

Vol. 19 No. 2 Summer 1996 Published by the American Homebrewers Association

ZYMURGY

FOR THE HOMEBREWER AND BEER LOVER

Extracting
the
Essentials

Porter:
Pints of
Perfection

Brewing
Adventures
with
Wendy & Bill

Complete AHA Club List
21 Recipes

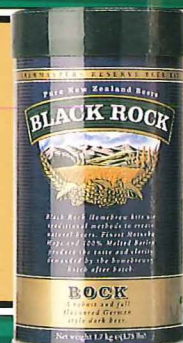
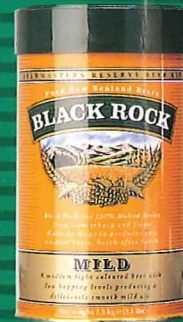
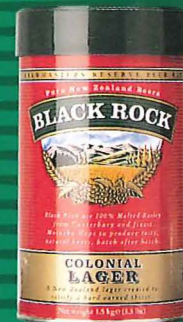
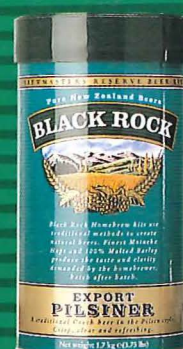
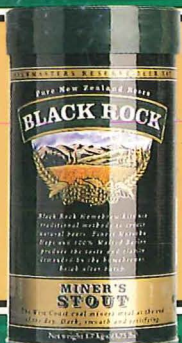
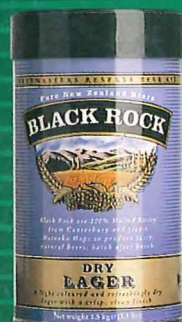
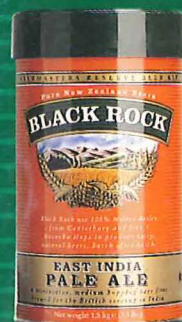
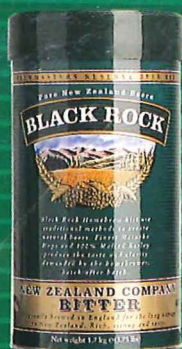


U.S. \$6.50 Can. \$9

Pure New Zealand Beers

BLACK ROCK

*from natural
ingredients
we craft
unnatural
pleasures...*



EXCLUSIVE IMPORTERS, BLACKROCK BREWING COMPANY OF NORTH AMERICA

CANADA

Québec and Maritimes
DISTRIVIN LIMITÉE
950 Place Trans-Canada
Longueuil,
Québec J4G2M1
Tel: 1-800-363-8581
Fax: 514-442-3531

Ontario
WINEXPERT INC.
710 South Service Road,
Unit "A", Stony Creek,
Ontario L8E5S7
Tel: 1-800-267-2016
Fax: 416-643-9161

Western Canada
BREWING INC.
1622 Kebet Way
Port Coguitlam,
B.C. V3C 5W9
Tel: 604-941-5588
Fax: 604-941-9811

USA

F.H. STEINBART
COMPANY
234 S.E. 12th Avenue
Portland, OR 97214
Tel: 503-232 8793
Toll Free Tel:
1-800-735 8793
Fax: 503-238 1649

L.D. CARLSON CO.
463 Portage Blvd.
Kent, OH 44240
Tel: 1-800-321-0315
Fax: 1-800-848-5062

CROSBY & BAKER LTD.
Atlanta, Georgia
Tel: 1-800-666-2440
Westport, Massachusetts
Tel: 1-800-999-2440

HOMEBREW ♦ SWEET ♦ HOMEBREW



Muntons

QUALITY BEERS FOR THE DISCERNING BREWER



MAHOGANY COASTTM

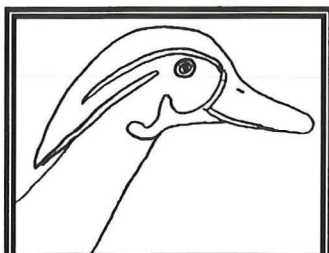
Finest Quality English Malt Extract
for Your Hand-Crafted Beers

Mahogany Coast Brewing Co.

Importer: G.W. KENT, INC. Tel.: 1-800-333-4288 Fax: 1-800-500-7505

HomeBrewers' Market

AMERICA'S CLEAR CHOICE FOR HOMEBREWING SUPPLIES AND EQUIPMENT



"Homebrewing is not a trend."
Forrest D. Quackmeyer
HomeBrewers Market P.O. Box 847
Eldersburg, MD 21784

We've been brewing beer at home since the days of survival brewing. That's 20 years of brewing. Find out why HomeBrewers' Market can provide you with the quality supplies and equipment that have kept us brewing at home since 1975. We want to get you started & keep you going.

Call or Write Today For Your Free Catalog!

1-800-990-9004

1-410-549-9521

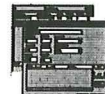


Fax 1-410-549-5945

Introducing **Brew Chief**

Copyright © 1995.

*Revolutionary New Windows™ Brewing
Software for Beginner, Intermediate
and Advanced Brewers!*



Features Include:

- Fast, Accurate, Dependable, Easy and Intuitive!
- Recipe and Batch Log Databases
- Create & Print *Color* Labels
- Recipe Formulation
- Mash Calculations
- Conversion Utilities
- Instructions & Tips
- On-line Help
- And Much, Much More...

**New Introductory
Price
Only \$29.95
Suggested Retail
Price \$69.95**

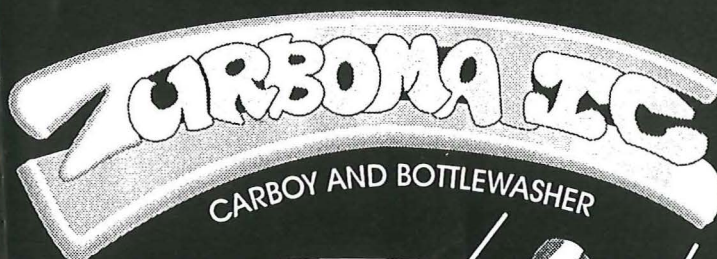
Order Today!
312-248-0474

Send a Check or MO for \$29.95 + \$3 SH (IL residents add 8.75% sales tax) payable to "Chicago Beer Co." PO Box 642893 Chicago, IL 60664-2893. email: mattm@mcs.net.

Brew Better Beer with Brew Chief!

Brew Chief Requires Windows™ 3.1 or Windows 95™.

built to last!



- ☒ Solid Brass and Stainless Steel
- ☒ Automatic Shut-off
- ☒ No Solder
- ☒ Easy On Plumbing
- ☒ Faucet Adapter Available



"TURBOMATIC"
is manufactured
in Canada and
distributed near you.



**CHATEAU
DISTRIBUTORS LTD.**
VANCOUVER, CANADA

**CALL OR FAX FOR
FURTHER INFORMATION:**
PHONE: (604) 882-9692
FAX: (604) 882-9697

The Vineyard
Home Brewers Vintners Supplies

**OVER 140
MALT EXTRACTS**
IMPORTED & DOMESTIC

- 20 + GRAIN MALTS
- 15 + HOP VARIETIES
- LEAF - PELLETS - PLUGS*
- LIQUID & DRY YEAST
- FERMENTATION EQUIPMENT
- WINE MAKING SUPPLIES
- LITERATURE

FREE Catalog FAST Service
Master Card & Visa Accepted

123 Glen Ave, Upton, MA 01568

1-800-626-2371

COUNTER PRESSURE BOTTLE FILLER

The cost effective and EASY way to fill your bottles from a keg system.

