmaker can exercise significant creative control over the final product. You can't do it with theory, you can't do it with equipment. You have to do

it with your nose, your palate and your intuition. But when you finally get it, you've got something you can really be proud of.


Spencer Thomas ([spencer@umich.edu](mailto:spencer@umich.edu)) has been making beer since 1982 and mead since 1993, although he took some time off after moving from the beer wasteland of Utah. By day, he is technical coordinator of JSTOR, a digital library on the World Wide Web. Spencer's Beer Page is a popular stop for homebrewers surfing the Web.

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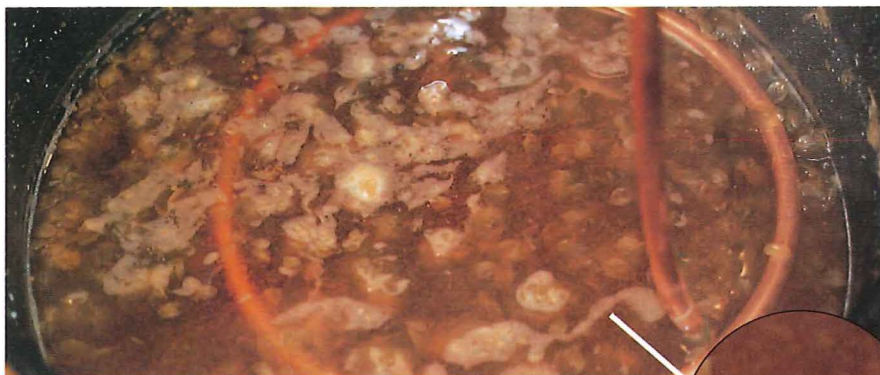
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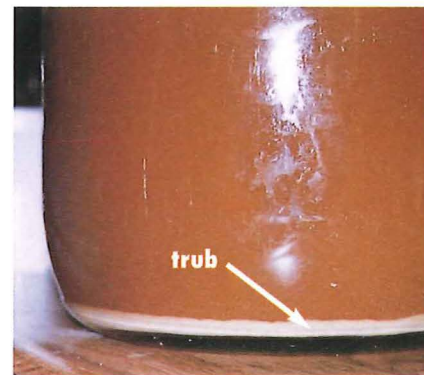
# FOR THE BEGINNER

Jeff Pzena

## Troubles with Trub



**Trub forms during the boil and is called hot break. The small tan chunks are trub.**



**A more familiar site is the layer of trub that forms in the fermenter. A layer of yeast may be visible above the trub.**

**D**id you ever notice the layer of stuff that settles out of wort in the primary fermenter? Maybe you've wondered what it was. The first time I saw it I thought my yeast was bad and had settled to the bottom. Over time I noticed there were two distinct layers on the bottom of the fermenter: one that settles out during the first day and one that develops over several days. The tan-ish one is trub and the whitish one above it is yeast. I have a good idea what yeast is, but decided to learn more about trub.

Trub (pronounced troob) is caused by the interaction of wort compounds during the boil. Depending on your method of brewing, you can notice its formation at two distinct times. Trub forms in the boiling kettle and then upon cooling, usually in the fermenter. The trub that breaks out of solution during a vigorous boil is called hot break

and the trub that forms on wort cooling is cold break. Trub looks like tiny chunks of tan matter. It is mostly made up of a tannin-protein compound where most of the tannins are derived from the hops and the protein is derived from the malt.

Trub can impact beer flavor and clarity. In general, the more trub carried over from kettle to fermenter the worse the flavor and the harder it is to achieve clarity. Yeast can use the fatty acids and lipids in cold break trub for cell membrane production, but excess trub (especially at warm temperatures) can cause off-flavors and aromas that fall into the following categories: solvent-like, harsh alcohol, fruitiness, astringency, rotten egg and sulfury.

These are harsh words to describe beer, but these flavors are in very small quanti-

ties and probably don't stand out very much unless huge amounts of hot break find their way into the fermenter. Such flavors may only put your beer in the category of good rather than great. If you want to make a cleaner tasting beer, minimize the amount of hot break being carried to the fermenter.

Before you get too fanatical about trub removal remember this: A little trub can be good. Trub is a yeast nutrient. Even so, if the yeast doesn't have enough oxygen in its cell walls it will try to break the trub down too much, creating some of the above flavor problems. To make sure yeast has adequate oxygen, you must oxygenate the wort once it is cool. There are numerous high- and low-tech ways of accomplishing this [see Martin Manning "For the Beginner" in *Zymurgy* Winter 1996 (Vol. 19, No. 5) for a discussion of aeration].



## Tricks for Tackling Trub

The goal is to eliminate the majority of the trub before it reaches your fermenter. The best way to do this is to maximize the hot and cold breaks and then transfer wort off the break material.

(1) Boil wort for at least one hour and, if you have the patience, for two hours. If you boil for two hours make your hop additions as the recipe dictates in the last hour. The long boil allows for a large amount of the trub to coagulate in the kettle.

(2) Use Irish moss as a protein coagulant in the kettle. Just rehydrate one teaspoon in hot water and add during the last 15 to 30 minutes of the boil. You'll see tiny solid chunks separating from the liquid and the liquid becoming clear.

(3) Chill wort quickly (within 15 to 45 minutes). If you are boiling a concentrated batch on your stove and then topping up the volume in the fermenter with water, you can still chill wort quickly and get a good cold break. One way to do this without any special equipment is as follows:

Fill your sink about six inches deep with ice and water. Set your boiling kettle full of concentrated wort in the sink. Gently stir with a sanitized spoon around the circumference of the pot, agitating the wort as little as possible. Monitor cooling by removing the pot from the sink and putting your hand on the outside. If you can comfortably hold it there for more than 10 seconds, it is cool enough. Put your brewpot back in the sink and start adding some of the cold water with which you plan to top up your fermenter. Fill the brewpot to about two inches from the top.

(4) Create a whirlpool in the brewpot to help settle out trub then siphon the wort off the trub (many breweries do this). The whirlpool causes a physical separation of heavier solid materials from the liquid. The solids tend to sink to the bottom and form a cone in the center of the container. To make a whirlpool, quickly stir the cooled wort with a sanitized spoon in large circular motions for 15 seconds. Once done, put the lid on the pot and let it sit undisturbed for 10 to 15 minutes to allow everything to settle out.

(5) Siphon the beer from brewpot to fermenter. Place the siphon along the outside

edge of the pot to minimize pickup of the trub in the center. Carefully tilt the pot to get the last of the wort, but stop when you start picking up trub. Allow the wort to splash into the fermenter to help aerate it. Top up the fermenter to five gallons and shake for a couple of minutes to further aerate it.

Even with the above methods you will get a little trub in your fermenter. Luckily, a little won't hurt your beer. With a little effort you may notice your beers are cleaner tasting and less hazy.

## Further Reading

Noonan, Gregory. *New Brewing Lager Beer*. Brewers Publications, 1996.

Papazian, Charlie. *The Home Brewer's Companion*. Avon Books, 1994.

*The Practical Brewer*, Master Brewers Association of the Americas, 1985.

**Jeff Pzena, a homebrewer since 1987, opened Somerville, Mass.'s Modern Brewer homebrew supply shop in 1990.**

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### Trub Separation

To reduce the amount of trub carried over from the kettle to fermenter, a) create a whirlpool in the kettle, b) let the trub settle into a cone and c) rack wort into a fermenter being careful not to disturb the cone of trub.



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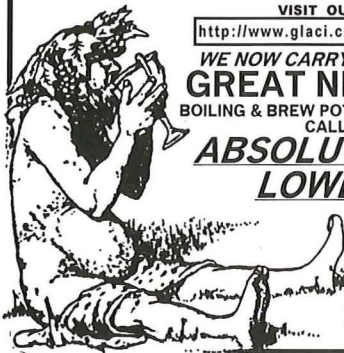
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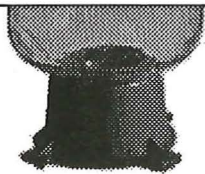
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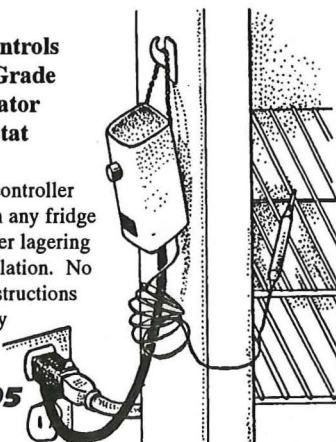
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# WINNERS

## C I R C L E

James Spence

**E**xtract brewers rejoice! The majority of brews in this installment of "Winners Circle" are extract based, giving you an opportunity to test, or retest, your skills with extract brewing. We've included two champion mead recipes. If you've never tried mead before you'll be surprised how straightforward the process can be — easier than making beer, in some cases.

Having some trouble brewing regularly? Try this: Brew a batch of beer on Saturday or Sunday. Let it ferment until the following Saturday or Sunday, brew another batch and pour your wort right on top of the yeast cake after racking the week-old batch. The yeast cake will deliver an amazingly short lag time, and you've brewed two weekends in a row! You can continue to do this for about four batches before you probably should throw the yeast cake away. Obviously, you need to brew similar styles of beer to use this method, but it really helps get you into a regular brewing routine, in addition to shortening lag times.

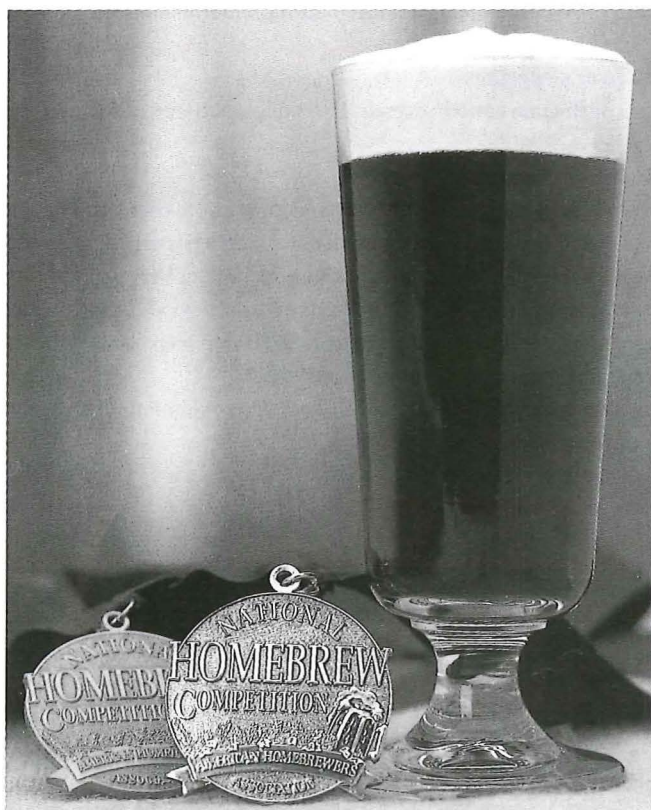


PHOTO BY ROBERT GOLDMAN  
ILLUSTRATIONS BY JOHN MARTIN

### BELGIAN AND FRENCH ALE



**SILVER MEDAL**  
**AHA 1996 NATIONAL HOMEBREW COMPETITION**  
**Susan and RJ Sparks**  
**Manchester, New Hampshire**  
**"RJ's Favorite"**  
**Belgian Strong Ale**

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

- 11 lb Coopers light malt extract (5 kg)
- 1 2/5 lb Alexander's pale malt extract (0.54 kg)
- 1 lb corn sugar (0.45 kg)
- 2 oz Chinook hop pellets, 12.5% alpha acid (57 g) (60 min.)
- Coopers dried ale yeast
- 3/4 cup corn sugar (177 mL) (to prime)

- Original specific gravity: not given
- Final specific gravity: not given
- Boiling time: 60 min.
- Primary fermentation: seven days at 62 degrees F (17 degrees C) in glass
- Age when judged (since bottling): seven months

#### Judges' comments

"Quite sweet and malty, big caramel flavor. Hop bitterness supports the sweetness. No hop flavor. Ethanol dries out the finish a bit. A beer full of character, intensely malty and sweet but not cloying. Nice job."

"Immense richness and complexity. Some alcohol burn in the finish with some cloying character. Plenty of flavor levels. Good balance at several levels."



## MILD AND BROWN ALE



### BRONZE MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

**Matt Mead, Errol Brown,  
Dan Ricker and Al Mead  
Chicago, Illinois  
"MBA (Matty Brown Ale)"  
American Brown**



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

- 4 lb Alexander's brown ale malt extract (1.8 kg)
- 3 lb light dried malt extract (1.4 kg)
- 1/2 lb Belgian Special "B" caramel malt (0.23 kg)
- 1 oz Northern Brewer hop pellets, 9.5% alpha acid (28.4 g) (60 min.)
- 2 oz Cascade hop pellets, 4.6% alpha acid (57 g) (60 min.)
- 1/2 oz Cascade hop pellets, 4.6% alpha acid (14 g) (15 min.)
- 1/2 oz Cascade hop pellets, 4.6% alpha acid (14 g) (two min.)
- Wyeast No. 1098 British ale liquid yeast culture
- 3/4 cup corn sugar (177 mL) (to prime)

- Original specific gravity: 1.040
- Final specific gravity: 1.019
- Boiling time: 60 min.
- Primary fermentation: 15 days at 70 degrees F (21 degrees C) in glass
- Age when judged (since bottling): five months

### Brewers' specifics

Steep grains at 155 degrees F (68 degrees C) for 45 minutes.

### Judges' comments

"Sweet followed by bitter. Beer is in balance. The hops linger, but don't overwhelm."

"Sweet. Not as much hop as aroma suggested. Slight metallic taste."

"High alcohol. Bitterness low for style. Medium hop flavor, mild diacetyl. Bittering hops appear late."

## ENGLISH BITTER



### SILVER MEDAL

AHA 1996 NATIONAL HOMEBREW COMPETITION

**Stephen Rose  
Newton, Massachusetts  
"Logsplitter Bitter"  
English Best Bitter**



### Ingredients for 3 U.S. gal (11.4 L)

- 2 lb Munton and Fison light malt extract syrup (0.9 kg)
- 1 lb Klages two-row pale malt (0.45 kg)
- 1 lb English two-row mild ale malt (0.45 kg)
- 1 lb American six-row pale malt (0.45 kg)
- 2 oz 38 °L English crystal malt (57 g)
- 1/2 oz Fuggles hop plugs, 4.1% alpha acid (14 g) (60 min.)
- 1/2 oz Kent Goldings hop plugs, 5.5% alpha acid (14 g) (60 min.)
- 1 oz Kent Goldings hop plugs, 5.5% alpha acid (28 g) (40 min.)
- Wyeast No. 1028 London ale liquid yeast culture
- 1/2 cup light dry malt extract (118 mL) (to prime)

- Original specific gravity: 1.046
- Final specific gravity: 1.011
- Boiling time: 65 min.
- Primary fermentation: nine days in plastic
- Secondary fermentation: six days in glass
- Age when judged (since bottling): four months

### Brewer's specifics

Mash grains at 155 degrees F (68 degrees C) for 75 minutes.

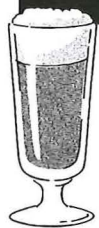
### Judges' comments

"Carbonation is too high, which detracts from beer's flavor. Flavor profile is very good for a special bitter. Could possibly be improved by lowering carbonation and avoiding oxidation. Very good bitter."

"Strong carbonation. Malt sweetness very good for style. Malt flavor is strong but not out of style. Slight hop increase would balance more fully. Keep up the good work."

"Balance there. Aftertaste clean. Slight oxidation flavor is the only flaw."





## BOCK



**SILVER MEDAL**  
**AHA 1996 NATIONAL HOMEBREW COMPETITION**  
**Steve Rice**  
**Cudahy, Wisconsin**  
**Traditional Bock**

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

- 11 1/2 lb 5 to 6 °L Durst Munich malt (5.2 kg)
  - 2 lb 1 to 2 °L Durst Pils malt (0.9 kg)
  - 1 lb 8 to 10 °L Durst helles malt (0.23 kg)
  - 1/2 lb 80 to 90 °L Durst dunkel malt (0.23 kg)
  - 2 oz 375 to 450 °L DeWolf-Cosyns chocolate malt (57 g)
  - 1 1/4 oz U.S. Perle hop pellets, 8.1% alpha acid (35 g) (60 min.)
  - 3/4 oz Hallertauer hop pellets, 2.6% alpha acid (21.3 g) (20 min.)
  - 3/4 oz Saaz hop pellets, 3.5% alpha acid (21.3 g) (20 min.)
- Yeast Lab L33 Munich yeast culture  
 force carbonate in keg

- Original specific gravity: 1.070
- Final specific gravity: 1.022
- Boiling time: 90 min.
- Primary fermentation: two weeks at 50 degrees F (10 degrees C) in glass
- Secondary fermentation: two weeks at 50 degrees F (10 degrees C) in glass
- Tertiary fermentation: 60 days at 32 degrees F (10 degrees C) in stainless steel
- Age when judged (since bottling): three months

### Brewer's specifics

Mash grains at 122 degrees F (50 degrees C) for 45 minutes. Raise to 158 degrees F (70 degrees C) for 60 minutes. Raise to 170 degrees F (77 degrees C) for 10 minutes.

### Judges' comments

"Good conditioning. A little heavy in the caramel flavor. Needs more malt flavor — not a lot, but a little would help tremendously. Very slight oxidation here."

"Clean flavor. Appropriate low hop bitterness. Could use more Munich malt flavor. Balance is good. Clean, drinkable beer with no faults, just needs more true malt flavor."

"Malty flavor dominates. Sweetness is evident and a little too high. The bitterness is in the background at medium levels. Very good beer. The sweetness should be a malty sweetness, not a sugary sweetness."