INT'L ORDERS

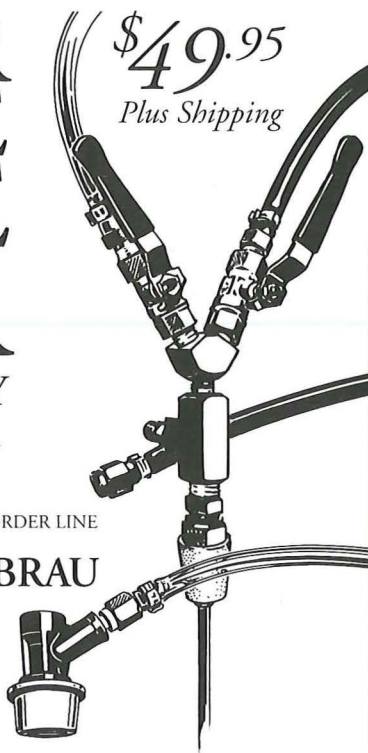
218.384.9844

24-HOUR VOICE/FAX ORDER LINE
(USA & CANADA)

1-800-972-BRAU

Braukunst
Homebrewers's Systems

55 Lakeview Drive • Carlton, MN 55718-9220



\$49.95
Plus Shipping

ZYMURGY[®]

FOR THE HOMEBREWER AND BEER LOVER

Journal of the American Homebrewers Association[®]

THE AMERICAN HOMEBREWERS ASSOCIATION[®] MISSION STATEMENT

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

Publisher — American Homebrewers Association

Editor — Dena Nishek

Associate Editor — Kathy McClurg

Assistant Editor — Lois Canaday

Technical Editors — George Fix, Ray Daniels,

Phil Fleming, Al Korzonas

Editorial Advisers — Karen Barela,

Caroline Duncker, Elizabeth Gold,

Charlie Papazian, James L. Spence

Art Director — Vicki Hopewell

Art Director Assistant — Stephanie Johnson

Graphics/Production Director — Tyra Shearn Segars

Graphic Designer — Wendy Lyons

Graphic Assistant — Melissa VanArsdale

Advertising Manager — Linda Starck

Advertising Assistant — Christopher Lowenstein

Circulation Director — Anna Deligio

AMERICAN HOMEBREWERS ASSOCIATION

President — Karen Barela

Administrator — James L. Spence

Assistant — Caroline Duncker

AHA Board of Advisers

Judy Ashworth, California; Don Hoag, Minnesota; Scott Birdwell, Texas; Michael Jackson, England; Ed Busch, New Jersey; Bill Murphy, Massachusetts; Steve Casselman, California; Charlie Olchowski, Massachusetts; Fred Eckhardt, Oregon; George Fix, Texas; John Sterling, Missouri; Jeff Frane, Oregon

The American Homebrewers Association is a subsidiary of the Association of Brewers. Membership is open to everyone. *Zymurgy* is the journal of the American Homebrewers Association and is published five times a year. Annual memberships which include subscriptions (payable in U.S. dollars) are \$33 U.S., \$38 Canadian and \$51 international. Changing your address? Let us know in writing, please.

Zymurgy welcomes letters, opinions, ideas, article queries and information in general from its readers. Correspondence and advertising inquiries should be directed to *Zymurgy*, PO Box 1679, Boulder, CO 80306-1679, (303) 447-0816, FAX (303) 447-2825, <http://www.aob.org/aob>. Via e-mail contact AHA President Karen Barela at 75250.1350 or karen@aob.org, AHA Administrator James Spence at 70740.1107 or james@aob.org and *Zymurgy* Editor Dena Nishek at 73252.3571 or dena@aob.org. All material ©1996, American Homebrewers Association. No material may be reproduced without written permission from the AHA.

(ISSN 0196-5921)

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

Printed in the USA by Brown Printing, Waseca, Minn. For newsstand distribution information contact Ingram Periodicals, Inc., 1226 Heil Quaker Blvd., LaVergne, TN 37086.

GET THE **JET** IT BLASTS

The Original and Incredible Carboy and Bottle Washer

➤ Automatic shutoff

➤ All brass construction

➤ Cleans your bottles fast

➤ Attaches easily to faucet

**Lifetime
Guarantee**

Inquire at your local shop or call 616-935-4555

Jet Carboy and Bottle Washer Co.

3301 Veterans Drive, Traverse City, MI 49684





36



46



62



FEATURES

EXTRACTING THE ESSENTIALS

BILL METZGER

36

A PEEK INTO PORTER'S PAST

KEITH THOMAS

46

PERFECT YOUR PORTER

TERRY FOSTER

54

ADVENTURES IN BREWING —

A PROFILE STARRING WENDY AARONSON & BILL RIDGELY

SCOTT BICKHAM

62

AHA REGISTERED HOMEBREW CLUB LIST

BETWEEN PAGES 68 & 69

DEPARTMENTS

Editorial	7
Dear Zymurgy	9
Association News	13
Calendar	18
Brew News	21
Sponsors	28
Winners Circle	75
Dear Professor	83
New Products	87
Reviews	95
Homebrew Connection	103
Classified	109
Last Drop	112
Advertiser Index	114

COLUMNS

JACKSON ON BEER Elemental Homebrewing: Midnight Sun, Saunas and Sahti	25
MICHAEL JACKSON	
HOMEBREW COOKING The Rebirth of Summer and Brewing	30
JOSEPH ASCOLI	
TIPS AND GADGETS Quick Tips from Homebrewers Like You	35
OUR MEMBERS	
FOR THE BEGINNER Hop Basics	69
DAVE BONE	
WORLD OF WORTS Klibbety Jibbit Lager	81
CHARLIE PAPAZIAN	
BEST FROM KITS Quaffable German Ales	91
LARRY JOHNSON	
HOMEBREW CLUBS The Write Stuff: How to Publish a Club Newsletter	99
CAROLINE DUNCKER	

ALEXANDER'S SUN COUNTRY

MALT EXTRACTS CONCENTRATED BREWERS WORT

Award Winning Quality
&
Years of Experience



Ask your local retailer for Alexander's brand of Malt Extracts. By using 100% grains and *no additives*, we assure you rich flavors for brilliant brews. We produce a full line of extracts.

Wholesale Only

Phone 209 334-9112 For your nearest dealer



CUSTOM PROCESSED MALT EXTRACTS
Full Line of Grains & Grape Concentrates

18678 N. Highway 99, Acampo, CA 95220

ASSOCIATION OF BREWERS INC.

The Association of Brewers Inc. is a Colorado non-profit corporation for literary and educational purposes to benefit brewers of beer and all those interested in the art of brewing. The Association of Brewers is exempt from Federal Income Tax under Section 501(c)(3) of the Internal Revenue Code. All gifts, grants and contributions are tax-deductible.

The Association of Brewers has four divisions: American Homebrewers Association®, Institute for Brewing Studies, Brewers Publications and the Great American Beer Festival®.

ASSOCIATION OF BREWERS

President _____ Charlie Papazian
Vice President _____ Cathy L. Ewing
Marketing Director _____ Sheri Winter
Operations Director _____ Robert Pease

AMERICAN HOMEBREWERS ASSOCIATION®

President _____ Karen Barela

INSTITUTE FOR BREWING STUDIES

Director _____ David Edgar

BREWERS PUBLICATIONS

Publisher _____ Elizabeth Gold

GREAT AMERICAN BEER FESTIVAL®

Director _____ Marcia Schirmer

AOB Board of Directors

Marlin Buse, Harris Faberman, Sandi Genova, Stuart Kingsbery, Charles Kirkpatrick, Charles Matzen, Charlie Papazian, Loran Richardson, Jim Christoph, Liz Weimer

For information on the Association of Brewers or any of its divisions, write PO Box 1679, Boulder, CO 80306-1679; call (303) 447-0816, FAX (303) 447-2825, aob@aob.org or <http://www.aob.org/aob> on the World Wide Web.

William's Brewing Presents: Our Home Brewing Catalog



Since 1979, William's Brewing has been the leader in mail order home brewing.

Our free 40-page Catalog features everything for the home brewer, including home breweries, malt extracts, 17 hop varieties, informative articles, recipes, draft systems, and much more.

**Order Your Free
Catalog Today!**

WILLIAM'S BREWING

P.O. Box 2195-Y9

San Leandro CA 94577

Phone Orderline: 800-759-6025

Fax Orderline: 800-283-2745

Allow 3 weeks for free delivery

Get Involved Join a Club!

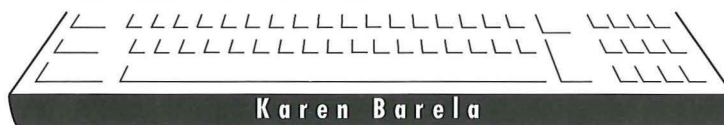
The homebrewing community is growing, so take this opportunity to get involved with other homebrewers in your area.
Your Homebrew Will Thank You!