## HERB & SPICE BEER



**SILVER MEDAL**  
**AHA 1996 NATIONAL HOMEBREW COMPETITION**  
**Harrison Gibbs and Roland Armstorff**  
**Los Angeles, California**  
**"Holiday Red"**  
**Herb and Spice Beer**

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

- 7 lb Briess light dry malt extract (3.2 kg)
  - 1/2 lb honey (0.23 kg)
  - 1/2 lb 40 °L crystal malt (0.23 kg)
  - 4 oz CaraPils malt (113 g)
  - 2 oz chocolate malt (57 g)
  - 1 oz Cascade hop pellets, 5.1% alpha acid (28 g) (70 min.)
  - 1/2 oz Czech Saaz hop pellets, 3.7% alpha acid (14 g) (40 min.)
  - 1/2 oz Czech Saaz hop pellets, 3.7% alpha acid (14 g) (finish)
  - 5 sticks cinnamon (15 min.)
  - 2 oz fresh grated ginger root (57 g) (15 min.)
  - 1/2 tsp ground nutmeg (2.5 mL) (15 min.)
  - 1 tsp whole cloves (5 mL) (15 min.)
  - 1 tbsp ground fresh coriander (15 mL) (15 min.)
  - 2 oz dried bitter orange peel (57 g) (15 min.)
  - 2 tsp Irish moss (10 mL) (15 min.)
- Wyeast No. 1028 London ale liquid yeast culture
- 3/4 cup corn sugar (117 mL) (to prime)

- Original specific gravity: 1.060
- Final specific gravity: 1.021
- Boiling time: 70 min.
- Primary fermentation: eight days at 60 degrees F (16 degrees C) in glass
- Secondary fermentation: 16 days at 60 degrees F (16 degrees C) in glass
- Age when judged (since bottling): six months

### Brewers' specifics

Steep grains for 20 minutes.

### Judges' comments

"Smooth sweet pie — pumpkin or sweet potato. Dessert beer. Very nice beer."

"Pumpkin pie, nice balance of spices. I can taste everything listed except orange. I wonder how much bitterness comes from bitter orange peel or if it is the hops. Nice beer."

"Full malt body with the spice bitterness overpowering the hops and spice balance. Astringent spice aftertaste. Cloves really come through especially."



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**"Old Faithful"**  
**Sparkling Traditional Mead**

Ingredients for 3 U.S. gal (11.4 L)

- 9 lb honey (4.1 kg)
- Epernay yeast culture
- force carbonate

- Original specific gravity: 1.087
- Final specific gravity: 0.997
- Boiling time: 75 min.
- Primary fermentation: 10 days at 72 degrees F (22 degrees C) in glass
- Secondary fermentation: 10 days at 72 degrees F (22 degrees C) in glass
- Age when judged (since bottling): six months

### Judges' comments

"Bright, clear, pale gold. Well carbonated. Nice dry finish. A trace of apple? Malic acid?"

"Great bubbles, great color and clarity. Lots of head. More dry than medium. Slight honey character — would expect more for a medium. Good acid balance. Overall just seems too light."

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**"Strawberry Kiss"**  
**Still Melomel**

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

- 15 lb wildflower/clover honey (6.8 kg)
- 10 1/2 lb strawberries (4.8 kg)
- 2 tsp G.W. Kent yeast nutrient (10 mL)
- 1 tsp G.W. Kent acid blend (5 mL)
- Yeast Lab sweet mead liquid yeast culture

- Original specific gravity: not available
- Final specific gravity: 1.021
- Boiling time: none
- Primary fermentation: three weeks at 65 degrees F (18 degrees C) in plastic
- Secondary fermentation: 1 1/2 years at 65 degrees F (18 degrees C) in glass
- Age when judged (since bottling): 1 1/2 months

### Brewers' specifics

Heat water to boiling, add honey, turn off heat. Add acid blend and yeast nutrient. Let must stand 10 minutes. Crush strawberries in sanitized plastic primary, rack must onto crushed fruit. Temperature should be between 165 and 175 degrees F (74 and 79 degrees C) for 20 minutes to pasteurize fruit. Reduce temperature with wort chiller to about 70 degrees F (21 degrees C) then pitch yeast starter and wait two years.

### Judges' comments

"Fresh honey and fruit characteristics. Decent blend of both. No flaws."

"Big fruit flavor agrees with aroma. Tannin acidity could be a little higher for balance. Honey flavor is clearly apparent, but character is overwhelmingly fruit. Very nice product — any changes I could suggest might wreck it. Perhaps a lower fermentation temperature to reduce the low level of higher alcohols."

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."



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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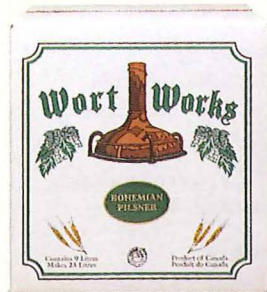
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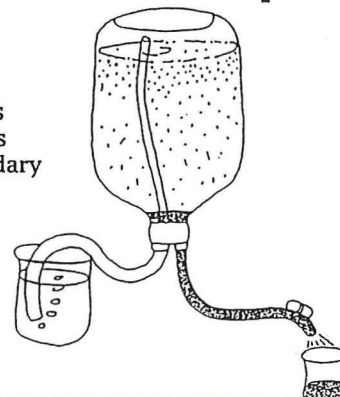
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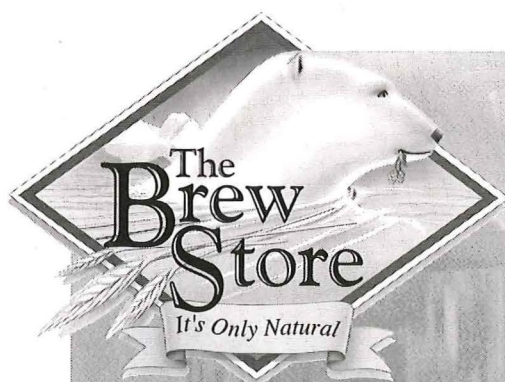
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# WORLD OF WORTS

Charlie Papazian

## High Boots Turned Down Low Münchner Smoked Lager

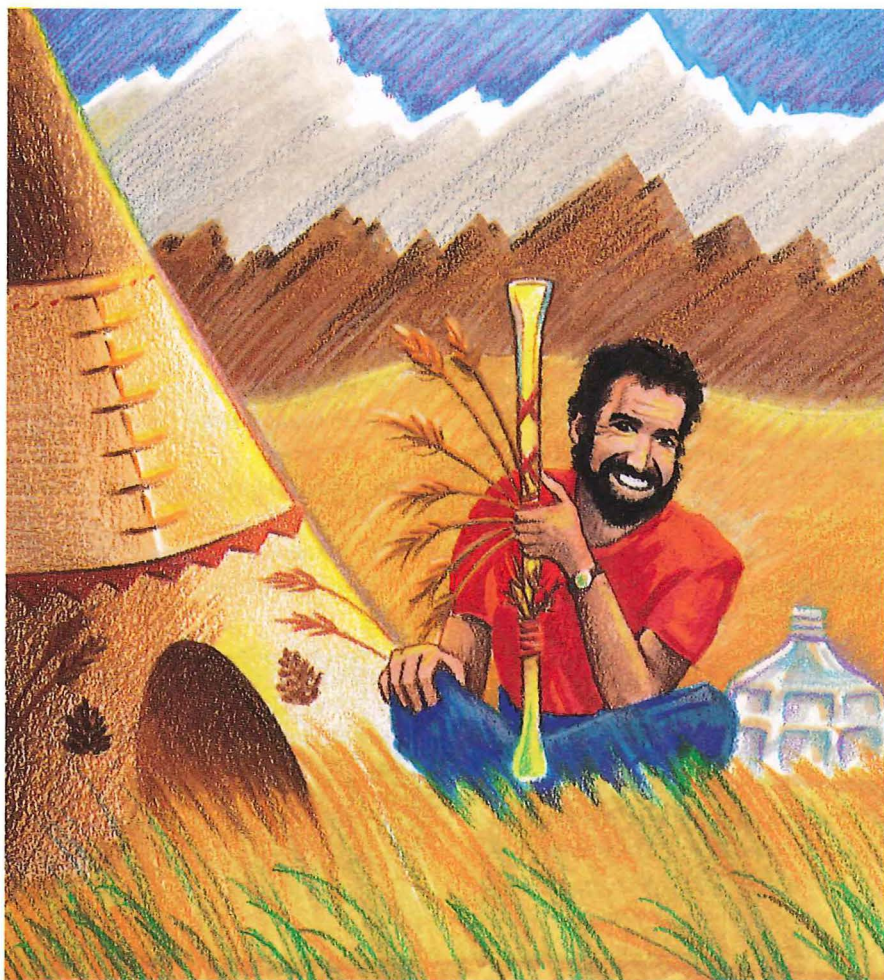
I hadn't brewed beer for more than five months. That's a situation I hadn't been in for the 26 years I've been brewing beer.

When I meet old friends by chance on the streets the conversation invariably comes around to, "Whatcha doin' these days? Are you still brewing?" I have always been able to say yes and, up until five months ago, was able to say, "Yeah, I brew 12 to 15 times a year." Many of the friends I knew back in the 70s and 80s don't brew anymore. Some do, but some don't, and the reason they give is, "Well, I began doing this or that and I just don't have the time any longer. I still have the stuff. I might pick it up again. It sure was fun."

I did have a good reason for my five-month nonbrewing sabbatical. When I moved to a new house I had my hands full. The first priority was to weatherize a detached garage and build a walk-in cooler to store my stash of homemade beer, mead and wine. The house I moved from had a great basement for such things, but now I have no basement and no area to store the volume of brew I've accumulated over the years. So my priorities went elsewhere.

I did prepare for the move. I had a pretty good stash of homebrew to get me through the summer, but the brewery/workshop and walk-in cooler were built and waiting for the inaugural brew. I really couldn't say I didn't have the time. I did. It got me thinking of all those occasions when I heard it said, "I don't have the time ..."

No, I don't think that's ever the reason. We all have the time and we all have the space to brew. What we don't have is the



stake in establishing a priority for brewing during certain periods of our lives. There's nothing wrong with that. It's OK to put aside homebrewing for awhile and realize you do have the time but your priorities have been rearranged. That period for some is indefinite, for others brief. Once you acknowledge

this it's a lot easier to come back to homebrewing and feel guiltless. (Especially if you at least stay in touch by receiving *Zymurgy*.)

I've filled my time by getting acquainted with my new surroundings. The adventure intrigues me. I live on a creek that drains from the mountains about a half mile to the



west. To get to the other side of my land it's necessary to wade through the moving water. There I discovered a set of tipi poles that had walked themselves to their place. The walking poles inspired me to follow through and erect a tipi on the very spot American Indians had been some 150 years ago. I'm quite sure of that.

I'd never done anything like this before. There's a book about tipis, but it wasn't so new, having been written in 1957. From there I figured it all out. It was a slow and endearing process. Just the other day we had an inaugural ceremony during the full moon. The Indians used a sacred pipe for such occasions, but lacking a pipe we shared the spirit of the moment with my own equivalent. It was 1996. I erected the tipi. I brought my friends together. We filled a yard of ale with five-year-old Gnarly Roots Barley Wine and eight-year-old vintage Prickly Pear Cactus Fruit Mead and passed the vessel clockwise (with the motion of the sun, moon and stars) around our small circle. In retrospect I can't think of anything more appropriate. Fire, air, water, earth, sun and time all woven into the process of making beer, portraying personality and spirit.

What had been missed was the opportunity to fill the "pipe," the yard glass, with the beer that provided me sustenance during my move. It would have been perfect for the tipi — light smoke-flavored lager I had made three (yes three) years ago and kept kegged and refrigerated all that time. For some reason I had ignored it, but after all that time it had not shown any indication of age or oxidation. In fact, it was at its peak. It was better than it had ever been. Curiously this batch was not alcoholically strong or hoppy, so there was nothing special done to provide long life. People often ask me how long homebrew lasts. This batch outlasted all the theory and discussion any homebrewer ever had. My theory: If you're a homebrewer and you've brewed a clean batch and you're not moving your beer all over the country (as commercial brewers do) it can far outlast all theoretical discussions about old beer, particularly if it is stored cold in a keg.

High Boots Turned Down Low Münchner Smoked Lager will be one of my all-time classics. The amount of smoked malt is very low compared to a Bamberg German-style rauch-

bier. In fact, when I first formulated the recipe I sought only a subtle suggestion of smoked flavor coupled with a high malt profile. Hops are soft, subtle but balanced. Brewing with a lager yeast at low temperatures contributes to a smoothness that evolves nicely with cold aging.

No, you don't have to wait three years, move to a new house or build a tipi to enjoy this intriguing full-flavored Münchner-style golden lager. Give it three months from brew day and you won't be disappointed. The only thing you may begin to wonder about is whether they were "High Boots Turned Down Low," or simply "Low Boots." Don't let your knickers get wet crossing your stream, but take a shot at this beer using German and European-grown "noble-type" hops and a good clean, active lager yeast.

I'm nearly out of homebrew. Feeling a bit more settled it won't be long before my first batch evolves from my new "brewery." I'll tell you about it another time. It feels like I'm starting all over again in a lot of ways. Meantime, let's cut the shuck and jive and get on with the recipe.

#### Mash-extract recipe for 5 gal (19 L)

##### For the mash:

- 3 1/2 lb Munich malt (1.6 kg)
- 1/2 lb German rauch (smoked) malt (0.23 kg)
- 1/4 lb victory, biscuit or other aromatic malt (113 g)
- 1/4 lb German light crystal (Carapils or dextrin malt) (113 g)

#### Add to the mash runoff:

- 4 lb extra light dried malt extract (1.8 kg) or 5 lb light German malt extract syrup (2.27 kg)

#### And boil with hops:

- 5 Homebrew Bittering Units (137 MBUs) for first addition (I used European Hallertauer pellets)
- 4 Homebrew Bittering Units (109 MBUs) for second addition (I used European Hallertauer Hersbrucker whole hops)
- 3 Homebrew Bittering Units (83 MBUs) for third addition (I used half European Hallertauer Hersbrucker and half Czech Saaz)
- 3/4 oz American Tettnanger whole hops for aroma (21 g) (finish)
- 1/4 tsp Irish moss (1.2 mL)
- 3/4 cup corn sugar (177 mL) (to prime)
- lager yeast
- Original specific gravity: 1.046 to 1.050 (11.5 to 12.5 °B)
- Final specific gravity: 1.012 to 1.016 (3 to 4 °B)
- IBUs: 28 to 32

Use a step-infusion mash technique. Add 4 1/2 quarts (4.26 L) of 140-degree-F (60-degree-C) water to the crushed grain, stir, stabilize and hold the temperature at 132 degrees F (56 degrees C) for 30 minutes. Add 2 1/2 quarts (2.4 L) of boiling water and add

**HOME BREW 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:

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

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



heat to bring temperature up to 152 degrees F (67 degrees C) and hold for about 30 minutes.

After conversion, raise temperature to 167 degrees F (75 degrees C), laut and sparge with 2 gallons (7.6 L) of 170-degree-F (77-degree-C) water. Collect about 2 to 2 1/2 gallons (7.6 to 9.5 L) of runoff, add the malt extract and first addition of hops and bring to a full and vigorous boil.

Boil for 90 minutes. When 30 minutes remain add the second addition of hops. When 15 minutes remain add the third addition of hops and Irish moss. After a total wort boil of 90 minutes turn off the heat and add the aroma hops and let stand for two minutes. Strain into a sanitized fermenter to which you've added 1 1/2 gallons (5.7 L) of water. It helps to prechill (to 33 degrees F or 1 degree C) the water added to the fermenter rather than simply adding warmer tap water.

Bitterness of about 28 to 32 IBUs was calculated for this recipe by making the following 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 90 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 between 50 and 55 degrees F (10 and 13 degrees C) and lager between 45 and 50 degrees F (7 and 10 degrees C) for one month.

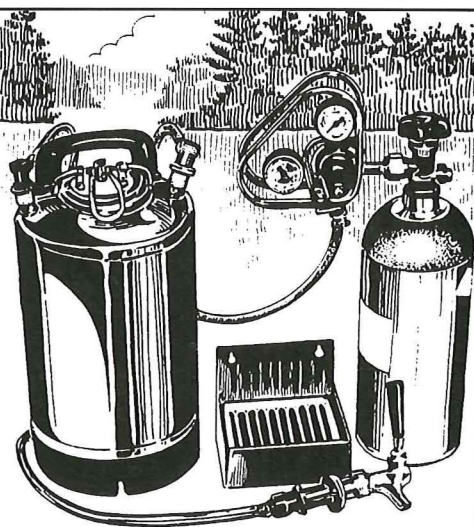
Prime with sugar and bottle when fermentation is complete. If kegging, let the beer condition for about two weeks at cellar temperatures between 60 and 70 degrees F (15 and 21 degrees C) then store at 40 to 45 degrees F (5 and 7 degrees C) indefinitely and while serving.

If you see someone wading in the water, don't assume they have low boots if their knickers are wet. They may be high boots turned down low.

Charlie Papazian is president of the Association of Brewers and author of *The New Complete Joy of Home Brewing* (Avon, 1984 and 1991) and *The Home Brewer's Companion* (Avon, 1994).



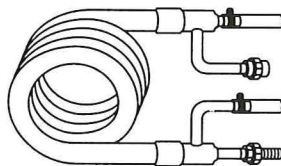
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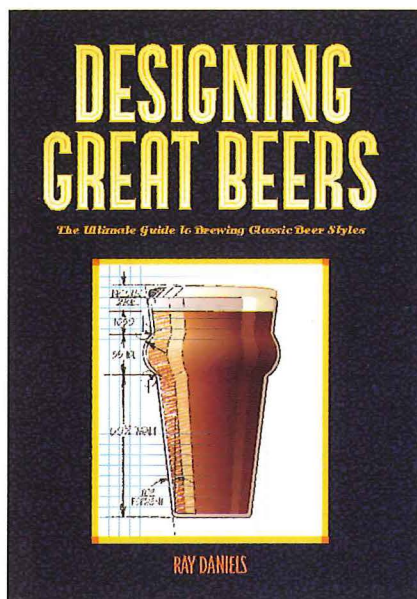
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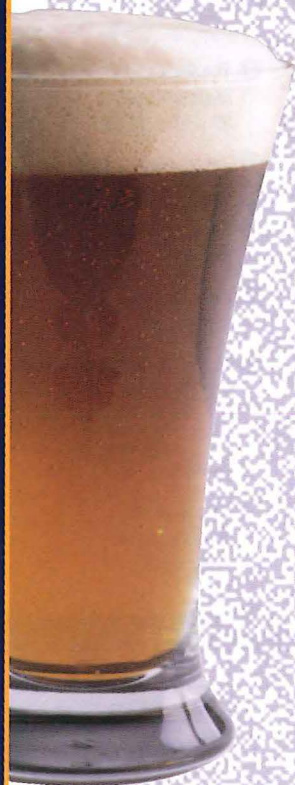


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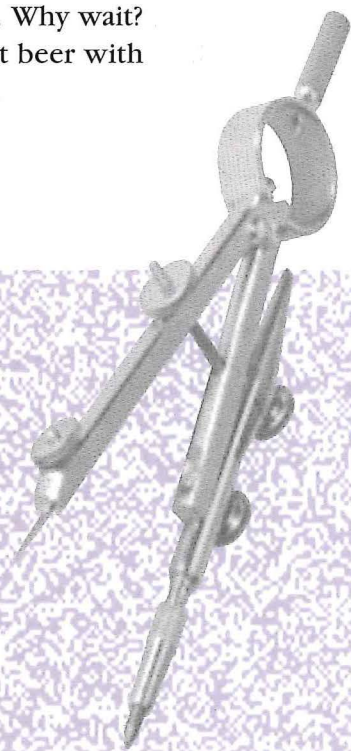
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— Greg Noonan, owner and brewmaster at the Vermont Pub and Brewery, founder of the Seven Barrel Brewery, and author of *New Brewing Lager Beer*, *Scotch Ale*, and the *Seven Barrel Brewery Brewers' Handbook*.



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Professor Surfeit

# DEAR

P R O F E S S O R

## Remembering Ballantine

Dear Professor,

A short reference to Ballantine Beer in Charlie Papazian's *Home Brewer's Companion* (Avon, 1994) brought back a fond memory. Thirty or more years ago, when I lived on the east coast, Ballantine XXX Ale was one of my favorite libations. I think it is still brewed although no longer by P. Ballantine and Sons of Newark, N.J. "Brewed with Brewer's Gold," it was. There are few references to this brew that I have seen, none of them detailed. I think Michael Jackson refers to it as a "golden," as opposed to the ubiquitous "cream," ale.

I remember it as uniquely flavored gold-colored ale. I hesitate to try to describe its flavor because of the passage of time and my general unfamiliarity with the terminology, but "fruity" and "malty" come to mind. I know it did not taste like Genesee Cream Ale or Carling Red Cap. Are you at all familiar with this brew? Dumb question, eh professor? Where would a person start in an attempt to capture the unique flavor of this fine ale in a homebrew recipe?

Enjoying homebrew as we speak,  
Ed Kendall  
FPO AP

Dear Ed,

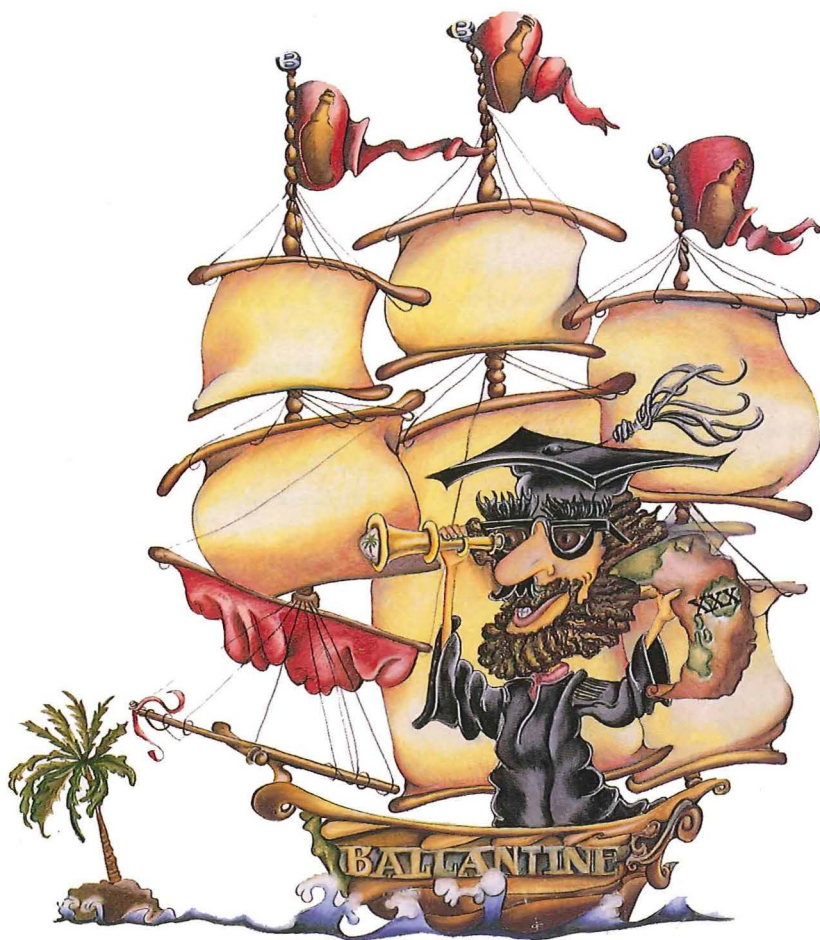
*Yes, my memories of Ballantine are fond but distant. Where to begin? I remember hoppy with a nice bitter bite. Beery. What does that mean? I'm not quite sure but it defined beer for me between the ages of 5 and 18. I doubt it was all malt. I do seem to*

*recall that it had quite a fruitiness to it; very alelike. If I ever come across some historical reference to how it was brewed back then I'll let you know.*

*Ab Ballantine and the three-ring sign  
Those were days bygone, by golly,  
The Professor, Hb.D.*

Who better to ask than a Ballantine brewer. Here's what Joseph Kurtz had to share about India pale ale. — Ed.

The evolution of the basic recipe for IPA seems to have been based primarily on the limitations of methods used to protect the integrity of the product in transit. The unrecorded taste or flavor by Gunga Din's British contemporaries quaffing their newly arrived ale from "home" in the shadows of the Taj Mahal can only be imagined by our sophisticated present-day taste evaluators. Suffice it to say that the flavor profile of the product made according to the following recipe to quench the thirst of New England





and other distant applicators is still preferred by some ale lovers. This recipe was and is basic to the brewing of IPA by the Ballantine Brewing Co. (and its successors) and other breweries, before and after the repeal of Prohibition.

This IPA formula has been reduced from a 420-barrel brew.

#### Ingredients for 5 gal (19 L)

- 6 7/10 lb pale malt (3 kg)
- 7/10 lb caramel malt (317 g)
- 1 9/10 lb corn grits (0.86 kg)
- 2 9/10 lb invert or corn syrup (1.3 kg)
- 4/5 oz Bullion or Tettnanger hops (22 g) (bitterness)
- 1 1/5 oz Cluster hops (34 g) (flavor)
- 1/5 oz Saaz hops (4 g) (aroma)

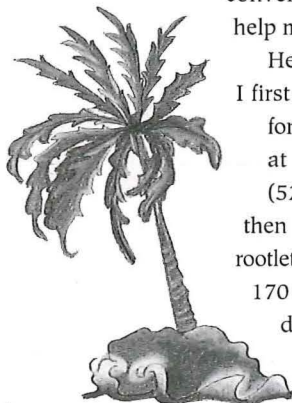
Joseph D. Kurtz is a 37-year veteran of the brewing industry. Retired since 1984, Joseph's experience ranges from director of brewing at Pittsburgh Brewing Co. to brewmaster at Frankenmuth Brewing Co. and some 13 other brewing and plant management positions.

## Home-grown Grist

Dear Professor,

I have a problem: namely the starch/sugar conversion. Being a farmer, I raise my own barley. This past season we raised the Baroness variety which is a European malting barley that has not caught on in this country. I decided to sprout, roast and brew using just this barley. The sprouting went very well with almost a 95 percent sprouting. From there things went downhill. I am of the opinion that the way I dried and roasted the grain is why I did not get the conversion. Can you help me out?

Here is what I did: I first dried the grain for about 26 hours at 125 degrees F (52 degrees C), then removed all the rootlets and roasted at 170 degrees F (77 degrees C) for four hours. I'm not sure, but I



don't think that worked. What should I have done? I am trying to brew a nice golden beer with the head retention and body of darker beers. I got the body and the head retention down pat but the conversion and the roasting leave me hanging. The recipe I used is on page 270 of Charlie Papazian's book, *The Complete Joy of Home Brewing* (Avon, 1984). I substituted the five pounds (2.27 kg) of six-row barley with six pounds (2.72 kg) of two-row Baroness.

While I am on the subject, should rice be cracked before cooking or just used in whole form?

Larry L. O'Connell  
Kalispell, Montana

Dear Larry,

Once you dried the malt at 125 degrees F (52 degrees C) you should have stopped there. The high-temperature roast at 170 degrees F (77 degrees C) probably killed off a lot of enzymes. If your malt was truly dried after 26 hours at 125 degrees F (52 degrees C), you probably had some mighty fine malt. Next time only toast a small portion to use as color and flavor in amounts of 5 to 20 percent of your total grain bill. My guess is that the 170-degree-F (77-degree-C) malting turned the grain kind of red inside. It was probably great malt, but not to be used exclusively; rather in combination with pale malts.

Don't give up. And about that rice. No need to crush the rice before gelatinizing, which you need to do before adding it to your mash (unless you are using flaked rice). See the *Zymurgy Special Issue 1995* (Vol. 18, No. 4) for instructions on gelatinization and using flaked adjuncts.

Keep high country malting,  
The Professor, Hb.D.

## Yeast Effects

Dear Professor,

I'm curious about whether you've done any research on the consequences of brewing a batch of all-barley-malt homebrew using a Bavarian wheat yeast strain. Would using such a yeast with an all-barley recipe,

instead of malted wheat barley, still produce the banana and clovelike esters and phenolics typically associated with traditional weizen beers?

Sincerely,  
Richard Biegaj  
Berwyn, Illinois

Dear Richard,

The peculiar banana esters and clovelike "phenolics" associated with Bavarian weizen comes from the byproducts of the yeast during fermentation. The wheat may accent these qualities to some extent, but you're going to get that character with an all-barley malt or an all-rye malt or an all-oat malt brew.

Go figure why it hasn't been done yet,  
The Professor, Hb.D.

## Lager Appeal

Dear Professor,

I have been pleased with the vast majority of my brews (all sorts of ales) but continue to look for something light — a summertime "lawnmower" beer. I believe a lager would fit the bill, but because my time and space are limited I really have no way at this time of getting a second refrigerator for real lagering.

I have been told that there are ways to make ales that have many of the characteristics of lagers. Unfortunately, no one has been able to tell me what the ways are! I know some recipes are better for producing a light beer than others. Are there lager yeasts that will work in the 68- to 70-degree-F (20- to 21-degree-C) range? What else can you suggest to help me produce a light, lager-style brew without temperature restrictions?

You have provided a great deal of good advice in your articles. I hope you can give me some suggestions. Your help is appreciated.

Sincerely,  
Hoyt Allen  
Rockwall, Texas

Dear Hoyt,

Go for it. You can't really go wrong and within a matter of four or five batches you will



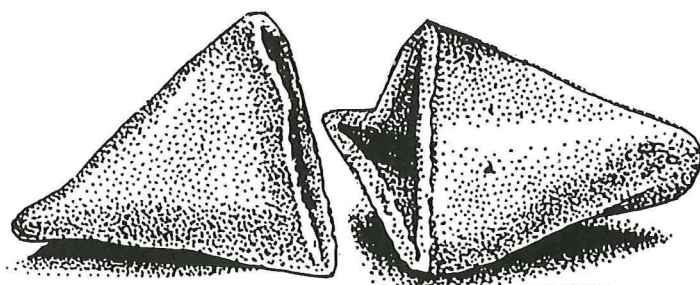
have hit on the lager yeast you think best for brewing "lagers" at ale temperatures. It's all a matter of preference, but in the meantime use lager-type hops (if there really is such a thing) like Hallertauer and Saaz. You might even try an altbier yeast, which is an ale yeast intended to be secondary lagered at colder temperatures. Surely you can fit a few bottles of bottle-conditioning brew in your fridge.

I have done side-by-side experiments with the same yeast used in two different five-gallon (19-L) batches, both primary

fermented at about 60 degrees F (16 degrees C), but one lagered at 38 degrees F (3 degrees C) while the other continued at 60 degrees F (16 degrees C). There was a difference, but hey, who's gonna tell?

Try those yeasts,  
The Professor, Hb.D.

Send your homebrew-related questions to "Dear Professor,"  
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**N**ew product descriptions are submitted by manufacturers and distributors and are printed here for reader information. These claims are made by manufacturers and/or distributors and do not imply testing by Zymurgy. For more information call (303) 447-0816 for Linda Starck (ext. 109), or Christopher Lowenstein (ext. 108).

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Manufacturer's suggested retail price is \$19.95 plus \$3.50 shipping and handling.

For information or to order contact Atwood Brew Products, PO Box 171, Leverett, MA 01054; (413) 548-9948; 104743.1350@compuserve.com; <http://ourworld.compuserve.com/homepages/fermentations>.

## Gold Yeast and Premium Beer Kits



Muntons announces the release of Gold Yeast, previously available only with Gold Kits, but now sold separately by homebrew suppliers.

Also available from Muntons is the new Premium range of beer kits providing instruction and technical information on each. The more sophisticated homebrewer may use the can contents as a building block in individual recipe formulations. The comprehensive leaflet under the cap gives alternative brewing options including two-stage fermentation, a yeast

rehydration technique and details improvements that can be achieved by using Spraymalt™ additions to convert the kit into an all-malt brew. With this information homebrewers can adapt the recipes to their own formulations. The Premium range includes Midland Mild Ale, a dark sweet beer; Barley Wine; and Scottish Style Heavy Ale, a well-balanced dark bitter, hoppy yet malty.

The manufacturer's suggested retail price is \$1.29 for the Gold Yeast and \$11.95 for the Premium range of beer kits. Check with your local homebrew supply store for the new Muntons Premium range.

## Stainless-Steel Thermometer

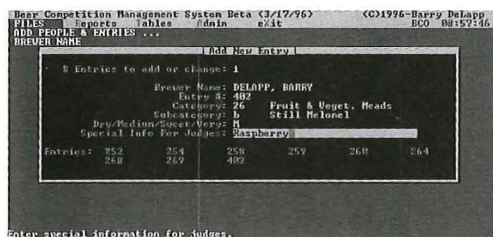


New from William's Brewing is the Brewers Edge Thermometer combining the probe length of a glass thermometer with the durability and convenience of a stainless-steel dial thermometer. The 32- to 220-degree-F range is ideal for both mashing and fermenting and a calibration nut is included for fine tuning at any desired range. A stainless-steel pot clip is included for attachment to the edge of a mash tun.

Manufacturer's suggested retail price is \$15.95. F.H. Steinbart is distributing the unit to retail shops; check with your local store.



## Beer Competition Organizer System

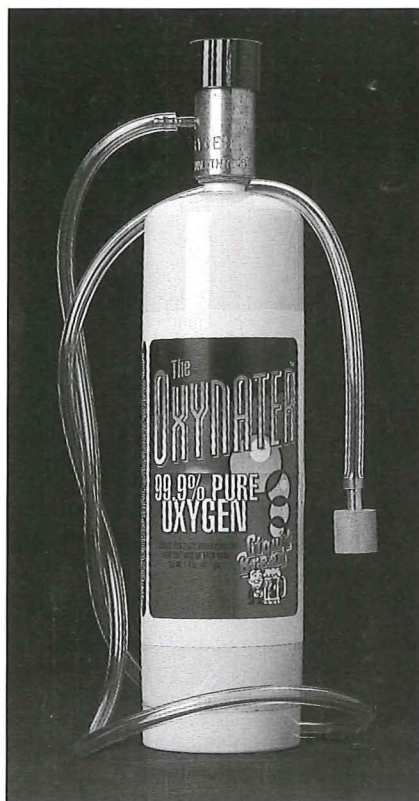


Beer Competition Organizer software was developed to simplify the task of running a homebrew competition. The system can be used to organize brewers, entry forms, entry bottles, judges, scores assigned by judges, prizes awarded and the return of score sheets to brewers. The program enables the user to print peel-off entry number labels to apply to bottles and entry forms, record brewers names and addresses, record the entries for each brewer, collapse categories and subcategories into tables for judging and awarding prizes, split tables into flights for judging, print table signs, print judge assignment matrix for up to three scheduled rounds of judging, record judge assignments, scores and prizes, print a report of winners and results and print mailing labels for all homebrewers who entered for returning score sheets.

The software program is being offered to all organizers of homebrew competitions for \$25 to cover materials, shipping and handling. For information or to order contact Barry DeLapp, 9 Airdrie Court, Paoli, PA 19301; (610) 644-0224; barry@pictorl.com.

## Oxynater™

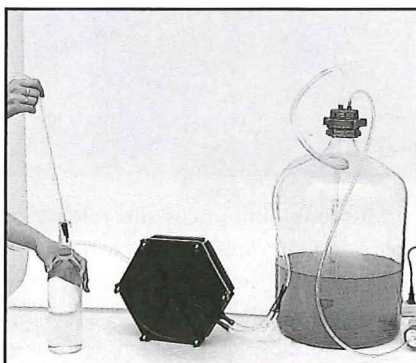
Liquid Bread announces the Oxynater, a 1.1-cubic-foot disposable tank filled with 99.9 percent pure oxygen. It is the foundation of a system using a regulator, hose and a 316 stainless-steel diffusion stone. Only two 15-second bursts oxygenates a five- to six-gallon batch. The tank is good for 15 to 20 batches of homebrew. By adding 99.9 percent oxygen with the Oxynater, you will kick start fermentation, increasing the efficiency of your yeast. The Oxynater system includes oxygen tank, reg-



ulator, stainless-steel diffusion stone, 3 1/2 foot hose and instructions.

Manufacturer's suggested retail price is \$49.95. For information or to order contact Liquid Bread Inc., 1007 La Quinta Dr., Orlando, FL 32809; (407) 888-3533; FAX (407) 888-3531.