To find the nearest AHA registered homebrew club in your area, contact the AHA, PO Box 1679, Boulder, CO 80306-1679, USA; (303) 447-0816; info@aob.org; <http://www.aob.org/aob> or FAX (303) 447-2825.



zym 19

EDITORIAL



Surf the Web

<http://www.aob.org/aob>

As you know, the World Wide Web functions as an interlinking computer network where everyone is connected to everyone else on Internet. You can use the Web Crawler or similar search programs to find topics that are of interest to you. If you type in beer, homebrewing or breweries you will find myriad stuff all over the Web that is fun and informative for beer lovers.

One of the things that make the homebrewing and craft-brewing world so much fun is that we are all part of a community of beer lovers. And, more and more, our community's borders are vanishing and we become part of a global group of beer lovers. Because the AHA is in the business of beer education — collecting and disseminating information about beer and homebrewing — the Web has become a useful tool for us. We're able to provide timely information to anyone anywhere in the world about homebrewing, beer appreciation and all of our related membership services and activities.

The AHA is in a unique situation in that we are one-quarter of a larger whole. No other

beer-related association, magazine or brewspaper has the kind of access to beer and brewing information that our parent organization, the Association of Brewers, and its divisions produce. There are three divisions: the American Homebrewers Association®, dedicated to the art and science of homebrewing; Brewers Publications, dedicated to publishing books on beer and brewing; the Institute for Brewing Studies, dedicated to the craft-brewing industry; and the Great American Beer Festival®, an affiliate of the AOB, Brewing Matters, which produces North America's largest beer festival.

The AHA is dedicated to providing cutting-edge information. *Zymurgy* is our most visible means of bringing you this information, but another way is through our Web site. A lot of "automagical" stuff happens there and it is by far your best resource for timely information.

For example, the AHA calendar of events is updated at least once a week. You can find a brewery list from the IBS that has links to brewery home pages. Basically, there's a ton of stuff out there. Here's just a tiny example of what you can find at our site:

- A "virtual" feed from the GABF, complete with photos and videos of the Festival as it happened last October.

- The AHA 1996 National Homebrew Competition Rules and Regulations.

- How to brew your first batch instructions.

- Book listings from Brewers Publications, complete with titles, tables of contents and book highlights.

- Links to homebrew club pages, homebrew supply shops and a variety of beer-related services, programs and companies.

- An order form for all of the products and services provided by the AHA and AOB.

As homebrewers, you are the best educated of all the beer enthusiasts and any beer consumers. The AHA is dedicated to providing you the information and access to the education you need to stay in tune with what's happening globally in the world of beer.

The Association's web site, <http://www.aob.org/aob>, is fun and educational. Plus, it's a great service we are happy to provide for you.

Been surfing lately?

Karen Barela is president of the AHA.



BREW KETTLES



OFFERING A "KEG - FULL"
.....OF GREAT IDEAS!

SABCO INDUSTRIES



**KEGS, 5-GAL'S,
FERMENTERS,
...SYSTEMS.**

STAINLESS, CLEANABLE
NEW, OR RECONDITIONED

IN A WORD...PERFECT!



Call your local Home Brew Dealer
for more information on

**Sabco Home Brew Products or call:
SABCO INDUSTRIES, INC.**

4511 South Ave. • Toledo, OH 43615

Phone: (419) 531-KEGS • Fax: (419) 531-7765

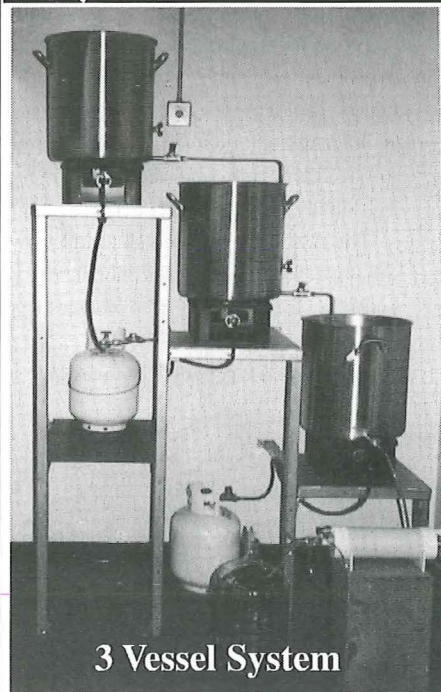
• email: sabco@kegs.com

• Internet: <http://www.kegs.com>



**"BREW-MAGIC"™
SYSTEM**

BREWERS Warehouse



3 Vessel System

**Call for catalog !
(206)527-5047**

4520 Union Bay Pl. NE Seattle Wa. 98105

The 3 Vessel Gravity Feed Brewing System

* No lifting of heavy pots- gravity is our ally * Straight infusion or step mashing * Low pressure propane stoves, with plenty of fire power, good control, and may be jetted for natural gas. * All vessels are heavy gauge, food grade stainless including handles and lids * All welding guaranteed for life * Perforated stainless screens custom cut to fit each vessel * The BITOA wort chiller cools wort in seconds * Complete 10 gal, 15 gal, or 20 gal systems or components available

The One Half Barrel Fermenter

The only TRUE Half Barrel System!

* All 304 stainless construction with welds back-ground and polished * Lock down lid with pressure gauge, pressure relief valve, and Cornelius gas port fitting * Temperature controlled chill band with temperature sensor in a probe well in the cone * Seamless cone has 60° slope for yeast collection and propagation



*"brewing
is
the
only
answer!"*

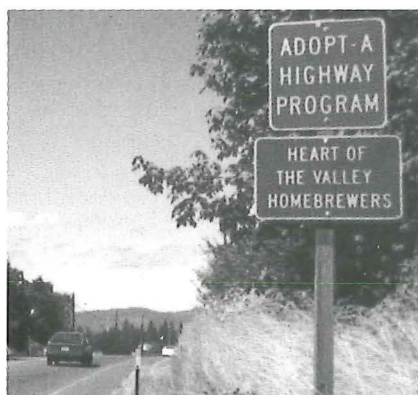


Fermenter

DEAR

Z Y M U R G Y

Our Readers



Roadside Attraction

Dear *Zymurgy*,

A past issue suggested that homebrew clubs consider the Adopt-a-Highway program as a community activity. Heart of the Valley Homebrewers took this good advice and, after 10 months of waiting, were assigned a 2.4-mile stretch along the highway between Corvallis and Albany, Ore. On our first three-hour outing we gathered 30 bags of litter and numerous honks and waves.

This is a great club function and lets our communities know that area homebrewers are responsible citizens interested in improving our surroundings.

Lee Smith, President

Heart of the Valley Homebrewers
Albany, Ore.

Correction

Dear *Zymurgy*,

I have recently received some e-mail enquires as to the accuracy of the formulas and calculated values for Q as given in "From Hot to Cold: A Cool Brew Cruise," by Daniel

McConnell and Kenneth Schramm, in *Zymurgy* Spring 1996 (Vol. 19, No. 1). A check of the formulas as published shows an error in the formula for alpha. It should read:

$$\alpha = -\ln \left[\frac{(1 - E)}{\left(1 - \frac{E \times W_r}{C_r}\right)} \right]$$

The formula for E is also subject to misinterpretation and should be printed as:

$$E = \frac{(T_i - T_f)}{(T_i - C_i)}$$

Using the corrected formulas, the reported values of Q do not agree with the reported values of temperature and flow rates. While the efficiencies (E) are correct in all cases except for the Listermann chillers where the temperatures indicate, respectively, 91.9 and 92.5 percent for the 25-foot and 50-foot chillers, the Q values are noticeably in error in most cases. The correct values are:

MANUFACTURER	E	Q
BREWCO	93.1%	46.48
BREWERS RESOURCE	93.1%	56.40
BREWERS WAREHOUSE	90.0%	34.78
HEART'S HOME BREW	94.4%	102.62
LISTERMANN (25')	91.9%	39.61
LISTERMANN (50')	92.5%	70.96

While the article was generally informative, I was a little disappointed that the significance of Q was not further developed. It communicates the effective cooling capacity of the chiller. If the chiller is supplied with cooling water at a rate Q gallons per hour it will cool Q/5 gph wort from boiling to within 3 degrees F of the coolant inlet temperature. Thus, accepting the Q value

above for the Brewers Warehouse unit it is a 35/5 = 7 gph chiller. Note that I have measured that same chiller at Q = 65.

The effects of doubling the length of the chiller are revealed by Q as well. The reported experimental data show that doubling the length of the Listermann chiller resulted in wort exiting only 1 degree colder but the wort flow rate was nearly double. This is reflected in the corrected Q values above. Doubling the length of the chiller should double its capacity.