## Transfer, Filter, Bottle

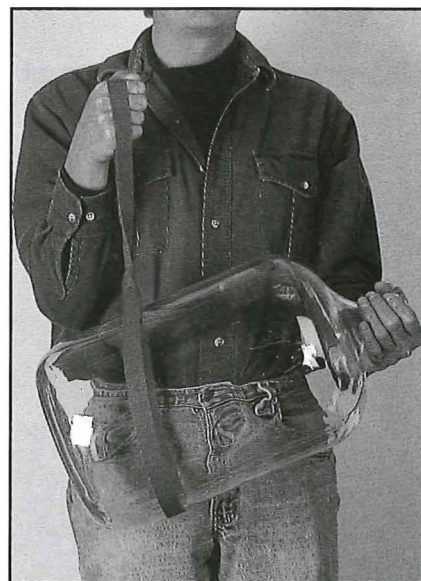


The Vintage Shop introduces the 3-in-1 Combination Set capable of transferring (siphoning), filtering and bottling. The brewer can transfer from carboy to carboy then in one step filter and bottle directly from a carboy. The 3-in-1 uses an electric

air pump instead of hand pumps or tanks and can be used with most glass and plastic carboys. This set comes complete with all necessary hardware including electric pump, carboy fitting set, adjustable siphon tube, wine filter, bottle filler, shut-off clamp and all hoses. Carboy and filter pads are not included.

Manufacturer's suggested retail price is \$99.99. For information or to order contact The Vintage Shop, #17-8333 130th St., Surrey, BC, Canada V3W 7X4; (604) 590-1911; FAX (604) 572-0009.

## Carboy Strap

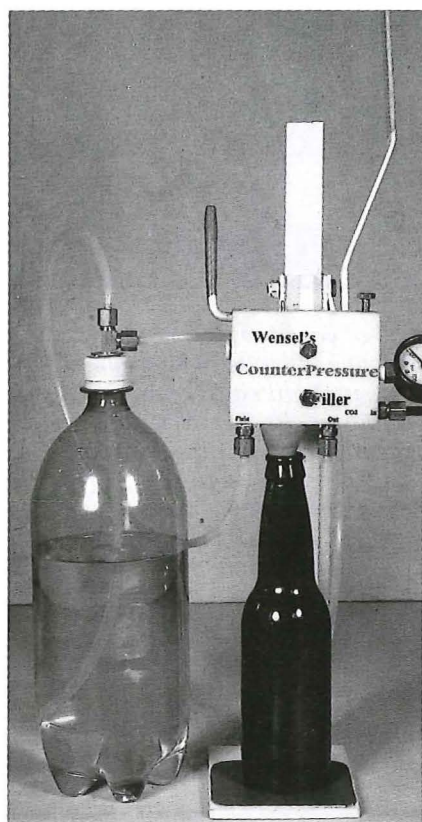


Strap-It introduces a specially designed strap to assist the homebrewer with the often dangerous task of pouring cleaning solution from a glass fermenter. Strap-It is designed for use with a carboy handle. The strap is made of heavy cotton webbing reinforced with nylon stitching for long wear when exposed to chlorine cleaners. When used correctly the risk of glass breakage is reduced.

The manufacturer's suggested retail price is \$9.95 and includes shipping and handling. For information or to order contact Strap-It, 1118 Beechwood Ave., Lansdale, PA 19446; or Keystone Homebrew Supply, Attn: Jason Harris, 779 Bethlehem Pike, Montgomeryville, PA 18936; (215) 855-0100.



## Counterpressure Bottle Filler



Wensel Enterprises introduces a user-friendly counterpressure bottle filler using single-lever filling. This 2 1/2-pound aluminum unit is slightly smaller than the average table-top bottle capper. Different bottle heights are adjusted with the T handle on the back of the unit. Once the unit is adjusted, a toggle locks the bottle in place. The single lever purges the bottle with carbon dioxide and then fills it under counterpressure. The filling rate is controlled by a needle valve. The filling and gas valves are constructed of Delrin plastic with stainless-steel stems and are seated against neoprene O rings with stainless-steel springs. Ports are available for easy cleaning, and the unit comes with attachments for PET bottles.

Manufacturer's suggested retail price is \$249.95. For information or to order contact Wensel Enterprises, 19100 S.W. 304th St., Homestead, FL 33030; (305) 245-9779; FAX (305) 248-6453.

Compiled by Christopher Lowenstein, advertising assistant.



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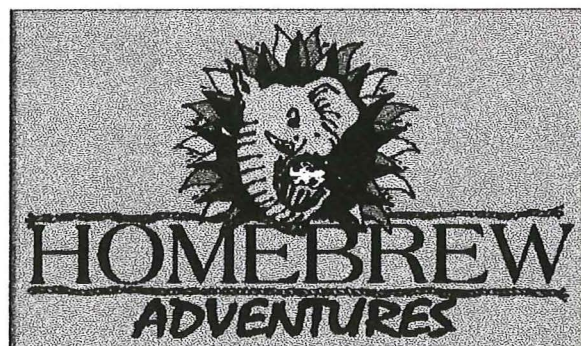
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# THE BEST FROM KITS

Gary Gutowski

## Basically Belgian Easy Belgian Ales from Extract

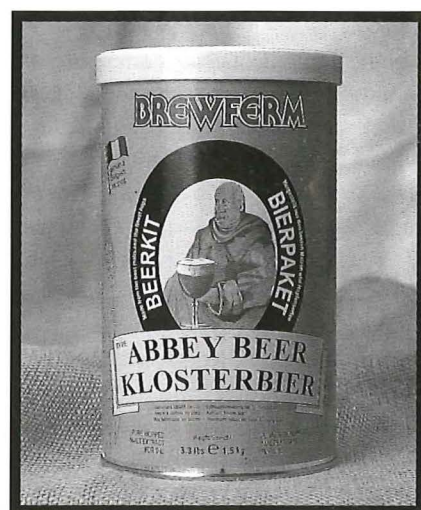
**L**ike most homebrewers, my first brewing experiences were with kits. It was 1992 and Don and Shirley Allison of The Spare Bedroom in Fort Walton Beach, Fla., started me off with their starter kit, which consisted of a can of hopped pale extract, a bag of corn sugar, a plastic fermentation bucket, bottle caps, a bottle capper and Charlie Papazian's *The New Complete Joy of Home Brewing* (Avon, 1991).

I thought the beer turned out fantastic, of course, and quickly brewed another pale ale, followed by a stout and a wheat, all from kits. About six months later, after reading Papazian's book a number of times and thinking a half dozen or so batches meant I was no longer a beginner, I progressed to malt extracts, steeping grains and doing partial mashes. I played around with different recipes and hops, and the brew continued to improve.

In 1992 I only knew one other homebrewer, a guy living in the barracks at Eglin AFB. He was confined to kits because of his one-room living arrangement so generously provided by Uncle Sam. I then met Dave Ethridge, former owner of Tradewinds in Niceville, Fla. He quickly convinced me that all grain is the way to brew. He sold me a plastic bucket with a bunch of holes in the bottom, Terry Foster's book, *Pale Ale* (Brewers Publications, 1990) from the Classic Beer Style Series, some liquid yeast and some grain that we formulated into a recipe and crushed with his Corona mill.

The next Saturday I dove headfirst into the mash tun and never looked back. I now buy grain by the 50-pound bag, use whole fresh hops and brew outdoors using three converted kegs and various other gadgets. I read everything I can about brewing and dream of the day I can retire from the Air Force and open up my own microbrewery or brewpub somewhere in central Florida.

Although today I brew extensively from grain, I never want to be labeled an elitist. Through the years I've enjoyed some excellent homebrews made from kits or extracts and know there are high-quality products on the market today. I have a great deal of respect for people who brew using kits or extracts. After all, they save a great deal of time, make enjoyable beer and, most importantly, they brew the beer they drink. Considering that 30 percent of the first-, second- or third- place beers at the AHA 1996 National Homebrew Competition were made from kits or extract-based recipes, it is obvious there has been much progress in the art and science of extract production and kits in the past decade.



Today, nearly anyone can brew quality homebrew in a relatively short period of time and with very little equipment.

For this column, and to prove my point, I brewed three Belgian-style beers. After some initial checking I found there wasn't much in the way of Belgian kits from which to choose. I decided on Abbey beer from Brewferm, a Belgian ale from Ironmaster and a malt extract recipe from The Home Brewery. Brewferm is a Belgian company that has the most extensive line of Belgian kits on the market. Ironmaster of Scotland sells one Belgian ale kit and The Home Brewery markets a Belgian Abbey malt extract syrup. This extract is custom made for them in Europe from 90 percent Belgian Pilsener malt and 10 percent Belgian caramel Pils. Although they do not sell any kits using this extract, their catalog does provide several recipes.





The Brewferm kit instructions were written to cover all 14 kits they make. The only difference from kit to kit, besides the actual can, is the amount of water and sugar you add, which is conveniently outlined in a "Table of Water and Sugar." The instructions also contain a "Tips" section on how to maximize the quality of the brew you make. Sanitation is stressed, along with a longer "ripening" period (six to eight weeks after bottling) to allow the beer to mature properly. Brewferm also suggests using candi sugar or raw cane sugar instead of white sugar. I chose the first option and substituted amber Belgian candi sugar (75 °L) for the white sugar. This kit, which took two cans for a five-gallon (19-L) batch, and the Belgian candi sugar cost about \$45.70.

I followed the manufacturer's instructions by soaking the can in hot water, pouring the contents into a sanitized glass carboy and rinsing the can with additional hot water. Then there was a strange sentence that read "Add 2 liters of warm water in which you (eventually) dissolve sugar 'amount sugar 1' and mix thoroughly." The "amount sugar 1" refers to the table of water and sugars to be added, but what, or rather when, is "eventually?"

Now I'm no rocket scientist, but even I can figure out that "eventually" probably means "should have already." I boiled the Belgian candi sugar in two liters of water and added it to the carboy, topping it off with cool water. After allowing the wort to cool I pitched the rehydrated yeast. The original gravity was 1.062, the wort tasted very good and the entire procedure took 30 minutes.

Next I made the Ironmaster Belgian ale kit. The company also uses one set of instructions for all their kits. The instructions were very simple and allowed me to deviate in only the type of sugar added. This option, which was buried in step three of the instructions, offered a choice of corn sugar, dried malt extract (DME) or liquid malt extract. Luckily I read the instructions before leaving the store and purchased some Hollander extra-light DME to use with this recipe. I wonder how this beer would taste with candi sugar or molasses?

The instructions tell you to add the sugar, or in my case DME, directly into the

fermenter. This didn't make sense so I deviated slightly and boiled the DME in water to make sure it was properly dissolved and sanitized prior to adding to the carboy. The total cost for this five-gallon (19-L) kit was \$24.90. The starting gravity was 1.050. This kit also took 30 minutes to make and again, the wort tasted very good.

The next kit wasn't a conventional kit, but an extract recipe provided by Tim Doyle at The Home Brewery homebrew supply store in Denver. The five-gallon (19-L) recipe, listed on page 19 of their fall 1996 catalog, is:

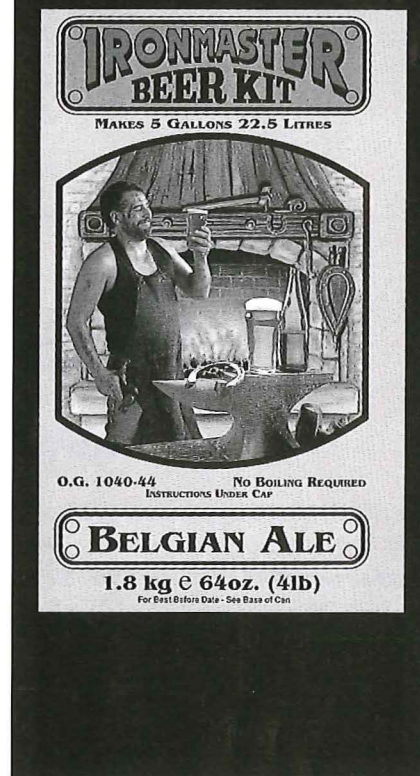
#### Ingredients for 5 U.S. gal (19 L)

- 6 3/5 lb Belgian Abbey malt extract syrup (3 kg)
- 1 lb sorghum syrup (0.45 kg)
- 1/4 lb 60 °L cracked crystal malt (0.11 kg)
- 1/4 lb cracked CaraVienne malt (0.11 kg)
- 1/4 lb cracked Belgian Special "B" malt (0.11 kg)
- 1 1/2 oz Perle hop pellets, 7.4 percent alpha acid (43 g) (60 min.)
- 3/4 oz Hallertauer hop pellets 4.5 percent alpha acid (21 g) (15 min.)
- Wyeast No. 1214 Belgian ale liquid yeast culture

Although this set of ingredients cost \$35.84, I did end up with extra grain and hops. It seems the smallest amounts of grain and hops The Home Brewery sells is one pound and two ounces, respectively.

I began by crushing the grain, placing it in a muslin bag and steeping in 1 1/2 gallons (5.76 L) of 150-degree-F (66-degree-C) water for 30 minutes. While this was steeping I dissolved the syrups in five gallons (19 L) of water and brought it to a boil in my brew kettle, adding the "grain tea" when it was ready. The first addition of hops was added 30 minutes into the boil, followed by the flavoring hops at the 75-minute point. The wort was boiled for a total of 90 minutes.

I quickly cooled the wort with a Heart's counterflow wort cooler, aerated with a Liquid Bread oxygenator and pitched the yeast. The original gravity predicted was 1.054,



but I only obtained 1.051. This batch took two hours to make, which is still considerably less than the five hours it takes me to make an all-grain batch.

One significant deviation I made from the three manufacturers' instructions is the way I treated the yeast ahead of time. The Brewferm and Ironmaster kits came with packets of dry yeast. Ironmaster's instructions were to simply sprinkle the yeast on top of the wort, but I don't like doing that. Brewferm instructed me to dissolve the yeast in water for 10 minutes then pitch it. That's a little better, but still not good enough. I went one step further and started all the dried yeasts ahead of time in 1.035-SG wort. I keep several canning jars of "starter wort" in my refrigerator at all times. I find this is a simple way of "pumping up" my yeast ahead of time. I timed it so I could pitch it into the carboy when the jar of yeast was at the high kraeusen stage. With this method there was visible activity on top of two of the beers one hour after pitching and the other quickly followed three hours later.



Primary fermentation took place at about 60 degrees F (16 degrees C). After 10 days I primed each of the beers with corn sugar and bottled them. You bet I tasted them, and they were great. The next step, as always, was the hardest, but I waited eight weeks to try them again. At that point I had several BJCP Certified judges evaluate each as if they were entered in a competition. The results were not as good as I expected. All the beers scored in the "drinkable" to "good" range (20 to 29 points) on the AHA scale.

They all looked great in the cup, but fell off the mark when tasted. Comments on the Brewferm beer were: "drinkable yet a bit out of balance," "tart taste initially followed by some sweetness and harsh finish. A more assertive yeast would be desirable." The Ironmaster beer received the following: "needs additional malt for richer body." Finally, the Home brewery beer's comments were: "hop flavor too high, body should be fuller and more complex."

The best advice I could give anyone brewing with a kit is to thoroughly read all

of the instructions at the store and make sure you understand them. Additional ingredients usually are required and sometimes these ingredients or options for different ingredients can be buried in the recipe. Unfortunately, the more expensive options usually yield the better product. Simply substituting liquid yeast for the dry yeast packet provides noticeable improvement. Above all, ask the proprietor questions if you don't understand the instructions. Most brew shop owners and employees are very knowledgeable and want you to make great beer.

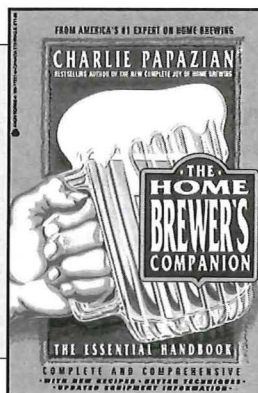
Gary Gutowski is stationed with the U.S. Air Force at Buckley AGB in Colorado, where he maintains antique IBM mainframe computer systems. He has judged or organized several micro and AHA sanctioned homebrew competitions including a first-round site for the 1996 National Homebrew Competition. When he's not brewing he enjoys making sausage, riding BMW motorcycles and raising two minibrewers, Ellis and Martin. He can be reached via e-mail at [lotsahop@dimensional.com](mailto:lotsahop@dimensional.com).

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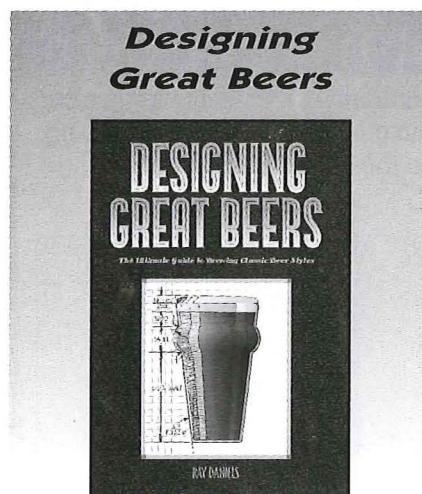
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# REVIEWS

**T**he opinions of individual reviewers do not necessarily represent the opinions of the American Homebrewers Association or *Zymurgy*.



All the great chefs start by learning the basics of classic recipes. In *Designing Great Beers, The Ultimate Guide to Brewing Classic Beer Styles* (Brewers Publications, 1996), Ray Daniels offers a definitive reference on the basics of designing our own great beers.

A book of this sort is long overdue. Daniels addresses all the practical issues that should be considered before designing a beer recipe. Although the book is written to include all the information needed by an experienced brewer, its clear, user-friendly language makes it valuable for beginners, too.

*Designing Great Beers* is divided into two sections. Each would be an exceptional book in its own right, but together they comprise a two-in-one reference, each section enhancing the other.

The first section addresses the selection of ingredients and procedures for using selected ingredients. It focuses on matching the ingredients bill with the desired characteristics with

regard to the brewer's individual brewing technique. The section does not teach how-to-brew basics, but rather explains the advantages and disadvantages of the products with respect to different brewing procedures. Daniels reviews a few essential formulas and techniques that are used to determine quantities, temperatures and times to aid the brewer in reaching the desired goal.

His approach is more user friendly than can be found in other brewing guides. A fair number of homebrewers without technical backgrounds may have formula phobia, but Daniels shows examples and explains each step in a comfortable conversational manner, always explaining how each step affects the overall goal. He enhances this further by providing numerous charts and graphs. These not only help clarify, but in some cases negate the need for using the formulas altogether.

The first section also serves as a buying guide, offering insights on determining the freshness of a product as well as useful and innovative techniques for determining which brand of a product might best suit your needs. For example, Daniels describes a procedure for testing different extracts, the results of which appear in a valuable table outlining the malt or sugar sweetness, color and other properties. This table allows the brewer to quickly select the desired extract for a particular recipe. He also covers products that only recently have become available to homebrewers and are not always addressed in older brewing guides. Overall, the first section provides a very thorough preparation for *Designing Great Beers*.

The second section of this book, perhaps more than the first, shows Daniels' extensive

research. In the acknowledgments he cites frequent use of the Siebel Institute of Technology Library, and the personal libraries of well-known brewing authorities Randy Mosher, Charlie Papazian, Greg Noonan and George Fix. References from the AHA and Institute for Brewing Studies along with numerous historical records, documents and periodicals from around the world also were used.

Daniels divides the classic styles into chapters. Each chapter addresses a style's history, ingredients, available commercial examples and research on successful brewing of the style. All of these subjects are covered thoroughly with the text, but again Daniels aims to make the information more usable by creating tables and charts. For example, each chapter has a table that shows at a glance the frequency and amount of common malts used by the second-round brewers at two years of the AHA National Homebrew Competition. Carefully compiled, easy-to-use information like this fills each section. Helpful summaries at the end of each chapter list the key factors in successfully brewing the style.

*Designing Great Beers* is the next book you should buy for your brewing library. Even if you are not interested in brewing to style, the book is a great reference to achieve any of a wide variety of brewing results. It has so much information that is easy to use there is no doubt this book will serve its owner for years to come.

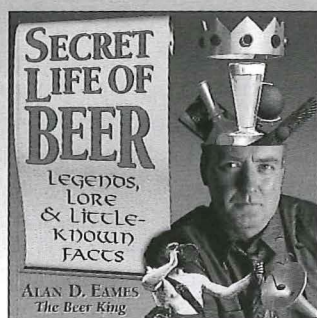
*Designing Great Beers, The Ultimate Guide to Brewing Classic Beer Styles*, by Ray Daniels, Brewers Publications, 1996, 368 pages. Publisher's suggested retail price is \$19.95.

Reviewed by David Papas, general manager and partner of Heart's Liquors in Orlando, Fla., and award-winning homebrewer.

©1997 David Papas



## Secret Life of Beer



*Secret Life of Beer: Legends, Lore & Little Known Facts* is a 203-page book written by Alan D. Eames, "The Beer King." As its name implies, *Secret Life* is a collection of facts, quotes and other snippets about beer and beer drinking. The segments, which are sorted into chapters by category, range from one line to a few pages in length. There is neither an introduction nor a conclusion.

Physically speaking, the publishers did a very poor job with this book. Although the visible layout of the interior is relatively appealing, the cover is unattractive and the binding is terrible. When I received the book there was already a break in the spine. By the time I was finished reading it once, some of the pages had fallen out.

To the author's credit, he has clearly done his homework. The variety and breadth of the quotes and historical facts are quite impressive. While some of the historical accounts are relatively recent, others date back to several hundred years B.C. The quotes are drawn from such diverse sources as Sophocles, George Orwell and Otto von Bismarck. Finally, the information is drawn not only from Western sources, but from all over the world. Although many of the poems, songs, sayings and other tidbits are drawn from the United States and Europe, others are from Africa and Asia.

I love trivia and I love beer — the marriage of the two could have been a match made in heaven. Could have been, but they are not in this case. Despite the impressive pool from which the author drew his sources, I found only a few of the quotes and facts to be of interest. I did not find the majority of them worth a second thought. In fact, more than once I found myself wondering if the author included some of them simply to fill space. For example, I am hard pressed to find interest in

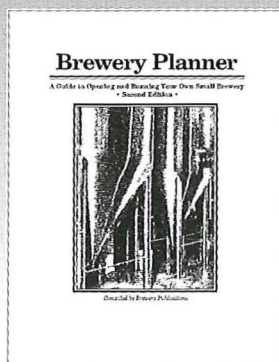
the following quote (from Lord Byron, *Don Juan*) "And when I think upon a pot of beer."

*Secret Life* is not well enough organized to be an effective reference tool nor does it not flow in a manner to entice one to read it like a novel. Finally, *Secret Life* is not attractive enough to adorn a coffee table. To be honest, I cannot think of any purpose for which to recommend *Secret Life*, unless you are specifically looking for a collection of beer quotes and trivia. Even then I would still balk at paying almost \$10 for the minimal amount of interesting material.

*Secret Life of Beer: Legends, Lore & Little Known Facts* by Alan D. Eames, Storey Publishing, 1995, 203 pages. Publisher's suggested retail price is \$9.95.

*Reviewed by Garshom L. Arkoff, a homebrewer since 1993 and bronze medal winner in the AHA 1994 National Homebrew Competition. Garshom is studying for his M.B.A. at Sonoma State University and is doing graduate research through the Craft Brewing Business Institute. ©1997 Garshom L. Arkoff*

## The Brewery Planner



The second edition of *The Brewery Planner*, *A Guide to Opening and Running Your Own Small Brewery* attempts to address the myriad issues facing an entrepreneur opening a small brewery. It is a diverse collection of essays regarding the Herculean, or perhaps Sisyphean, task of getting a small brewery off the ground. The essays contained in it come from a number of sources: some were talks given at an Institute for Brewing Studies conference, others were written specifically for this edition. About half of the authors are in both editions; most of these provided updated essays.

Precisely because this book was written by so many authors, the information not given

and the issues not discussed deserve particular attention. After visiting many existing craft breweries, if I had to choose four additional areas that warrant sections in a book of this scope they would be (1) quality control, (2) bottling lines, (3) restaurant operations and (4) OSHA and safety issues.

Where do I think the existing sections could be improved? The essay on contract brewing, although informative, could benefit from a greater focus on the intended audience. The nuts and bolts of how a contract should be set up are not addressed. As someone who has worked for both contractors and contractees, I would like to have seen what contract terms other brewers find important. For someone entering this business, terms like CO<sub>2</sub> volumes and CFUs are very important to have defined. Similarly, editing the six-page opus on hosting a beer tasting, and providing an addendum to the section on distribution titled something like "How I got Screwed by my Distributor — Tales from the Trenches" would be useful.

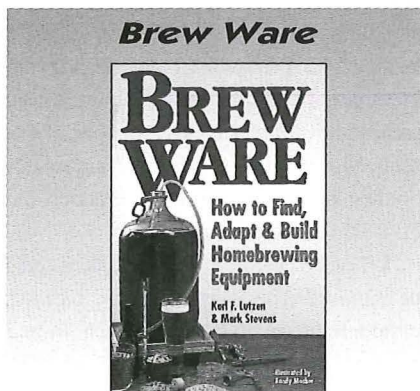
By and large the book is well-written and full of useful information. After reading the two-page section "Insurance for the Brewery" by Peter Whalen I felt I could at least begin the dialog with an insurance agent without looking like a complete idiot. Likewise Sheri Winter's "Public Relations 101" is specific and illustrative. These concise and well-written essays show the book at its best. The learning curve when opening a small brewery is steep, but getting advice like that coaxed out of Ken Grossman of Sierra Nevada by Jim Dorsch at least puts the potential entrepreneur on the right path. Ken's advice should be engraved above the loading dock of every small brewery: "Stay focused on beer quality," and "You can't have enough money."

In conclusion, this book is a bit scattered but overall very informative, quite diverse and a real asset to someone entering the craft-beer business.

*The Brewery Planner, A Guide to Opening and Running Your Own Small Brewery*, Second Edition, Brewers Publications, 1996, 184 pages. Publisher's suggested retail price is \$80 or \$60 for IBS members.

*Reviewed by John Mallett, president of Saaz, a brewery consulting and equipment fabrication firm. He is Old Dominion Brewing Co.'s former brewmaster and a member of the extended Siebel Institute of Technology faculty.*





When I approached *Brew Ware*, *How to Find, Adapt and Build Homebrewing Equipment* by Karl Lutzen and Mark Stevens (Storey Publishing, 1996), it was with some trepidation. I don't consider myself a "gadget guy." The task of designing, assembling and, in some cases, maintaining a new piece of equipment is often enough to prevent me from taking the initiative on a new gadget. But there is a certain point at which one decides that a given gadget or process is the missing link between beer-as-usual and homebrew nirvana. I wanted to see if Lutzen and Stevens could give me the extra push to become the confident gadgeteer I'd never been.

Lutzen and Steven's 200-plus-page book is full of information — some parts more useful than others. The appendix on suppliers seems like a convenient resource, while the appendix on metric conversion seems strangely out of place. Is the international reader going to be able to search for 9.525-millimeter (three-eighths-inch) outside-diameter copper tubing to go inside a 15.875-millimeter (five-eighths-inch) inside-diameter garden hose?

The book is illustrated by Randy Mosher, whose drawings fill the gap between comprehension and confusion on many of the designs.

The authors have arranged the book around the brewing process and begin with a brief introduction to the process, but wisely defer to Dave Miller's *Homebrewing Guide* (Storey Publishing, 1995) as a greater authority for brewing information. They casually mention using three to four packets of dried yeast to improve the growth cycle for fermentation, but say nothing about rehydrating the dried yeast (i.e., follow the directions on the packet) which is critical when using dried yeast.

The first chapter initiates a discussion of the homebrewery and outlines a progression of steps in equipment growth through various

stages of brewing complexity. They then take a leap up to a discussion of a commercial brewery in an attempt to glean some lessons from professional brewing equipment and practices. The discussion doesn't seem to yield as many lessons as one would hope. It is also in this first chapter where one of the first editorial blunders appears. They mention the brewery (Brimstone Brewing Co. of Baltimore, Md.) and its equipment setup. Then there is a paragraph that begins, "Tewey also suggests ..." Who is Tewey? As it happens, Marc Tewey is the brewer at Brimstone Brewing, they just neglect to mention it in the text. (He is mentioned in the Acknowledgments section, however.)

The second editorial glitch occurs in the second chapter, "Building a Home Brewery," where the authors discuss factors and considerations that go into setting up a dedicated brewery area in your home (emphasis mine) and start with "Materials for Fabricating Equipment." In this same chapter, they show the first equipment design for building a tower system. At this point, any illusions you may have had about this being an introductory book should be gone!

This arrangement of the book clearly gears it toward the intermediate and dedicated homebrewer audience. However, this is where Lutzen and Stevens warm to the subject. They present a five-page set of directions with a list of materials, 19 steps, an exploded view of the tower and an illustration of the completed system. The directions seem clear and easy to follow. The illustrations provide enough information to allow the text to be concise. If you find yourself at a loss with this treatment, then this topic may be beyond your comfort zone.

The next section on tools discusses a number of things that most people should simply buy. Thermometers, hydrometers, pH meters and pumps are really not items to construct. The subsequent section on grain mills discusses the pros and cons of the various commercially available mills in some detail, including the authors' preferences regarding several models. This provides a good framework for making a reasonably informed decision on the mills currently available. There is also a discussion of how to build a wooden roller mill and a 10-page appendix on building a motorized mill.

The section on mashing, lautering and sparging is the first of six very good chapters on various devices for homebrewing that cover boiling, chilling, fermenting, bottling and keg-

ging. They discuss modifying coolers and kegs, building wort chillers, using temperature controllers with refrigerators, counterpressure bottle fillers and jockey boxes. Each of these ventures mentions some favorable aspects of building the device and presents a set of instructions to follow and materials to use to construct the device. Other than giving recirculating infusion mash systems a short shrift as being too expensive, the authors do well.

The authors obviously didn't look closely at their source article "What About RIMS?" by Kerry Hauptli from *Zymurgy* Special Issue 1995 (Vol. 18, No. 4) and the quiet reference to his company, BrewCraft Ltd., that makes controllers. Perhaps the reluctance stems from an avoidance of all things electrical — there are no circuit diagrams in *Brew Ware*. This bias could stem from a thrifty bent because RIMS do tend to have a high number of purchased components.

The next two chapters, on hops and yeast, seem almost obligatory from the formalism of the approach. The construction of hop poles and dehydrators could be useful to the home hop farmer. The presentation of culturing methods for yeast is good, but there are no gadgets for the home culture grower to build. But then, who wants an improvised technique for providing a sterile environment?

So how did they do? It depends on what you want. If you just want to buy a device and not build it, then you can probably peruse a recent issue of *Zymurgy* to find people making the equipment you want to buy. Your local homebrew shop has some of the equipment available for purchase. If you are on the fence between buy and build, *Brew Ware* can help you make an informed decision. *Brew Ware* does not try to entice you to become a "gadget head." That's a decision best left to the individual based on time, money and inclinations.

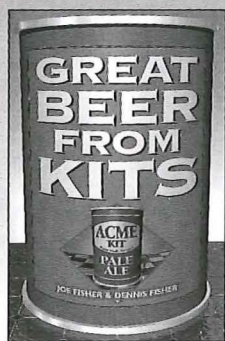
But if you harbor the urge to do it yourself or cannot contain the itch to tinker, *Brew Ware* may be your bible.

*Brew Ware, How to Find, Adapt and Build Homebrewing Equipment* by Karl F. Lutzen and Mark Stevens, Storey Publishing, 1996, 264 pages. Publisher's suggested retail price is \$16.95.

*Reviewed by Darrell Simon, a BJCP National judge and homebrewer for five years, has been a member of the North Texas Homebrewers Association Inc. for four years.*



## Great Beer From Kits



Great Beer From Kits (Storey Publishing, 1996) is Joe and Dennis Fisher's attempt to fill the void in the literature for extract and convenience brewers. The 80-page recipe section covers a wide variety of beer styles including brief descriptions that are fairly accurate.

The recipes include authors' notes, gravities, ingredients and instructions. Hop specifications are noticeably missing. Hop additions are listed only as bittering, flavor or aroma with no alpha acid percentages or utilization specifications. Initially I was pleased to see initial and final gravity targets included for the recipes but, with unreasonable target ranges of 1.040 to 1.061 for Ben's Improved Cream Ale and 1.034 to 1.051 for Krakatoa Common Beer, they become useless.

What's in the can? The authors have answered the question many brewers ask when selecting canned extract. A detailed analysis of 66 different extract kits produced by 12 manufacturers is provided. The analyses include gravity when mixed with water to five gallons, types of grain, hop varieties in the extract and specialty ingredients when available and applicable. This type of information is needed by the extract brewing community.

The authors describe equipment and basic brewing techniques in the first chapter and revisit equipment (which includes cleaning and sanitizing materials) in the fourth chapter. Basic brewing is well-organized and easy to follow. Checklists for brewing and bottling are included.

I applaud the Fisher brothers for recommending that all malt extracts be boiled regardless of manufacturers' instructions. I

question advocating that hot wort be poured through a strainer into a fermenter rather than racked to minimize oxygen uptake at this point.

Amidst a discussion of yeast reproduction, characteristics and varieties, the authors' biases are evidenced as beginners are advised to "rip open a packet of dry yeast and pour it in." Although the authors state, "Without good active yeast, all your other ingredients cannot become beer," they do not advocate active yeast in their methodology or recipes. The increased cost and preparation time for liquid yeast is emphasized, problems inherent to dry yeasts are not mentioned and yeast starters, rehydration and dissolving oxygen in cooled wort are not advocated. The reader is left with a false sense of security when stirring in dry yeast that has been sprinkled on top (or is my bias showing?).

The troubleshooting section is extremely limited and includes some ill-advised suggestions like "Open the fermenter lid and check the yeast if no bubbles are coming out of the airlock." Much wider and more accurate coverage is available from a variety of sources.

The appendices on Cornelius kegging, which include no precautions, and wort chilling, which only mention immersion-style chillers, also seem extraneous considering the focus of the book.

I wanted to consider this book for inclusion in a homebrew starter kit, but I believe it includes too many inaccuracies that might mislead the new brewer.

The authors would do well to choose an audience for future publications. There are many handbooks for beginning brewers currently available. A book that focuses on manufacturers' ingredients in kits and malt extracts as well as recipes and suggestions for developing truly great beers that do not require mashing would play to their area of expertise.

*Great Beer From Kits* by Joe Fisher and Dennis Fisher, Storey Publishing, 1996, 170 pages. Publishers suggested retail price is \$12.95.

*Reviewed by Alberta Rager, National BJCP judge, founding member of the Kansas City Bier Meisters and managing partner of Bacchus & Barleycorn Ltd.*

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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."

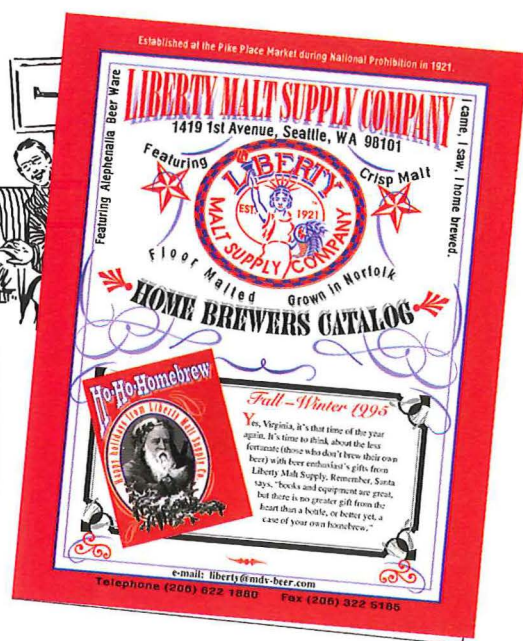
"Quit your kidding," laughed Thomas, a real beer enthusiast. "You've been brewing for years. I can tell."

"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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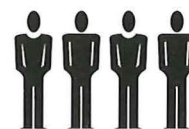
"Perhaps the, if not one of the, best homebrew shops in America."