A.J. deLange

ajdel@interramp.com

Dear *Zymurgy*,

A.J.'s comments, namely the useful nature of the Q parameter, are important, but I would hesitate to draw any conclusions as to the relative merits of the tested items based on the data presented in the article. The vastly different performance (even after correctly calculating the efficiencies and Qs) reported for two essentially identical units (Listermann 25-foot and Brewers Resource) says that the experiment was not well controlled. The performance of these two should be very close since both use Listermann's end fittings, and presumably the same five-eighths-inch inside-diameter garden hose jacket.

The reported wort flow rates are in the range of 0.3 to 0.4 of the reported Q, and while a little high, they are at least reasonable given the target wort outlet temperature is more than 10 degrees above the coolant temperature. However, I'm concerned the wort flow rate through any of the chillers will vary significantly during the process when driven by gravity alone. This makes the whole operation pretty dynamic, and the collection of data difficult, as all measurements should



really be taken under steady flow conditions. The flow rate through 25 feet of three-eighths-inch copper tube drops by 10 percent for each two inches of height (at the surface of the wort remaining in the kettle) relative to the chiller exit (starting from an initial height of 18 inches). Since the wort flow rates in the article were determined by measuring the time to fill a known volume over an arbitrary interval during the process, the calculated time to cool the entire five gallons and the reported Q may be significantly in error.

Also, if one accepts that the coolant flow rate should be similar to Q for efficient use of coolant, the flow rate used is in all cases far greater than necessary. The closest match is in the case of the Heart's unit, followed by the Listermann 50-foot model, both operated at around 200 percent of the reported Q . The BrewCo unit was the worst, at about 600 percent of its reported Q value. Taking this into account, the several units tested could in fact be very similar in regard to cooling water consumption when properly set up.

Martin Manning
Cincinnati, Ohio

I humbly regret the computational errors that were published in the article "From Hot to Cold." The newly published equation and values as presented by A. J. deLang are correct. The significance of Q was developed in an early version of the paper, but I edited it out to maintain an easy-to-read article. I'm happy the points have now been made.

Valid points are raised by both A. J. deLange and Martin Manning. We were concerned about the difference in performance of the two nearly identical chillers and attributed it to experimental variation because they were tested at different times, by different individuals with different temperature cooling water, thus the experimental conditions were slightly altered. Clearly, repeat measurement would have demonstrated these inconsistencies. We made every attempt to perform the experiments under similar operating conditions, the same temperature drop and head pressure. It should be obvious that wort flow decreases during the siphoning process and therefore we measured wort flow at the beginning of the process to maintain consistency. This should have minimized the inherent error caused by flow dynamics. We thought a pump would have been far better (and indeed used a pump for the immersion chillers article), but that a combination of counterflow chiller and pump was rare in a homebrewer's wort chilling setup.

Let me reiterate the two important points in the article: All chillers performed to specifications and all cooled in a sufficiently rapid manner for five-gallon batches of beer; and the chillers are far better than slow-cooling methods.

Daniel McConnell

Great Grain Graduate

Dear *Zymurgy*,

I would like to thank you for publishing, and Bill Holmes for writing, the article appearing in *Zymurgy* Special Issue 1995 (Vol. 18., No. 4), The Great Grain Issue. I am writing to follow up on the article about Dave West's and my own techniques for full-grain mashing. At the time I brewed my Bohemian Pilsener, I was brewing five-gallon batches. By the time the article was written, I was brewing 10- to 15-gallon batches using the pico-Brewing System that Dave West and Mike O'Brien produce.

Of late, I continue to brew with only grain, but have graduated to brewing in larger quantities. The article mentions that I was considering investing in a pH meter for better brew monitoring. I am happy to report that my new employer has supplied me with a pH meter for use in brewing. In fact, the pH meter comes complete with a 15-barrel brewing system along with two 15-barrel fermenters, one 30-barrel fermenter, six 15-barrel serving tanks and all concomitant equipment. My recipes now call for something on the order of 1,000 pounds of grain per batch.

I would like to thank you once again for the article and let your readers know that seven years of serious, full-grain, scientifically oriented homebrewing can, in fact, lead to an exciting new career.

Sincerely,

Alan Pagliere

Head Brewer, Blue Coyote Brewing Co.
Lansing, Mich.

Congratulations, Alan! —Ed.

More Grain Kudos

Dear *Zymurgy*,

Congratulations! The *Zymurgy* Special Issue 1995 is great. I have wanted to try all grain for a long time but two things held me back: not enough information and fear. This issue has helped with both of those problems. I do, however, have a minor new problem.

I am trying to build a lauter tun. I have decided to use either a Zapap double-bucket system or a Phil's Phalse Bottom in a Gott cooler. They both sound easy, but my question about the Phil's Phalse Bottom is how do I attach the garden hose valve to the cooler? With the Zapap I don't know the difference between a bottling valve and a barrel valve. Several articles recommended not using a bottling valve because it can cause oxidation.

So before I run in fear again, any suggestions? Am I worrying too much? Do I need a homebrew? I think I do.

Thanks,
Todd M. Burr
via Internet



I don't usually recommend brewers attach a garden hose valve to the coolers. It is not that I don't think this is a good idea, I am sure it is dandy, but I don't think it is necessary. My instructions say to simply remove the cooler's spigot and replace it with a drilled stopper (usually a No. 3). Then stick a piece of three-eighths-inch tubing through the stopper and attach the interior end to the false bottom with a short piece of vinyl hose. You can control the flow on the outside with a hose clamp or an in-line valve. This is the simplest method of using Phil's Phalse Bottom in a cooler.

Dan Listermann

Listermann Manufacturing
CompuServe 72723,1707

About the valves, relax, don't worry. There are a few different models of valves or spigots, but they perform similarly. —Ed.

All-Grain Seduction

Dear *Zymurgy*,

Congratulations to the staff at *Zymurgy*. Your Great Grain Special Issue is, no doubt, the best-produced and most informative issue I have ever read. About a year ago I made the move from partial mashes to all grain and haven't looked back since. Your magazine, my local homebrew club (Barley Bandits, Orange, Calif.) and more than a dozen books (mainly David Miller's) have inspired me in the quest to make a better beer. Your latest Special Issue will surely trigger homebrewers to experiment with grain. Those willing to spend the extra time and money eventually will be seduced by the vast creativity and freedom afforded by grain brewing.

Brewing merrily along,

Thomas E. Gaworski

Rancho Santa Margarita, Calif.

A Chilling Correction

Dear *Zymurgy*,

I am writing to advise you of a factual error appearing in *Zymurgy* Fall 1995 (Vol. 18, No. 3). In his article on Oktoberfest, Brad Kraus states that, "Once brewers such as Dreher and Sedlmayr introduced refrigeration to their breweries in the late 1850s they be-

gan brewing lager beers year-round." While it is correct that in 1850 the centuries-old prohibition against summer brewing was officially lifted allowing year-round production, this was neither when mechanical refrigeration nor cooling with harvested ice was introduced. Mechanical refrigeration was not introduced into Bavarian breweries until 1873. This is documented in several places, including *Das Münchner Beer* by Gerhard Merk and Hannes Sieber, 400 Jahre Hofbräuhaus München, 1589 — 1989. According to *Das Münchner Beer*, use of harvested ice was employed in

Sedlmayr's brewery in the 1830s, and at Dreher's beginning in 1837. I'm sure your readers would appreciate the clarification, lest they bear the false impression that mechanical refrigeration was employed in breweries in Continental Europe some 20 or more years earlier than it actually was.

Sincerely,

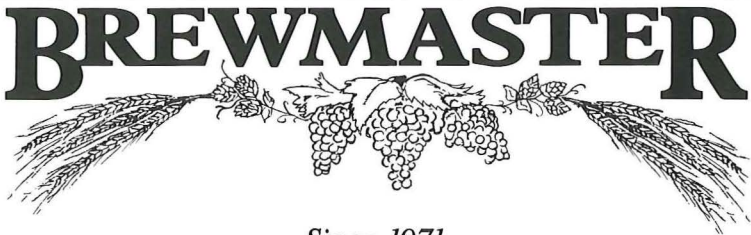
Jay Hersh

Arlington, Mass.

Thank you for setting the record straight.
—Ed.