—Charlie Papazian, founder,  
American Homebrew Association



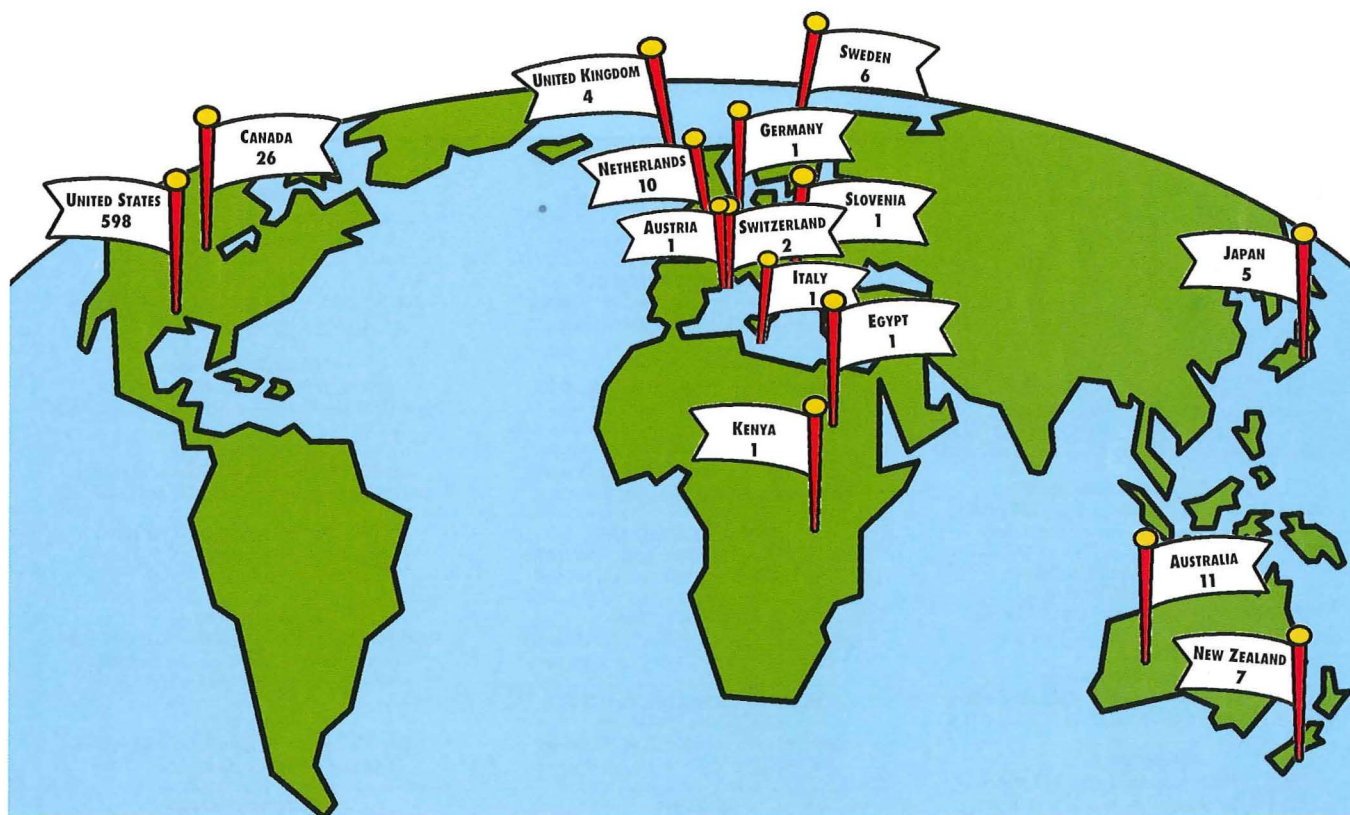


# HOMEBREW CLUBS



Caroline Duncker

## Homebrew Knows No Borders



**As of mid November, the AHA had registered 675 homebrew clubs promoting homebrew camaraderie around the world.**

**T**he tremendous growth of homebrew clubs in the United States indicates the increasing interest in homebrewing. More people are getting involved in the hobby, meeting with others like themselves and learning from one another in a social setting. Five years ago 295 clubs were registered with the AHA. Today, more than 675 clubs are registered and active. We have wit-

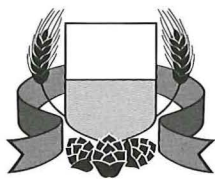
nessed a rise in the number of U.S. clubs, but the number of international homebrew clubs also has grown dramatically.

It's not surprising to see clubs in Canada, England or Germany, but clubs in Slovenia, Japan and Kenya are indeed success stories, too. The United States has a wealth of information, educational opportunities and homebrew supplies available. We expect and

demand the best from our various resources. Members of clubs in other nations often have challenges deterring them from brewing their own beer. Lack of a local supply shop, difficulties obtaining information and sometimes even the law can restrict them. Four international homebrew clubs were interviewed to see how these groups differ from U.S. clubs and what we can learn from their experiences.



## Shortage of Supplies in Slovenia



**DRUŠTVO  
DOMAČIH  
PIVOVARJEV**  
Ljubljana

**Ljubljana, capital of Slovenia, is home to the Ljubljana Hombrew Society.**

Miran Sinigoj (miran.sinigoj@lek.si) from Slovenia in the former Yugoslavia is the contact person for his club, Društvo Domačih Pivovarjev Ljubljana. The 12 members meet once a month to exchange experiences in homebrewing and taste beer, but their real focus is on having fun. Their dues are equivalent to \$20 a year and include a T-shirt, newsletter and mem-

bership card. The newsletter hasn't started up yet, but members plan to publish "Domači Pivovar," meaning homebrewer, six times a year. Miran says, "We hope to get a discount in homebrew shops with our homebrew club member card."

All members of the club are fairly advanced brewers — they have to be. The biggest challenge is obtaining ingredients. There are only two importers of extract and of these, only one is reasonably priced but is located 200 kilometers away. Luckily, they do have local brewhouses that sell malted barley and hops and provide the club a place to meet. The malt available is limited to crystal, chocolate and pale two-row. They obtain dry yeast from the United States or England, typically Munton and Fison or Coopers.

The hop selection is dependent on what the local brewhouses have available for sale. Miran says he can obtain only Sloven-

ian Golding and Aurora hops from the brewhouses. The two large breweries, Union and Lasko, do not make malt or hops available to homebrewers. Miran and other club members brew ales and tune into the Internet as their best resource for brewing information and books on brewing.



**Industrial designer and homebrewer Bojan Straze created this label boasting local brewing pride and joking about the dangers of abstaining from homebrew.**



**KUDOS**

**SIXTH ANNUAL MARCH MASHFEST**  
March 22, 1996 — Fort Collins, Colo., 201 entries  
Tony DeMarse of Greeley, Colo., won best of show.

**BLUFF CITY BREWERS EIGHTH ANNUAL  
HOMEBREWERS' EXTRAVAGANZA**  
April 20, 1996 — Memphis, Tenn., 97 entries  
Mark Bayer of St. Charles, Mo., won best of show.

**MALTOSE FALCONS' MAYFAIRE**  
April 27, 1996 — Woodland Hills, Calif., 222 entries  
Brian Vessa and Bruce Brode of Venice, Calif., won best of show.

**"BE LIKE MIKE!"**  
May 1, 1996 — Austin, Texas, 190 entries  
Mike Lentz of College Station, Texas, won best of show.

**SUNSHINE CHALLENGE**  
May 4, 1996 — Orlando, Fla., 363 entries  
Rob Hearst of Orlando, Fla., won best of show.

**GEMSTATE HOMEBREW COMPETITION**  
May 4, 1996 — Boise, Idaho, 118 entries  
John Delaney of Boise, Idaho, won best of show.

**NINTH EVANSTON FIRST HOMEBREW CHALLENGE**  
May 5, 1996 — Evanston, Ill., 79 entries  
Christopher Nemeth of Evanston, Ill., won best of show.

**ELIZABETHAN HOMEBREWING COMPETITION**  
May 11, 1996 — San Bernardino, Calif., 132 entries  
Steven Graham of Yucaipa, Calif., won best of show.

**IOWA CITY HOMEBREW COMPETITION**  
May 18, 1996 — Iowa City, Iowa, 207 entries  
Peter Diltz of Coggon, Iowa, won best of show.

**ST. PAUL BREWING CELEBRATION**  
June 7, 1996 — St. Paul, Minn., 215 entries  
Ray Taylor of Fargo, N.D., won best of show.

**DOMINION CUP '96**  
June 8, 1996 — Richmond, Va., 85 entries  
Rhett Rebold of Burke, Va., won best of show.

**HOPLAND HOMEBREW COMPETITION**  
June 8, 1996 — Bellevue, Wash., 158 entries  
Herbert Lowe of Redmond, Wash., won best of show.

**SAN JOAQUIN COUNTY FAIR**  
June 12, 1996 — Stockton, Calif., 156 entries  
Robert Manson of Tracy, Calif., won best of show.

**E'VILLE TRIPLE THREAT**  
June 15, 1996 — Ellicottville, N.Y., 47 entries  
Vince Oliverio of Ellicottville, N.Y., won best of show.

**SECOND ANNUAL MILL CREEK CLASSIC  
HOMEBREW COMPETITION**  
June 30, 1996 — Salem, Ore., 98 entries  
Noel Blake of Portland, Ore., won best of show.

**BUZZ-OFF**  
June 30, 1996 — Downingtown, Pa., 324 entries  
Rich Rosowski of Horsham, Pa., won best of show.

**CABA 12TH ANNUAL GREAT CANADIAN  
HOMEBREW COMPETITION**  
July 7, 1996 — Edmonton, Alberta, 165 entries  
Ross Hastings of Edmonton, Alberta, Canada, won best of show.

**EL DORADO COUNTY FAIR**  
July 13, 1996 — Placerville, Calif., 41 entries  
James Bendon of Sacramento, Calif., won best of show.

**BLUES, BREWS & BARBEQUE**  
July 13, 1996 — Lexington, Ky., 88 entries  
Jeff Boggess of Hurricane, W.V., won best of show.

**SUMMER CAP-OFF '96**  
July 14, 1996 — Ceres, Calif., 57 entries  
Kelly Robinson of Ceres, Calif., won best of show.

**IOWA STATE FAIR**  
July 15, 1996 — Des Moines, Iowa, 167 entries  
Jack Standefer of Coralville, Iowa, won best of show.

**RED RIVER VALLEY FAIR**  
July 16, 1996 — Fargo, N.D., 47 entries  
Dennis and Kathy Colliton of West Fargo, N.D., won best of show.

**LUNAR RENDEZBREW**  
July 17, 1996 — Seabrook, Texas, 98 entries  
Randy and Stephanie Ward of Alvin, Texas, won best of show.

**OHIO STATE FAIR HOMEBREW CONTEST**  
Aug. 1, 1996 — Columbus, Ohio, 150 entries  
John Brooks of Westerville, Ohio, won best of show.

**ARMANETTI LIQUORS/  
HEARTLAND HYDROPONICS HOMEBREW COMPETITION**  
Aug. 3, 1996 — Mundelein, Ill., 29 entries  
Bill Jackson of Lake Bluff, Ill., won best of show.

**BEER & SWEAT**  
Aug. 10, 1996 — Cincinnati, Ohio, 81 entries  
Fred Dackus of Wadsworth, Ohio, won best of show.

**KENTUCKY STATE FAIR**  
Aug. 11, 1996 — Louisville, Ky., 101 entries  
Byron Felker of New Albany, Ind., won best of show.

**ANTELOPE VALLEY FAIR FIRST ANNUAL  
HOMEBREW COMPETITION**  
Aug. 17, 1996 — Lancaster, Calif., 43 entries  
Bruce Berger of Tehachapi, Calif., won best of show.

**MADE IN THE SHADE 1996**  
Aug. 17, 1996 — Flagstaff, Ariz., 139 entries.  
Rick Drake and John Forbes of Phoenix, Ariz., won best of show.

**ALASKA STATE FAIR HOMEBREW COMPETITION**  
Aug. 24, 1996 — Palmer, Alaska, 266 entries  
William Murray, Jim Evans and Mark Ryan of Anchorage, Alaska, won best of show for ale, lager and mixed style respectively.



## Legal Limitations for Brewers in Japan

Junko Saito, vice president of the Beer Club of Japan (bcjkobe@osk.threewebnet.or.jp), started the club in April 1996 to share information and increase camaraderie among homebrewers in Japan. The club publishes a newsletter and 150 members meet irregularly for parties and seminars. The membership is spread across Japan from Okinawa to Hokkaido.

The main meeting place is Kobe, so members travel great distances to attend the seminars. The club has met for three seminars in the last six months and had another planned before the end of the calendar year. The seminars focus on the history of beer and brewing and are followed by a beer tasting. According to Junko, "After the seminar we have a beer party with a lot of nice food and excellent homebrews and imported craft beer." Members get together to sample their beers, but a formal judging is not part of this process. Junko says, "Right now, we want many homebrewers to enjoy the opportunity to talk to each other, exchange ideas and enjoy other homebrews, which is very rare for Japanese homebrewers to do." Their newsletter is similar to those in the United States and includes homebrewing tips, travel logs from visitors to newly opened brewpubs or travels to other countries and their brewing history. Junko explains, "The members love the newsletter because there is no other newsletter providing wanted information by homebrewers and beer lovers in Japan."



**Relaxing and having a homebrew Japanese style. Satoru Ishii of the JHA regularly refers to his collection of Zymurgys and brewing texts.**

Homebrewing is on the rise, despite the Japanese law prohibiting the home production of alcoholic beverages with an alcohol content of more than 1 percent by volume. Retailers place warnings on supply packaging and the burden is on the customer to brew beer of legal alcohol content. Enforcement is not strict. The partial deregulation of the brewing industry in 1994 allowed for small-scale craft-brewing operations in Japan.

Homebrewers and those interested in homebrewing have been exposed to styles of beer other than the light lagers typically consumed in Japan. This exposure has helped spur the interest and growth of homebrewing. Junko and other members of the Beer Club of Japan were able to attend the 15th Great American Beer Festival® in Denver Sept. 26 through 28 and celebrate the wealth of craft-brewed beer in the United States.

Another club, the Japan Homebrewers Association, is made up of only three members. They live great distances from one

## 日本自家醸造研究会

another and are unable to meet regularly. Satoru Ishii (s-ishii@da2.so-net.or.jp) lives in Ibaraki near Tokyo, Wataru Kudoh lives in Aomori in the northern region of Japan, about 500 kilometers away. The third member, Masahiko Ide resides in Finland! The three communicate via electronic mail and members are avid all-grain brewers. The club is brand new so no bylaws or formal activities have been established yet.

Satoru explains, "The basic reason for the club is that we want to study homebrewing. Even if you are a very keen homebrewer, it is hard and tiresome to study by yourself. The theme we converse about now is mainly basic homebrewing methods, techniques and theories." They spend their time asking one another brewing questions and fulfilling their hobby, much as we do on electronic brewing forums in the United States. They have registered with the AHA and therefore are in touch with other clubs around the world.

### AHA Club-Only Competition Winners

#### MEAD MAGIC

The 1996 Mead Magic competition received 67 entries for the Sept. 7, 1996, judging in Boulder, Colo. organized by the AHA.



**HAL BUTTERMORE**, Ann Arbor, Mich., representing the Ann Arbor Brewers Guild.



**LEE GROSS** of Atlanta, Ga., representing the Covert Hops Society.



**KEVIN McCLORY** of Franklinville, N.Y., representing Allegheny Libation Education & Recreation Society (ALERS).

#### BEST OF FEST

The 1996 Best of Fest competition received 44 entries for the Oct. 26, 1996, judging in Jacksonville, Fla., organized by the Northeast Florida Society of Brewers.



**SCOTT BULCOCK AND MIKE DEINHARDT** of Patchogue, N.Y., representing the Brewers East End Revival.



**SCOTT DAY AND TODD WARREN** of Livonia, Mich., representing BEERNUTZ.



**RICK DRAKE AND JOHN FORBES** of Glendale, Arizona, representing Brewmeisters Anonymous.

### 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 AHA administrator, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816; FAX (303) 447-2825; Internet aha@aob.org.

This list reflects club registrations received through Sept. 16, 1996.

#### UNITED STATES

##### Kansas

Lawrence Brewers Guild  
c/o Dwight Burnham  
1051 Wellington Rd.  
Lawrence, KA 66049  
(913) 843-4341

##### North Carolina

Outer Banks Grain and Yeast Necromancers (OBYN)  
c/o Susan O'Brien  
PO Box 37  
Corolla, NC 27927

##### South Dakota

The Ale Riders  
c/o The Beer Barrel LLC  
301 E. Saint Patrick St.  
Rapid City, SD 57701-5415  
(605) 348-8878



## Supplies a Mirage on the Savanna



The homebrew club in Kenya named the Hoopoe Brewers after an African bird, is made up of expatriots who have found themselves trying to homebrew in remote areas of Africa. Of the seven members five are American, one is British and one holds passports to Ireland and the United States. Their biggest challenge is obtaining supplies.

"We often pretend we are going down to Kip Tanui's Carboy and Hop Shop in Nairobi," jokes Cathy Wilson. "It doesn't exist but we dream about having 20 carboys someday and a local supply shop." They meet at a member's house in Nairobi and their meetings consist of brewing (rain or shine because of a covered porch), planning the next brewing session and, of course, tasting homebrew once the brewing session is complete. Many ingredients such as dried malt extract, hops and specialty grains are brought back from the United States.

Cathy says, "People say hops don't grow well here because the length of the days is too short, but I would like to experiment someday." Club members are able to buy Kenyan two-row pale malt and crystal malts locally in Nairobi but the prices are very high. "Usually when we go to the United States we come back with one 70-pound bag of brew supplies." Cathy reminisces, "Once Robin Reid and I brought 55 pounds of DME, specialty

malts and yeast cultures back and Russ Kruska brought a carboy!"

The club does not publish a newsletter, but has created letterhead with a logo. They don't pay dues, either. "Everyone contributes to the supplies when we go to the States or when we go downtown in Nairobi," explains Cathy. The club brews at least twice a month and sometimes more, according to the log of brews they sent to *Zymurgy*. Brew names include "Hoopoe Head, Herland Honey Ale" and "Butter Girls Brown" named after the brewing canines that help with the month-

ly brew and tasting. The main search is for supplies. They have found only two carboys in the area since 1988 and they weren't from Kip Tanui's.