BREWMASTER

AUSTRALIAN



Since 1971

WINE AND BEER MAKING
EQUIPMENT AND SUPPLIES

WHOLESALE

TO
HOME WINE AND BEER MAKING RETAILERS
MICROBREWERIES AND WINERIES


CALL

1-800-288-8922

WHOLESALE INQUIRIES ONLY

IRONMASTER

MEMBER



ALEXANDERS

2315 VERNA COURT
SAN LEANDRO, CA 94577

EDME

TOLFORDS

JOHN BULL

BREWERM

GEORDIE

TOM CAXTON

WINEMAKING STEMMER/CRUSHERS, PRESSES & EQUIPMENT



The Finest in Home Beer Making
Equipment & Supplies
Please Call for a
FREE Catalog
1-800-315-1208
(919) 453-2803

Support your local homebrew shop;
ASK FOR BRIESS!



SPECIALTY MALTS & CBW®
(CONCENTRATED BREWERS WORTS)

BRIESS MALTING COMPANY

Chilton, WI 53014



New! *Drink-Mate*

Party-Pak's Home Brew Draft Beer Systems

Drink-Mate Self-contained System

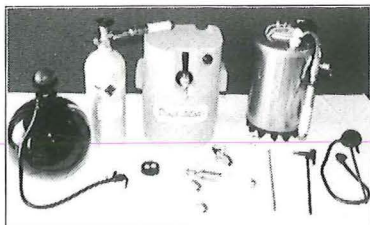
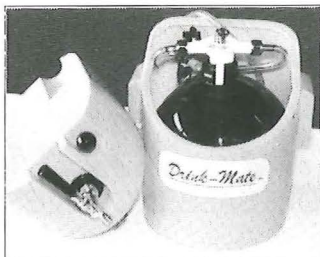
- The ultimate in beer brewing & dispensing.
- Designed to fit into any standard refrigerator.

Drink-Mate includes a 2.4-gal. Party Ball with snap-on airtight lid for secondary fermentation, a mini-regulator & refillable CO₂ cylinder to carbonate & dispense.

Drink-Mate hard shell case comes with built-in brass faucet & hand pump for non-carbonated drink dispensing.

Other Products:

- Ball with hand pump/picnic faucet
- 2.5 oz. CO₂ refillable cylinder
- Mini-regulator/10-20 psi
- Stand-alone system (HOT or COLD)
- Back-pak system (HOT or COLD)



FOR INFORMATION
CALL:

1-800-949-9939

**Party-Pak
Dispensing
Systems, Inc.**

4026 Mulligan Dr.
Longmont, CO 80504

ABOVE THE REST
Homebrewing
S-U-P-P-L-I-E-S

5 -Gallon Brew Kegs

\$29.95 (+ shipping)

- ♦ Reconditioned Cornelius Kegs
- ♦ Ball-lock Fittings
- ♦ Pressure Tested to 120 PSI
- ♦ Steam Cleaned, Dents Removed & Buffed Shiny

Complete Kegging Kit

\$ 139.95 (+ shipping)

- ♦ New 5 lb. CO₂ Tank & Regulator w/ Check Valve
- ♦ Air Line, Beer Line, Tap & Connectors
- ♦ Reconditioned 5 Gallon Brew Keg

Call Now to Order

1-800-898-MALT

Free Catalog of Quality, Low Priced Homebrew Products
3 Gallon Kegs Available Soon

- Call for Wholesale Prices -

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

← Karen Barela

International Travel

Several staff members traveled to a variety of countries in 1995 to spread the word about homebrewing, gather beer and brewing information from other cultures and gain a global perspective on the world of beer. The Association of Brewers has taken a more international view of craft-brewed beers, and we believe there is much to be learned from the beer industries and cultures abroad. We aim to provide a global format for learning about beer, beer evaluation and brewing, and we are seeking ways to share information with our international friends in the greater brewing community.

In May of 1995, Charlie Papazian visited homebrewers in Belgium, the Netherlands and Sweden. In August, James Spence visited homebrewers in England and judged at the Great British Beer Festival. Also in August and November, Karen Barela con-



Beer Evaluation Seminar attendees in Osaka, Japan.

ducted beer evaluation seminars in Tokyo and Osaka, and met with members of the Japan Craft Beer Association, which paid for her trip. If you live outside North America and are interested in the possibility of providing AHA services or distributing *Zymurgy* to homebrewers in your country,

please contact AHA President Karen Barela, PO Box 1679, Boulder, CO 80306-1679, (303) 447-0816 ext. 122; FAX (303) 447-2825 or karen@aob.org.

Technically Correct

Zymurgy goes through a great deal of editing so the information you receive is technically accurate, easy to read and applicable to your homebrewing. Each feature article is reviewed by at least nine people. The entire process can take anywhere from two to 10 months to bring an article from the idea stage to the final form you see in *Zymurgy*. The process begins with an idea from the AHA staff, a member or from a proposal submitted for consideration.

Once an author is found, details and deadlines are negotiated. When an article is received from the author it is reviewed by Editor Dena Nishek and editorial advisers, then copies are sent to the four or more technical editors. The article is edited for clarity, consistency of style, appropriateness, safety and technical accuracy. The author is consulted when questions arise or when a piece needs substantial rewriting. As the content is finalized, two part-time out-of-house editors check the grammar. Near the end of the editorial schedule Dena combines the technical editors' input and author's additions and clarifications to finalize the copy for the graphics department. Authors review their articles twice prior to publication to check the changes and review the layout, design, artwork and charts or graphs.

Certain subjects require additional input from industry experts or homebrewers with



Beer Evaluation Seminar instructors (from left, standing) Steve Hamburg; Ryouji Oda, Director of the Japan Craft Beer Association; Karen Barela, American Homebrewers Association president; and Ray Daniels, along with attendees, raise their glasses in a toast to beer appreciation.

applicable technical backgrounds. We rely heavily on our network of homebrewers and beer industry professionals to help us make each article perfect. We want to thank all of the people who contribute to each issue of *Zymurgy* so we can give you such a wonderful full-bodied read. (Check the masthead for a complete list of names.) If you are interested in volunteering technical expertise, or have a suggestion for an article, contact Dena Nishek, *Zymurgy* editor, PO Box 1679, Boulder, CO 80306-1679 or dena@aob.org.

Homebrew Bayou! June 5-8, 1996



It's just around the corner and we don't want you to be singing the blues if you miss Homebrew Bayou!, the 18th annual AHA National Homebrewers Conference and Festival in New Orleans, La. Maybe you've thought about attending and really want to go. Don't be intimidated — it really is great fun and offers fabulous camaraderie, wonderful brews and a whole lot of beer and homebrewing knowledge. If you're passionate about your homebrewing hobby part of that passion includes seeking knowledge about your favorite beverage. The Conference is the place to be June 5 through 8! Come on down to the Bayou and check it out. Details and registration information are available in *Zymurgy* Spring 1995 (Vol. 19, No. 1) or by contacting Nancy Johnson, special events coordinator, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816 ext. 131; FAX (303) 447-2825; nancy@aob.org or <http://www.aob.org/aob>.

AHA Survey Results

Thanks to all of you who responded to the membership survey included in *Zymurgy* Winter 1995 (Vol. 18, No. 5). We received an overwhelming response — about 10 percent of our membership! The information you provided is extremely valuable in determining the direction of the AHA and especially the content of *Zymurgy*. Here's a sampling of what you told us:

Homebrewer Stats

Male.....	97.2%
Female	2.8%
Married	74.9%
Single	20.3%
Domestic Partner.....	4.8%
Age:	
21 - 25	5.2%
26 - 34	34.7%
35 - 45	42.3%
46 - 55	12.1%
55 +	5.7%

Primary Occupation:

Computer-related 11.8%, Science/technology 17.4%, Professional brewer 0.7%, Manufacturing 3.5%, Homebrew industry 1.2%, Education 4.5%, Government 6.8%, Sales/retail 3.7%, Managerial/professional 13.9%, Law/medicine 6.8%, Business owner/self-employed/freelance 6.2%, Skilled trades/crafts 7.3%, Journalism/publishing 0.8%, Other 15.5%

1994 Household Income:

Less than \$25,000	7.6%
\$26,000 - \$40,000.....	18.4%
\$41,000 - \$55,000.....	21.4%
\$56,000 - \$80,000.....	28.3%
\$81,000 - \$100,000.....	12.3%
More than \$100,000.....	12.0%

Highest level of education completed:

High school 11.5%, Vocational school 4.5%, Associate of arts/community college 8.6%, College 42.1%, Professional school or master's degree 24.7%, Doctorate 8.5%

Living in: Rural area 14.1%, Small town (population less than 50,000) 25.5%, Suburb 33.1%, City 27.2%

Homebrewing Habits

Number of years homebrewing:

1.....	16.3%	6	4.6%
2.....	18.0%	7	3.2%
3.....	19.0%	8	3.2%
4.....	12.3%	9	2.1%
5.....	9.2%	10+	12.3%

Number of batches brewed yearly:

1 - 3.....	7.7%
4 - 6.....	25.0%
7 - 10.....	29.3%
10+	38.0%

Average batch size (in gallons):

5	89.1%
10	9.2%
15	1.2%
20	0.1%
20+	0.4%

Brewing habits:

20% brew with extract more than 90% of the time
33% brew with extract and grain more than 95% of the time
47% brew with all grain more than 90% of the time

Amount spent on homebrewing yearly:

Less than \$50	1.8%
\$50 - \$150.....	18.3%
\$150 - \$300.....	41.9%
\$300 - \$500.....	25.9%
\$500+	12.1%

Packaging:

65% bottle more than 90% of the time
35% keg more than 85% of the time



Watch for more statistics on who you are in the upcoming 1996 Special Issue (Vol. 19, No. 4).



TOP LEFT
Dennis Davison:
Chicago site

TOP RIGHT
Richard Oluszak, Dennis
Kinvig and Craig Pinhey:
Toronto site

BOTTOM
Randy and Kathy Martin,
Loretta and Mike Oehrlein:
Lancaster site



Volunteers Key

A couple of additions and changes have been made to the AHA National Homebrew Competition this year, but one thing that hasn't changed is the dedication and support of key volunteers. Although we've added new sites in Portland, Ore., and Toronto, Ont., Canada, and relocated the eastern and southern sites (to equally distribute entries for judging) your competition beers are still cared for by people who dedicate time and attention to each and every homebrewed entry. These volunteers work with the AHA staff to make sure your entries are presented to judges in the best manner possible and that the judging at all sites is consistent regardless of location. Please join the AHA staff in thanking these wonderful and dedicated volunteers:

Fresno, Calif.: Tom Pope, Julian Bencomo, Harry Houck, Bill McCrory, Lowell Hart; **Denver, Colo.:** Phil Fleming, Bob Kauffman, Caroline Taber; **Pensacola, Fla.:** Gary Gutowski, Dan Showalter; **Chicago,**

Ill.: Dennis Davison; **Kansas City, Kan.:** Alberta Rager, John Weerts; **Portland, Ore.:** Ed Lingel, Pat Savage, Scott Sanders; **Lancaster, Pa.:** Kathy Martin, Randy Martin; **Toronto, Ont., Canada:** Dennis Kinvig, Craig Pinhey, Richard Oluszak; **Boston, Mass.:** Paul Correnty

Your Mailbox

Times change and so do you. If you move, please be sure to contact us so we can keep delivering **Zymurgy** directly to you. The magazine is mailed third class so we do not always receive forwarding information from the U.S. Postal Service. There are several ways to contact us — we've tried to make it as easy as possible to keep us informed of your address. You can check your address and membership expiration date by e-mailing expire@aob.org. Or contact us regarding circulation information at PO Box 1679, Boul-



der, CO 80306-1679; (303) 447-0816 ext. 103 and 104; FAX (303) 447-2825 or service@aob.org.

Keep in Touch

The AHA is one division of the Association of Brewers and it provides you, as a member, access to all kinds of information, news and contacts in the beer industry. All the divisions of the AOB and are dedicated to collecting and disseminating information about beer and brewing. Here's how to reach us:

MAIL

PO Box 1679,
Boulder, CO 80306-1679

PHONE

(303) 447-0816

An automated voice-mail system directs your calls to any of the AOB departments or divisions. If you don't know the extension of the staff member you wish to reach press # for a directory.

FAX

(303) 447-2825

WORLD WIDE WEB

<http://www.aob.org/aob>

INTERNET

info@aob.org
An automated service that bounces information back to you based on key words in the body of your message.

service@aob.org
Messages sent to this address go to the AOB customer service department.

orders@aob.org
Send your credit card orders for merchandise, books, free information, back issues and memberships to this address.

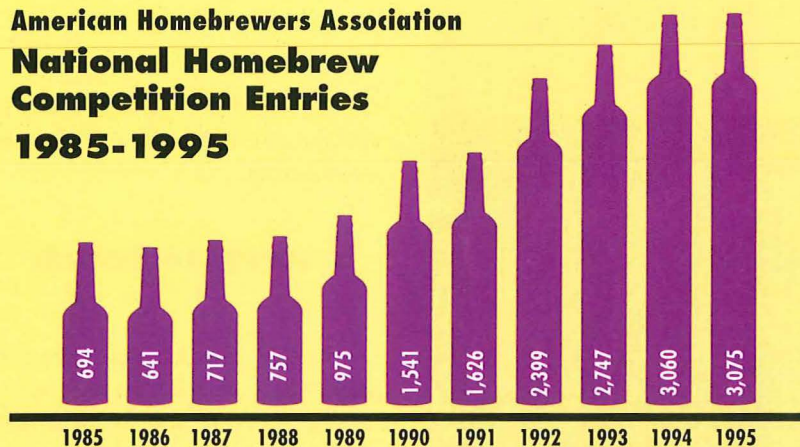
expire@aob.org
An automated service enabling you to check the expiration date of your membership.

first name of any AOB employee
followed by @aob.org

American Homebrewers Association

National Homebrew Competition Entries

1985-1995



Details of the rules, regulations, prizes and awards are explained in the 1996 National Homebrew Competition Rules and Regulations. The brochure was included in *Zymurgy* Winter 1995 (Vol. 18, No. 5) and can also be obtained by contacting Caroline Duncker, AHA administrative assistant, PO Box 1679, Boulder, CO 80306; caroline@aob.org. It also is available from our automated e-mail service, info@aob.org, and on our web site: <http://www.aob.org/aob>.

National Competition '96 Changes



There are four new elements of the 3,000-plus-entry AHA 1996 National Homebrew Competition.

- There are eight first-round beer sites (up from five in 1995), including one in Canada.

- The style guidelines have been slightly adjusted to correspond to industry standards. Our guidelines are developed from a variety of sources including industry experts and published research such as Professor Anton Piendl's "Biere Aus Aller Welt," from *Brauwelt*, a German beer industry publication. If you have questions or comments about the style guidelines contact James Spence, AHA administrator, PO Box 1679, Boulder, CO 80306-1679 or james@aob.org.

- Awards will be given for first, second and third places in each category at each of the eight first-round sites. With about 400 (or more!) entries per site, it is a huge honor to be chosen to advance to the second round. We also will list second-round brewers in *Zymurgy* Fall 1996 (Vol. 19, No. 3).

- The first-, second- and third-place brewers from each first-round site are eligible to contribute points toward the Homebrew Club of the Year award. Eligibility depends on the entrant having noted on their entry form that they are a member of an AHA registered homebrew club.



**In our efforts to serve you,
we've found a way to
be two places at once.**

CROSBY & BAKER LTD

Wholesale Home Brew Supplies

Atlanta, Georgia 800-666-2440

Westport, Massachusetts 800-999-2440

WHO SAID YOU CAN'T TEACH AN OLD DOG NEW TRICKS.