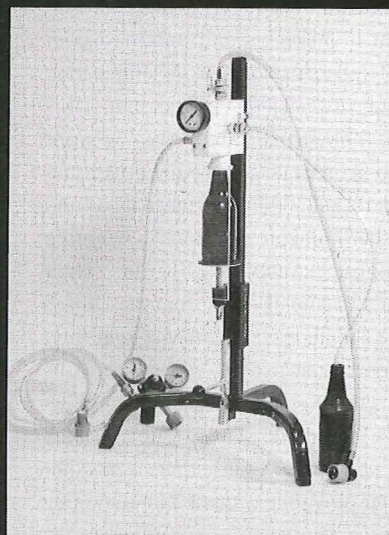
The need for camaraderie, the pooling of resources and the sharing of information and homebrew cause clubs to spring up all around the world. With electronic mail and the World Wide Web, we can all be members of the global community of homebrewers.

**Caroline Duncker, AHA project coordinator, is a homebrewer and active member of Boulder, Colo.'s, Hop, Barley and the Alers.**

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[beer@gs.net](mailto:beer@gs.net);  
<http://www.slidell.com/beer>

**Home Brewer's Supply Co. Inc.**  
PO Box 72713  
Bossier City, LA 71172  
(318) 747-7151; (800) 363-6482  
(Mail Order)

## MAINE

**The Purple Foot Downeast**  
116 Main St., Dept. Z  
Waldoboro, ME 04572  
(207) 832-6286; (800) 829-6280

**Yeast Coast Homebrewing Supplies**  
966 Swan Lake Ave. (Route 141)  
Swanville, ME 04915  
(207) 338-2012

## MARYLAND

**Brew Masters, LTD. (Store #1)**  
12266 Wilkins Ave.  
Rockville, MD 20852  
(301) 984-9557; (800) 466-9557

**Brew Masters, LTD. (Store #2)**  
1017 Light Street  
Baltimore, MD 21230  
(410) 783-1258

**Cellar Works**  
at Fullerton Liquors  
7542 Belair Rd.  
Baltimore, MD 21236  
(410) 665-2900

**Chesapeake Brewing Co.**  
1930 Lincoln Dr., Unit C  
Annapolis, MD 21401  
(410) 268-0450; (800) 324-0450;  
FAX (410) 268-3705

**Elsie's Gourmet German Delicatessen**  
8141 Telegraph Rd.  
Severn, MD 21144  
(410) 551-6000

**Finksbury Liquors**  
Routes 140 & 91  
Finksbury, MD 21048  
(410) 833-6787

**The Flying Barrel**  
111 S. Carroll St.  
Fredrick, MD 21701  
(301) 663-4491

**Happy Homebrewing Supply Co.**  
810 Beaglin Park Dr., Unit 8  
Salisbury, MD 21804  
(410) 543-9616

**Maryland Homebrew**  
6770 Oak Hall Lane, Suite 115  
Columbia, MD 21045  
(410) 290-FROTH;  
FAX (410) 290-6795; (888) brewnow  
(toll free order line);  
<http://www.mdhb.com>

**Midnight Homebrew Supply**  
229 E. Main St.  
Westminster, MD 21157  
(410)-876-6999; FAX (410) 876-7954; [Midnighthb@aol.com](mailto:Midnighthb@aol.com);  
<http://www.amerimall.com/midnight.htm>

**Olde Towne Homebrew Supply**  
302 B E. Diamond Ave.  
Gaithersburg, MD 20877  
(301) 330-8881; [oths@soho.ios.com](mailto:oths@soho.ios.com);  
<http://www.custom-web.com/oths/>

## MASSACHUSETTS

**Barleymalt and Vine**  
26 Elliot St.  
Newton, MA 02161  
(800) 666-7026;  
<http://www.bm-v.com>

**Beer and Wine Hobby**  
180 New Boston St.  
Woburn, MA 01801  
(617) 933-8818; (800) 523-5423

**Boston Brewers Supply Co.**  
48 South St.  
Jamaica Plain, MA 02130  
(617) 983-1710

**The Keg & Vine**  
697 Main St.  
Holden, MA 01520  
(508) 829-6717

**Luke's Super Liquor Stores**  
511 Route 28  
West Yarmouth, MA 02673  
(508) 775-6364; (508) 775-2979;  
FAX (508) 778-4668

**The Modern Brewer Co.**  
Dover Plaza  
99 Dover St.  
Somerville, MA 02144  
(617) 629-0400;  
<http://www.xensei.com/users/mod-brew>;  
[modbrew@xensei.com](mailto:modbrew@xensei.com)

**Stella Brew Homebrew Supply**  
150 Main St.  
Webster, MA 01570  
(508) 949-0398; (800) 248-6823

**Stella Brew Homebrew Supply**  
197 Main St.  
Marlboro, MA 01752  
(508) 460-5050; (800) 248-6823

**Worm's Way Massachusetts**  
1200 Millbury St.  
Worcester, MA 01607  
(508) 797-1156; (800) 284-9676

## MICHIGAN

**Brew & Grow**  
33523 W. 8 Mile #F-5  
Livonia, MI 48152  
(313) 442-7939

**Brew-it Yourself Center**  
13262 Northline Rd.  
Southgate, MI 48195  
(313) 284-9529

**Lake Superior Brewing Co.**  
7206 Rix St.  
Ada, MI 49301-9189  
(616) 682-0091; (800) 345-CORK

**Michigan Homebrew Supply**  
PO Box 8244  
Roseville, MI 48066-8244  
(810) 774-5619; (800) 278-1311



**Red Wagon Wine Shoppe**  
2940 S. Rochester Rd.  
Rochester Hills, MI 48307  
(810) 852-9307

**Things Beer**  
100 E. Grand River  
Williamston, MI 48895  
(517) 655-6701; (800) 765-9435

**Wine Barrel Plus**  
30303 Plymouth Rd.  
Livonia, MI 48150  
(313) 522-9463

## MINNESOTA

**America Brews**  
9925 Lyndale Ave. S.  
Bloomington, MN 44420  
(612) 884-2039; (800) 200-3647;  
FAX (612) 884-1065

**Brew-N-Grow**  
8179 University Ave. N.E.  
Fridley, MN 55432  
(612) 780-8191

**WindRiver Brewing Co. Inc.**  
7212 Washington Ave. S.  
Eden Prairie, MN 55344  
(612) 942-0589; (800) 266-HOPS;  
FAX (612) 942-0635

## MISSOURI

**Custom Brew Haus**  
6701 Clayton Rd.  
St. Louis, MO 63117  
(888) 334-BREW; (314) 726-BREW;  
FAX (314) 726-1130; brewhaus@stl-  
net.com;  
paul@stlnet.com;  
http://www.realbeer.com/brewhaus

**The Home Brewery**  
South Old Highway 65  
PO Box 730  
Ozark, MO 65721  
(417) 485-0963; (800) 321-  
BREW(2739); FAX (417) 485-0965;  
homebrew@dialnet.net

**Johnny Brew-Meister's**  
Crossroads West Shopping Center  
2101 W. Broadway  
Columbia, MO 65203  
(573) 446-8030; FAX (573) 446-  
8031; jbrew2101@aol.com

**St. Louis Wine & Beermaking**  
251 Lamp & Lantern Village  
St. Louis, MO 63017  
(314) 230-8277; FAX (314) 527-  
5413

**Winemaker's Market**  
4349 N. Essex Ave.  
Springfield, MO 65803  
(417) 833-4145

**Witt Wort Works**  
1032 S. Bishop Ave.  
Rolla, MO 65401  
(573) 341-3311

**Worm's Way Missouri**  
2063 Concourse  
St. Louis, MO 63146  
(314) 994-3900; (800) 285-9676

## MONTANA

**Billings Homebrew Supply**  
1916 3rd Ave. N.  
Billings, MT 59101  
(406) 256-0261

## NEBRASKA

**Carter's BYOB, Inc.**  
1921-23rd. St.  
Columbus, NE 68601  
(402) 562-6266;  
hwcarte@megavision.com

**Kirk's Do-It-Yourself Brew**  
1150 Cornhusker Hwy.  
Lincoln, NE 68521  
402-476-7414

## NEVADA

**Mr. Radz Homebrew Supply Shop**  
4972 S. Maryland Pkwy. #4  
Las Vegas, NV 89119  
(702) 736-8504; Outside NV; (800)  
465-4723; FAX (702) 736-7942;  
mrradzhb@aol.com

## NEW HAMPSHIRE

**Hops + Things**  
122 E. Main St.  
Tilton, NH 03276-5125  
(603) 286-7209;  
brewmaster@cyberportal.net

**Hops & Dreams**  
Atkinson, NH 03811  
(888) BREW-BY-U;  
http://www.de-inc.com/~hdreams

**Beer Essentials**  
611 Front St.  
Manchester, NH 03102  
(603) 624-1080; (800) 608-BEER

**The Seven Barrel Brewery Shop**  
Rt. 12-A at Exit 20, Interstate 89  
West Lebanon, NH 03784  
(603) 298-5566

## NEW JERSEY

**The Barnegat Bay Brewing Co.**  
215 Route 37 W.  
Toms River, NJ 08755  
(800) HOP-ON-IT

**BEERCRAFTERS Inc.**  
110A Greentree Rd.  
Turnersville, NJ 08012  
(609) 2 BREW IT

**The Brewmeister**  
115 N. Union Ave.  
Cranford, NJ 07016  
(908) 709-9295; (800) 322-3020

**Cumberland Brew Works**  
1101 N. 2nd St., Reema Plaza  
Millville, NJ 08332  
(609) 825-0040

**Homebrew Unlimited  
(inside Frames Unlimited)**  
2663 Nottingham Way  
Trenton, NJ 08619  
(609) 586-7837

**Hop & Vine**  
11 DeHart St.  
Morristown, NJ 07960  
(201) 993-3191; FAX (201) 993-3193;  
http://www.altitude.com/hop&vine

**The Keg & Barrel**  
535 Vaughn Ave.  
Forked River, NJ 08731  
(888) BRU-BEER

**Red Bank Brewing Supply**  
67 Monmouth St.  
Red Bank, NJ 07701  
(908) 842-7507; (800) 779-7507

**Small Change Homebrew Depot**  
82 Nassau St., Suite 20  
Princeton, NJ 08542  
(609) 252-1800; FAX (609) 252-1800;  
schd@pluto.njcc.com

**U-Brew Co.**  
319 1/2 Millburn Ave.  
Millburn, NJ 07041  
(201) 376-0973; (201) 376-0493;  
DJBrew@AOL.COM

**Wine Rack**  
293 Route 206  
Flanders, NJ 07836  
(201) 584-0333

## NEW MEXICO

**Southwest Homebrew Supplies**  
4609 Snapdragon Rd. N.E.  
Albuquerque, NM 87120  
FAX (505) 890-6301; (800) 457-8074;  
http://sw-homebrew.com;  
theguys@sw-homebrew.com

## NEW YORK

**Arbor Wine & Beermaking Supplies Inc.**  
23 E. Main St.  
East Islip, NY 11730  
(516) 277-3004; FAX (516) 277-3027;  
http://www.hhog.com/arbor;  
arborbeer@aol.com

**At Home Warehouse Distributors**  
PO BOX 185  
Clarence, NY 14031  
(800) 210-8585; FAX (716) 681-0284  
AHWD@ag.net;  
http://WWW.AHWD.COM

**Brewers Den**  
24 Bellemeade Ave.  
Smithtown, NY 11787  
(516) 979-3438; (800) 499-BREW

**The Brewery**  
11 Market St.  
Potsdam, NY 13676  
(315) 265-0422; (315) 265-0647;  
(800) 762-2560

**The Brew Shop @ Cornell's**  
310 White Plains Rd.  
Eastchester, NY 10707  
(800) 961-BREW; FAX (914) 961-  
8443; brewshop@cornells.com;  
http://www.cornells.com

**D.P. Homebrew Supply**  
1998 E. Main St., Route 6  
PO Box 625  
Mohegan Lake, NY 10547  
(914) 528-6219

**E.J. Wren Homebrewer Inc.**  
Ponderosa Plaza (behind Heids)  
off Old Liverpool Rd.  
Liverpool, NY 13088  
(315) 457-2282; (800) 724-6875

**East Coast Brewing Supply**  
124 Jacques Ave.  
PO Box 060904  
Staten Island, NY 10306  
(718) 667-4459; FAX (718) 987-3942  
http://virtumall.com/EastCoast  
Brewing/ECBMain.html

**Great Lakes Brew Supply**  
310 Adams Ave  
PO BOX 8  
Endicott, NY 13761-0008  
(607) 786-8844; FAX (607) 785-8729;  
glbs@aol.com

**Heller's Homebrew Supplies, Inc.**  
120 Milton Ave.  
Syracuse, NY 13204  
(315) 426-1044

**The Homebrew Experience**  
PO Box 3595  
Kingston, NY 12401  
(888) BREW-GUYS (toll free);  
brewguys@brewguys.com;  
http://www.brewguys.com/brew  
page.htm

**The Brews Brothers at KEDCO -  
Beer & Wine Supply Store**  
564 Smith St.  
Farmingdale, L.I., NY 11735-1168  
(516) 454-7800; FAX (516) 454-4876;  
(800) 654-9988 (outside N.Y. only)

**New York Homebrew**  
221 Old Country Rd.  
Carle Place, NY 11514  
(800) YOO-BREW; FAX (516) 294-1872

**Niagara Tradition Homebrew-  
ing Supplies**  
7703 Niagara Falls Blvd.  
Niagara Falls, NY 14304  
(716) 283-4418; (800) 283-4418

**Party Creations**  
RD 2 Box 35 Rokeby Rd.  
Red Hook, NY 12571  
(914) 758-0661

**Hop, Skip & A Brew**  
58-07 Metropolitan Ave.  
Ridgewood, NY 11385  
(718) 821-6022

## NORTH CAROLINA

**Alternative Beverage**  
114-O Freeland Lane  
Charlotte, NC 28217  
(704) 527-9643; (800) 365-BREW

**American Brewmaster**  
3021-5 Stoneybrook Dr.  
Raleigh, NC 27604  
(919) 850-0095

**Brew Better Supply**  
10207 C Chapel Hill Rd.  
Morrisville, NC 27560  
(919) 467-8934; (800) 915-BREW  
BREW BETTER @AOL.COM

**City Beverage Homebrew Shop**  
915 Burke St.  
Winston-Salem, NC 27101  
(910) 722-2774; (910) 725-1481; FAX  
(910) 725-1481

**Homebrew Adventures**  
9240 Albermarle Rd.  
Charlotte, NC 28227-2624  
(704) 535-2277; (888) 785-7766; FAX  
(704) 535-2060; homebrew@home-  
brewadventures.com;  
http://www.homebrewadventures.com

**Xtract Xpress Mail Order Co.**  
109 Barden Dr.  
Kernersville, NC 27284  
(910) 643-7798; (800) 970-7999;  
kscholl@worldnet.att.net

## NORTH DAKOTA

**Happy Harry's Bottle Shops**  
2051 32nd Ave. S.  
Grand Forks, ND 58201  
(800) 367-BREW; (701) 780-0902;  
FAX (701) 780-0905



## OHIO

**The Grape and Granary**  
1302 E. Tallmadge Ave.  
Akron, OH 44310  
(216) 633-7223

**JC Homebrewing Co.**  
State Route 43 (Main St.)  
PO Box 44  
East Springfield, OH 43925  
(800) 899-5180  
<http://www.clover.net/jcbrew/home.htm>; [jcbrew@clover.net](mailto:jcbrew@clover.net)

**Portage Hills Vineyards**  
1420 Martin Rd.  
Suffield, OH 44260  
(800) 418-6493;  
[portage@ix.netcom.com](mailto:portage@ix.netcom.com);  
<http://www.portagehills.com/portage>

## OKLAHOMA

**Professional Brewers LLC**  
10902 N. Pennsylvania Ave.  
Oklahoma City, OK 73120-7610  
(405) 752-7380; FAX (405) 235-0439;  
<http://www.draughters.com/probrew>

## OREGON

**F.H. Steinbart Co.**  
234 S.E. 12th St.  
Portland, OR 97214  
(503) 232-8793

**Home Fermenter Center**  
123 Monroe St.  
Eugene, OR 97402  
(541) 485-6238; (541) 485-2220

**Homebrew Heaven**  
1292 12th St. S.E.  
Salem, OR 97302  
(503) 375-3521

## PENNSYLVANIA

**Beer Unlimited**  
Routes 30 and 401  
Great Valley Shopping Center  
Malvern, PA 19355  
(610) 889-0905

**Beer Unlimited**  
515 Fayette St.  
Conshohocken, PA 19428  
(610) 397-0666

**Bierhaus International**  
3723 W. 12th St.  
Erie, PA 16505  
(814) 833-7747; (814) 838-4090;  
[bierhaus@erie.net](mailto:bierhaus@erie.net)

**Country Wines**  
3333 Babcock Blvd., Suite 2  
Pittsburgh, PA 15237-2421  
(412) 366-0151;  
<http://www.ontv.com/pp/ctrywine/index.htm>

**The Frothy Shoppe**  
4807 SR 103 North  
Leviston, PA 17044  
(717) 242-8744; FAX (717) 899-7723

**Home Sweet Homebrew**  
2008 Sansom St.  
Philadelphia, PA 19103  
(215) 569-9469; FAX (215) 569-4633;  
[homsweet@voicenet.com](mailto:homsweet@voicenet.com)

**Keystone Homebrew Supply**  
779 Bethlehem Pike  
Montgomeryville, PA 18936  
(215) 855-0100; FAX (215) 855-4567

**Mr. Steve's Homebrew Supplies-West**  
4342 N. George St.  
Manchester, PA 17345  
(717) 266-5954; (800) 815-9599;  
FAX (717) 266-5954;  
[brewmutt@aol.com](mailto:brewmutt@aol.com);  
<http://www.netresolve.com/mrsteve>