PLAIN & HOP FLAVOURED

Light Malt Extract

Dark Malt Extract

Amber Malt Extract

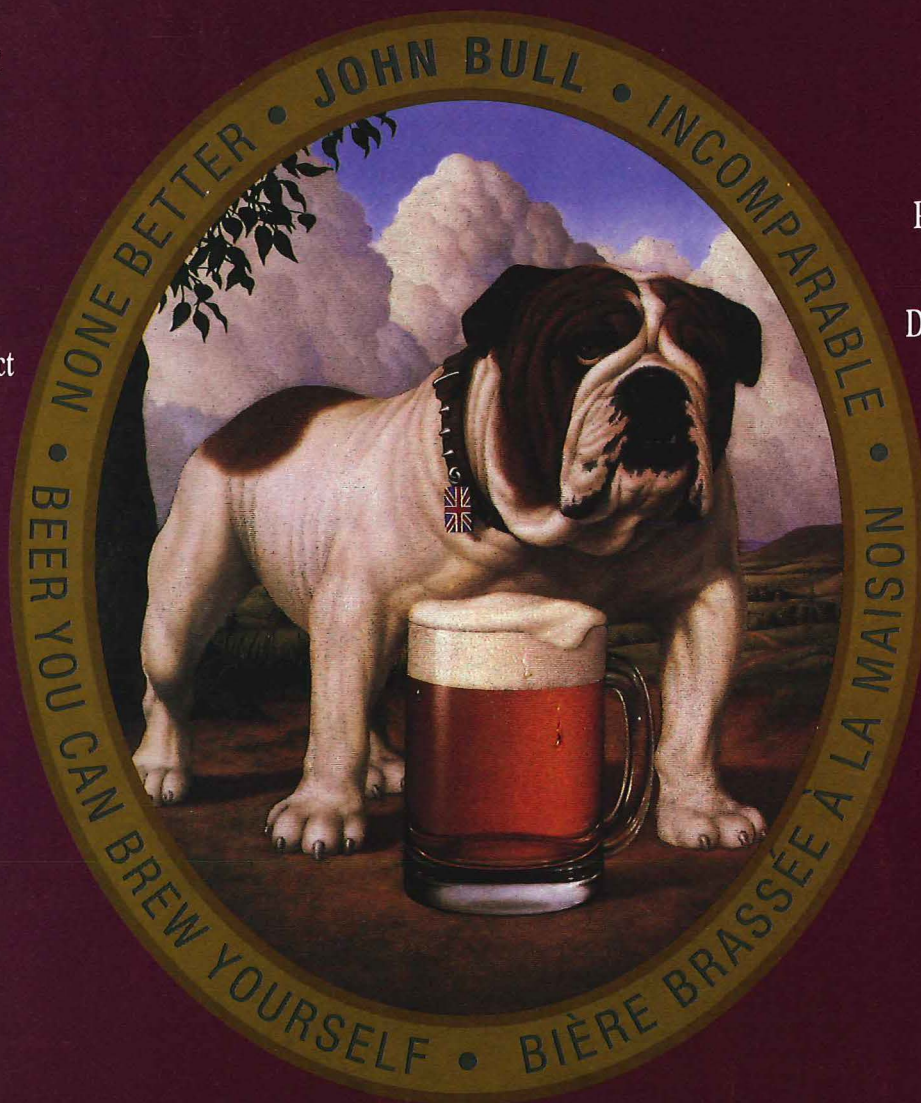
PLAIN

Crystal Malt Extract

Roasted Malt Extract

Diastatic Malt Extract

Wheat Syrup



~ YOU CAN! ~

At John Bull we have retained the very best of the old added some exciting new qualities to bring to you:-

JOHN BULL

Bulldog Blends

Distributors in U.S.A.

L.d. Carlson Co Ltd. 463 Portage Boulevard Kent Ohio 4420	Crosby Baker 999 Main Road Westburrr Mass. 02790	Brewaster 2315 Verna Court San Leandro California 94577a	F.H. Steinbart 234 S.E. 120th Ave. Portland Oregon 97214
--	---	---	---

Canadian Distributors.

Lindstram Beer & Wine Making Supplies Ltd 190 Brodeley Drive Hamilton Ontario L8E 3C5	Divin Distribution 3220 Lère Rue St Hubert Quebec J3Y 8YZ	W.H. Brown 105 Akerley Blvd. Dartmouth Nova Scotia BJB JRJ
--	--	---

CALENDAR



1996

APRIL

- 22-25** Sixth International Brewing Technology Conference, Richmond, Surrey, England. Call 081-332-1243.
- 26-27** James Page Open, **AHA SCP**, Minneapolis, Minn. Entries due April 8-20. Call (612) 331-2833 or (800) 347-4042.
- 27** Maltose Falcon's Mayfaire, **AHA SCP**, Woodland Hills, Calif. Entries due April 6. Call (310) 379-2921 or RustyReece@aol.com.
- 27-28** First Round **AHA National Homebrew Competition** judging in Fresno, Calif., Portland, Ore., Denver, Colo., Kansas City, Kan., and Toronto, Ont., Canada. Call (303) 447-0816 ext. 116 or caroline@aob.org.
- 28** Sios Trophy, **AHA SCP**, Jona, Switzerland. Entries due April 20. Contact Richard Leder at Sios Homebrew Shop, Postfach 2004, CH 8675 Jona, Switzerland.
- 28** BJCP Exam, Aurora, Ill. Call (708) 979-5124.
- 27-30** The Boston Brew-In: Charting the Course, Institute for Brewing Studies 1996 National Craft-Brewers Conference and Trade Show, Hynes Convention Center, Boston, Mass. Call (303) 447-0816.
- MAY**
- 4** National Homebrew Day, call (303) 447-0816.
- 4** Gemstate Homebrew Competition, **AHA SCP**, Boise, Idaho. Entries due April 27. Call (208) 385-3473 or lcarter@claren.idbsu.edu.
- 4** Upstate New York Homebrewers Association 17th Annual Contest and Seventh Empire State Open, **AHA SCP**, Rochester, N.Y. Entries due April 12. Call (716) 242-9626 or shodos@aol.com.
- 4-5** Sunshine Challenge, **AHA SCP**, Orlando, Fla. Entries due April 30. Call (407) 888-3533.
- 5** Ninth Evanston First Homebrew Challenge, **AHA SCP**, Evanston, Ill. Entries due April 27. Call (708) 869-3621.
- 5** BJCP Exam, Orlando, Fla. Call (407) 696-2738.
- 5** Taste of the Nation, Seattle, Wash. Call (206) 329-7577.
- 10** Second Annual WJCT Beer Tasting & Homebrew Competition, **AHA SCP**, Jacksonville, Fla. Entries due May 3. Call (904) 353-7770.
- 11** Beer Style Tasting, Santa Rosa, Calif. Call (707) 544-2520.
- 11** Greater Topeka Hall of Foamers Third Annual Heartland Homebrew Competition, **AHA SCP**, Topeka, Kan. Entries due May 4. Call (913) 235-6561.
- 11** Green Mountain Homebrew Competition, **AHA SCP**, Burlington, Vt. Entries due April 26. Call (802) 879-1304.
- 11** First Homebrewers Contest at BlackHorse Brewery, **AHA SCP**, Clarksville, Tenn. Entries due May 4. Call (800) 295-1506.
- 11** Oregon Homebrew Competition and Festival, **AHA SCP**, Albany, Ore. Entries due May 10. Call Lee Smith at (541) 926-2286 or struble@ucs.orst.edu.
- 11-12** Elizabethan Homebrewing Competition, **AHA SCP**, San Bernardino, Calif. Entries due April 22-29. Call Stacey Harris at (909) 880-6275.
- 11-12** 10th Annual Big and Huge Homebrew Competition, Madison, Wis. Entries due May 4. Email rpaolino@earth.execpc.com.
- 17-19** Midwest International Beer Exposition, Chicago, Ill. Call (847) 678-0071.
- 17-19** Grainnaissance Faire, Glen Ellen, Calif. Call (707) 939-9666.
- 18** Bock is Best Club-Only Competition, **AHA SCP**, Entries due May 13. Call (303) 447-0816 ext. 121 or james@aob.org.
- 18** Fifth Annual Moon Madness Competition, **AHA SCP**, Douglassville, Pa. Entries due May 1-12. Call (610) 944-0500.
- 18** Be Like Mike, **AHA SCP**, Austin, Texas. Entries due April 28. Call (512) 832-8552 or stpats@vixen.bga.com.
- 18** Iowa City Homebrew Classic, **AHA SCP**, Iowa City, Iowa. Entries due May 10. Call (319) 643-7354.
- 18** Belle Grove Beer Festival, Middleton, Va. Call (540) 869-2208.
- 18** 5th Annual Boston Brewers Festival, Boston, Mass. Call (617) 547-6311.
- 18-19** Advanced Homebrewers Weekend Series, American Brewers Guild, Kansas City, Mo. Call (800) 636-1331.
- 24-31** Brewing Traditions of England and Scotland, European Brewery Adventures. Call (800) 424-7289.
- 25** 10th Annual California Festival of Beers, San Luis Obispo, Calif. Call (800) 549-1538.
- 25** Fourth Annual Hilton Head Island International Beer Festival, Hilton Head, S.C. Call (803) 689-3340.
- 31-June 8** The Best of Bohemia and Bavaria, European Brewery Adventures. Call (800) 424-7289.
- JUNE**
- 5-8** Homebrew Bayou, **AHA** 1996 National Homebrewers Conference, New Orleans, La. Call (303) 447-0816.
- 7-9** St. Paul Brewing Celebration, **AHA SCP**, St. Paul, Minn. Entries due May 29-June 5. Call (612) 292-1689 or nbrewer@winternet.com.
- 8** Dominion Cup '96, **AHA SCP**, Richmond, Va. Entries due June 4. Call (804) 537-5228.
- 8-9** Second Annual River City Real Beer Fest, Richmond, Va. Call (703) 527-1441.
- 12** San Joaquin County Fair, **AHA SCP**, Stockton, Calif. Entries due June 4. Call (209) 957-4549.
- 12-15** World Beer Cup, Vail, Colo. Call (303) 447-0816.
- 12-16** Beer Mundial '96, Old Port of Montreal, Quebec, Canada. Call (514) 722-9640 or Marois@login.net.
- 14-15** Second Annual Eight Seconds of Froth, **AHA SCP**, Cheyenne, Wyo. Entries due June 11. Call (307) 632-0541.
- 15-16** E'Ville Triple Threat, **AHA SCP**, Ellicottville, N.Y. Entries due May 17-31. Call Vincent D. Oliverio at (716) 699-8385.
- 15** Third Annual Wichita Festival of Beers, Wichita, Kan. Call (316) 838-7707.
- 17** 1996 Portland Pilsener Contest, **AHA SCP**, Portland, Ore. Entries due June 16. Call (503) 281-8732.
- 20** Great Brews of England Beer Tasting, Marina del Rey, Calif. Call (310) 823-1700 ext. 5121.
- 22** Second Annual Summerfest '96, Roseville, Calif. Call (916) 261-1117.
- 22** CABA's Great Canadian Homebrew Conference, Toronto, Ont. Call at (905) 529-4388.
- 29** Fifth Annual Mazer Cup Mead Competition, **AHA SCP**, Ann Arbor, Mich. Entries due June 10-21. Call (810) 816-1592 or schrammk@wcresa.klz.mi.us.
- 30** BUZZ OFF Homebrew Competition, **AHA SCP**, Downingtown, Pa. Entries due June 24. Call (610) 458-0743 or dlh1@trpo3.tredydev.unisys.com.
- 30** Orange County Fair Homebrew Contest, **AHA SCP**, Costa Mesa, Calif. Entries due June 15. Call (714) 642-1179 or scott@gordian.com.
- 30** Second Annual Mill Creek Classic Homebrew Competition, **AHA SCP**, Salem, Ore. Entries due June 22. Call (503) 362-1728.
- JULY**
- 5-7** Canadian Amateur Brewers Association 12th Annual Great Canadian Homebrew Competition, **AHA SCP**, Edmonton, Alb., Canada. Entries due June 28. Call (403) 430-6824 or kpearson@gpu.srv.ualberta.ca.
- 9** Zymurgy Fall 1996 (Vol. 19, No. 3) mails. Please allow four to six weeks for delivery.
- 19-20** International Beer Festival, Burlington, Vt. Call (802) 388-0727.
- 20** California Small Brewers' Festival, Mountain View, Calif. Call (800) 965-2337.
- 20** Sierra Brewfest, Nevada City, Calif. Call (800) 218-2188.
- 26-28** Oregon Brewers Festival, Portland, Ore. Call (503) 778-5917.
- AUGUST**
- 1** Ohio State Fair Homebrew Competition, **AHA SCP**, Columbus, Ohio. Entries due June 20. Call (614) 644-4047.
- 4** Iowa State Fair, **AHA SCP**, Des Moines, Iowa. Call (515) 279-1016 or ballhorn@optimage.com.
- 6-10** 1996 Great British Beer Festival, London, England. Contact CAM-RA at 01727 867201; FAX 01727 867670. 230 Hatfield Rd., St. Albans, AL1 4LW.