**Mr. Steve's Homebrew Supplies-East**  
1027 Dillerville Rd.  
Lancaster, PA 17603  
(717) 391-9655; [brewmutt@aol.com](mailto:brewmutt@aol.com);  
<http://www.netresolve.com/mrsteve>

**Triangle Homebrewing Supply**  
2821 Penn Ave.  
Pittsburgh, PA 15222  
(412) 434-8333; FAX (412) 434-8330;  
[delbrew@pgh.nauticom.net](mailto:delbrew@pgh.nauticom.net)

## RHODE ISLAND

**Basement Brew-Hah Inc.**  
PO Box 7574  
Warwick, RI 02887  
(401) 727-1150; (800) 213-BREW

**Brew Horizons**  
150 Wood St.  
Coventry, RI 02816  
(401) 826-3500; (800) 589-BREW;  
[brewhorizons@ids.net](mailto:brewhorizons@ids.net);  
<http://www.brewhorizons.com>

## SOUTH CAROLINA

**Carolina Wine and Cheese**  
54 1/2 Wentworth St.  
Charleston, SC 29401  
(803) 577-6144; FAX (803) 577-6155

**U-BREW**  
1207 HWY 17 S.  
N. Myrtle Beach, SC 29582  
(803) 361-0092; (800) 845-4441

## TENNESSEE

**Allen Biermakens**  
4111 Martin Mill Pike  
Knoxville, TN 37920  
(615) 577-2430; (800) 873-6258

**New Earth Homebrewing & Hydroponics**  
139 Northcreek Blvd.  
Goodlettsville, TN 37072  
(615) 859-5330; (800) 982-4769;  
[HYDROBREW@aol.com](mailto:HYDROBREW@aol.com)

## TEXAS

**Brew Masters**  
3301 S. 14th, Suite 27  
Abilene, TX 79605  
(915) 690-1105; FAX (915) 690-1205;  
[prisg@camalott.com](mailto:prisg@camalott.com)

**Classic Fermentations**  
3307 Canyon Dr.  
Amarillo, TX 79110  
(806) 342-9930; (888) 838-BREW  
(2739); [benws5r@arn.net](mailto:benws5r@arn.net)

**C & E Discount Supply**  
PO Box 30660  
Paris, TX 75462  
(903) 785-7232; (800) 771-KEGG

**DeFalco's Home Wine & Beer Supplies**  
2415 Robinhood  
Houston, TX 77005  
(713) 523-8154; FAX (713) 523-5284;  
(800) 216-2739

**Fruit O' the Vine**  
1616 McDonald Rd.  
Tyler, TX 75701  
(800) 561-9221; (903) 593-4688;  
FAX (903) 561-9291

**Homebrew Supply of Dallas**  
777 South Central Expwy.  
Richardson, TX 75080  
(214) 234-5922; (800) 270-5922;  
FAX (214) 234-5922;  
[jmorgan@primaview.com](mailto:jmorgan@primaview.com);  
[http://www.primaview.com/primaview/homebrew\\_supply](http://www.primaview.com/primaview/homebrew_supply)

**Homebrew Headquarters**  
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Dallas, TX 75206  
(214) 821-7444; Order lines: (800) 966-4144, (800) 862-7474

**Homebrew Headquarters — North**

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Richardson, TX 75080  
(214) 234-4411; (214) 699-1439

**Homebrew Headquarters — West**  
900 E. Copeland, Suite 120  
Arlington, TX 76011  
(817) 792-3940; (800) 862-7474

**Lubbock Homebrew Supply**  
1718 Ave. H  
Lubbock, TX 79401  
(800) 742-BREW; (806) 763-7480

**Shamrock Brewing Supplies**  
PO Box 911  
Sinton, TX 78387  
(512) 364-5490; (800) 398-2973;  
73503.3237@compuserve.com;  
[http://ourworld.compuserve.com/homemepages/D\\_Wendel/index.htm](http://ourworld.compuserve.com/homemepages/D_Wendel/index.htm)

**St. Patrick's of Texas Brewers Supply**  
12922 Staton Dr.  
Austin, TX 78727  
(512) 832-9045; (800) 448-4224;  
FAX (512) 832-8552;  
[stpats@wixer.bga.com](mailto:stpats@wixer.bga.com);  
<http://www.stpats.com>

**St. Patrick's at Waterloo Brewing**  
401A Guadalupe St.  
Austin, TX 78701  
(512) 499-8544; FAX (512) 499-8621;  
[stpats@wixer.bga.com](mailto:stpats@wixer.bga.com);  
<http://www.stpats.com>

**The Winemaker Shop**  
5356 W. Vickery  
Fort Worth, TX 76107  
(817) 377-4488; (800) IT BREWS;  
FAX (817) 732-4327

## UTAH

**The Beer Nut Inc.**  
1200 S. State  
Salt Lake City, UT 84111  
(801) 531-8182; FAX (801) 531-8605;  
(800) 626-2739; [sales@beernut.com](mailto:sales@beernut.com);  
<http://www.xmission.com/~beernut>

**Brew-Yers**  
1879 S. Main St., Suite 160  
Salt Lake City, UT 84115  
(801) 484-8809; [brewyers@aros.net](mailto:brewyers@aros.net);  
<http://www.aros.net/~brewyers>

## VIRGINIA

**The Brewmeister**  
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(804) 595-HOPS

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Lower Level of Peddler Antiques  
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Forest, VA 24551  
(804) 385-0077

**Rocktown Brewers**  
52 E. Market St.  
Harrisonburg, VA 22801  
(540) 432-6799; [furges@rica.net](mailto:furges@rica.net);  
<http://home.rica.net/furges>

**Vintage Cellar**  
1313 S. Main St.  
Blacksburg, VA 24060  
(540) 953-CORK; (800) 672-WINE;  
[vcellar@nrv.net](mailto:vcellar@nrv.net);  
<http://www.nrv.net/~vcellar/>

**The Weekend Brewer**  
4205 West Hundred Rd.  
Chester, VA 23831  
(804) 796-9760; FAX (804) 796-9561; [Bequipment@gnn.com](mailto:Bequipment@gnn.com);  
<http://members.gnn.com/bequipment/wkendbr.htm>

## WASHINGTON

**The Beer Essentials**  
15219 Pacific Ave. S.  
Tacoma, WA 98444  
(206) 536-8840; (800) 685-2739;  
[robn2beer@aol.com](mailto:robn2beer@aol.com)

**Brewer's Warehouse**  
4520 Union Bay Place N.E.  
Seattle, WA 98105  
(206) 527-5047

**Cascade Brewing Supplies**  
224 Puyallup Ave.  
Tacoma, WA 98421  
(206) 383-8980; (800) 700-8980;  
[GreatBrew@aol.com](mailto:GreatBrew@aol.com)

**The Cellar Homebrew**  
14411 Greenwood N.  
Seattle, WA 98133  
(206) 365-7660; (800) 342-1871;  
[homebrew@aa.net](mailto:homebrew@aa.net);  
<http://www.cellar-homebrew.com>

**The Home Brewery**  
9109 Evergreen Way  
Everett, WA 98204  
(800) 850-2739;  
[HmBrewery@aol.com](mailto:HmBrewery@aol.com)

**Kim's Place**  
Smokey Point Plaza  
3405 172 St. N.E.  
3405 172nd St. N.E.  
Arlington, WA 98223  
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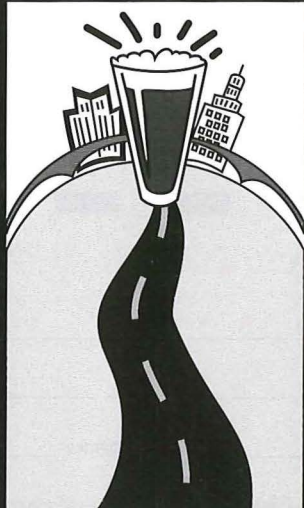
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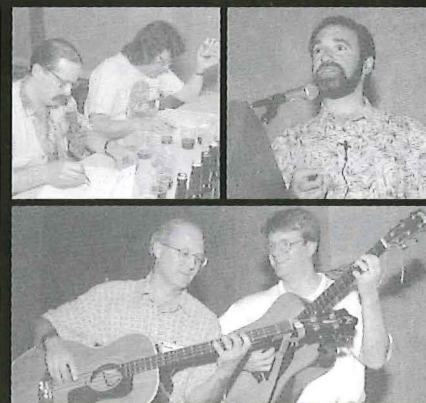


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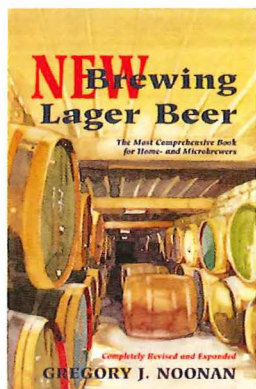


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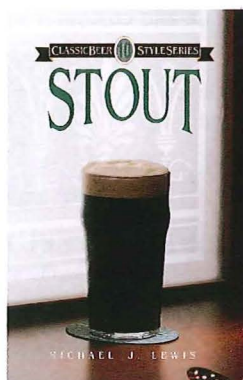
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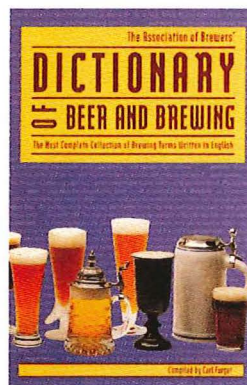
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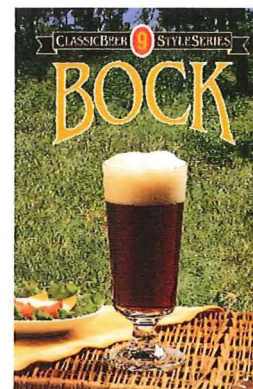
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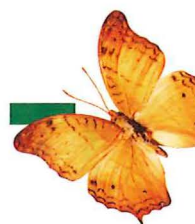
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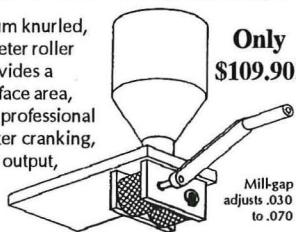
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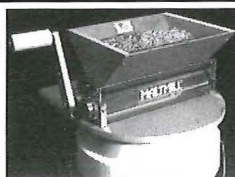
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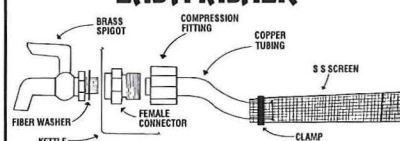
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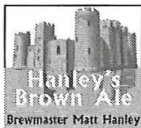
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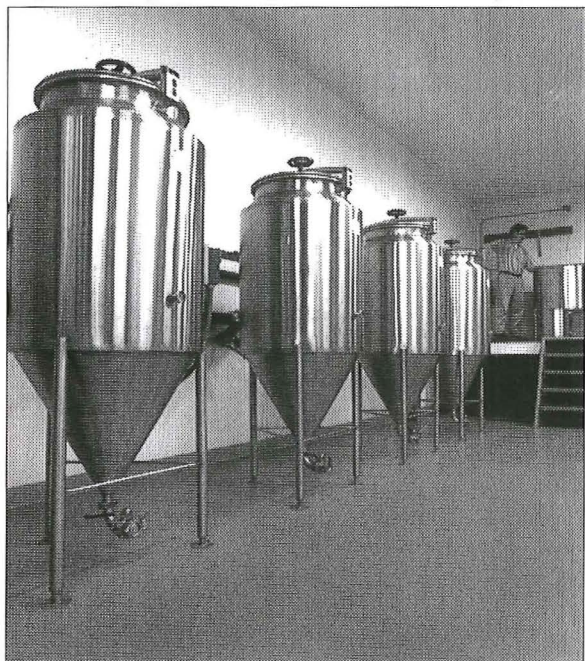
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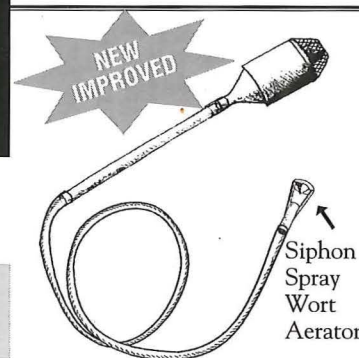
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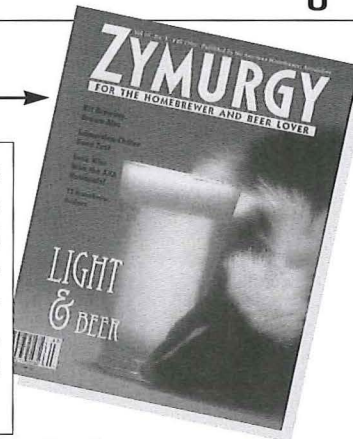


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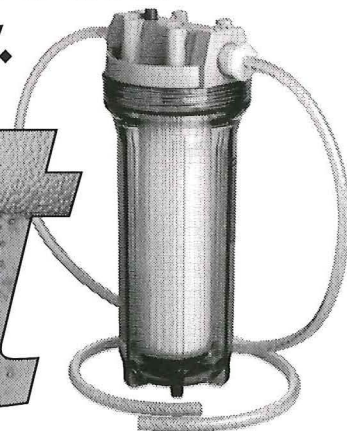
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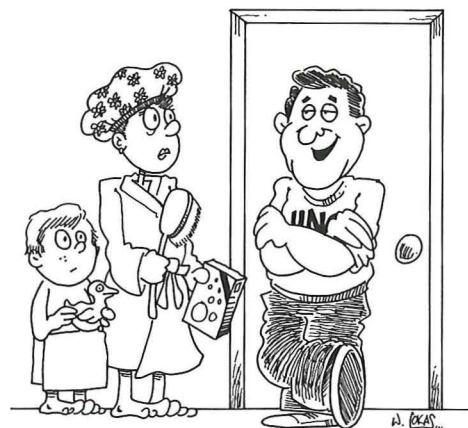
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**"I don't know how to tell you this, Mike, but we're going to need this room for the baby ..."**



**"Sorry, folks, but nobody uses that bathtub until I'm ready to bottle!"**

Bill Cokas, longtime cartoonist, recently began homebrewing.

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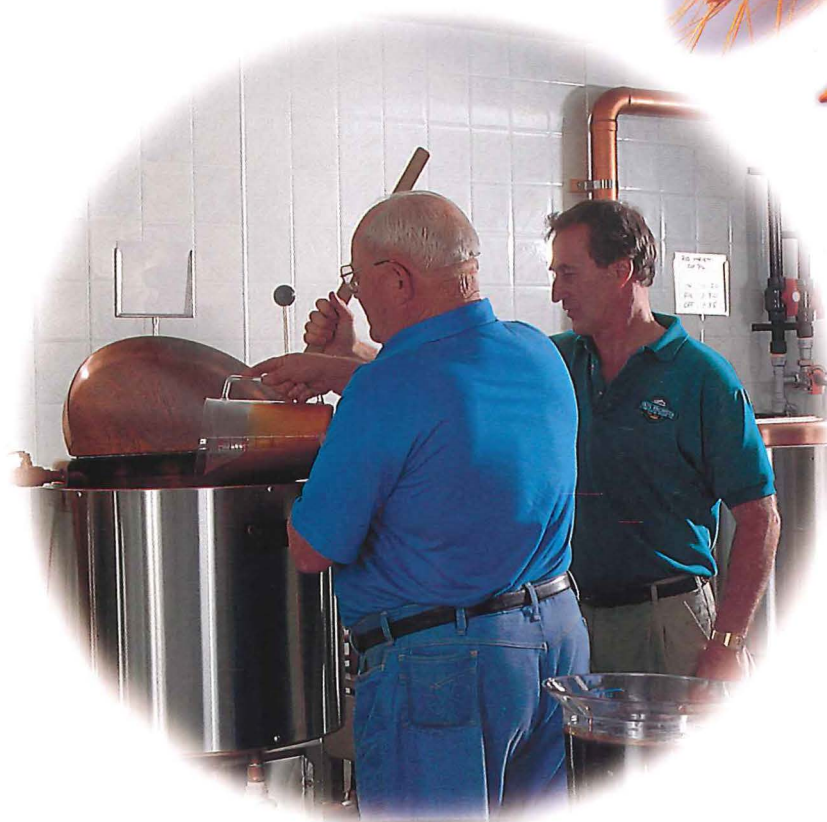
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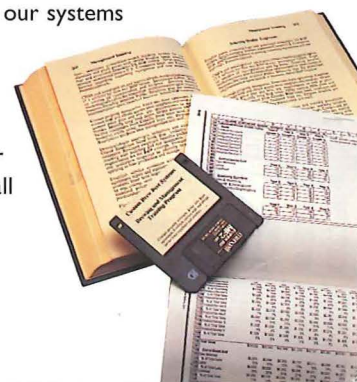
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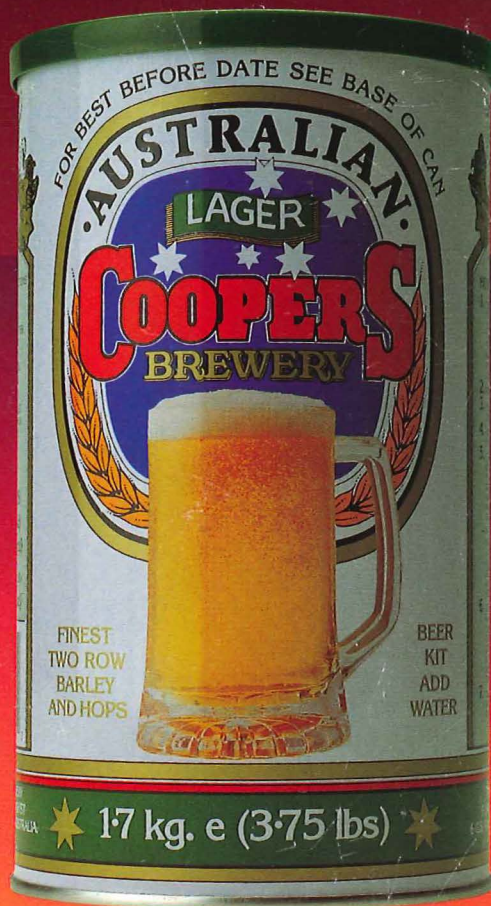
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