8 Josephine County Fair Amateur Beers Competition, **AHA SCP**, Grants Pass, Ore. Entries due Aug. 8. Call (503) 597-2142.

10 Beer & Sweat, **AHA SCP**, Cincinnati, Ohio. Entries due Aug. 3. Call (513) 251-9754 or 102126.3315@compuserve.com.

11 Kentucky State Fair, **AHA SCP**, Louisville, Ky. Entries due Aug. 10. Call (502) 222-7439 or tobias@glou.com.

11 Michigan State Fair, **AHA SCP**, Detroit, Mich. Entries due July 26-Aug. 9. Call (313) 994-0072 or spencer@umich.edu.

14 Steele County Free Fair Home-made Beer, **AHA SCP**, Owatonna, Minn. Entries due Aug. 11-13. Call (507) 455-3423.

17 Mead Magic Club-Only Competition, **AHA SCP** Entries due Aug. 12. Call (303) 447-0816 ext. 121 or james@aob.org.

20 Benton-Franklin County Fair, **AHA SCP**, Kennewick, Wash. Entries due Aug. 20. Call (509) 946-5735.

25 Western Washington Fair Beer Competition, **AHA SCP**, Puyallup, Wash. Entries due Aug. 17. Call (206) 841-5008.

28-Sept. 12 Hops and Horses British Beer Tour. Call (802) 888-9113.

SEPTEMBER

7-16 Artisan Breweries of Holland and Belgium, European Brewery Adventures. Call (800) 424-7289.

12-21 Fine Beers & Wines of Czech and Hungary, European Brewery Adventures. Call (800) 424-7289.

19 Beers from Germany Beer Tasting, Marina del Rey, Calif. Call (310) 823-1700 ext. 5121.

20 *Zymurgy* Special 1996 (Vol. 19, No. 4) mails. Please allow four to six weeks for delivery.

21 Tampa Bay Beers Ultimate Altbier Competition, **AHA SCP**, Tampa, Fla. Entries due Sept. 19. Call (813) 874-0937.

21 First Dayton Beerfest Competition, **AHA SCP**, Dayton, Ohio. Entries due Sept. 9-20. Call (513) 427-0278.

22 Boeing Employees Wine & Beer Club, **AHA SCP**, Seattle, Wash. Entries due Sept. 12. Call (206) 965-3828.

26-28 15th Anniversary Great American Beer Festival®, Denver, Colo. Call (303) 447-0816.

28 Eighth Annual Triangle's Unabashed Homebrewers Open, Durham, N.C. Entries due Sept. 25. Call (919) 286-7125; ecp@acpub.duke.edu.

OCTOBER

4-11 Brewing Traditions of England and Scotland, European Brewery Adventures. Call (800) 424-7289.

5 Third Annual Sin City Sudzers Homebrew Competition, **AHA SCP**, Sheboygan, Wis. Entries due Oct. 4. Call (414) 458-8752.

12 Arizona State Fair, **AHA SCP**, Phoenix, Ariz. Entries due Sept. 20-Oct. 7. Call (602) 252-6771.

13 Second Annual Great Northwest Homebrew Competition, **AHA SCP**, Seattle, Wash. Entries due Oct. 4. Call (800) 728-2537.

18-20 13th Annual Dixie Cup, **AHA SCP**, Houston, Texas. Entries due Oct. 5. Call (713) 992-5661 or slamb@ghgcorp.com.

26 Best of Fest Club-Only Competition, **AHA SCP**, Entries due Oct. 21. Call (303) 447-0816 ext. 121 or james@aob.org.

NOVEMBER

2 1996 Capitol District Open, **AHA SCP**, Fairfax, Va. Entries due Oct. 29. Call (703) 756-5103 or fembh@access.digex.net.

3-5 International Beer Marketers Symposium, Vancouver, B.C., Canada. Call (303) 447-0816.

9 Third Annual Rhode Island International Beer Exposition, Providence, R.I. Call (401) 274-3234.

20 *Zymurgy* Winter 1996 (Vol. 19, No. 5) mails. Please allow four to six weeks for delivery.

23 Salt City Brew Club 11th Annual Competition, **AHA SCP**, Syracuse, N.Y. Entries due Nov. 9. Call (315) 449-2844 or kconnor@syr.edu.

DECEMBER

7 Belgian Blockbuster Club-Only Competition, **AHA SCP**, Entries due Dec. 2. Call (303) 447-0816 ext. 121 or james@aob.org.

19 Great Trappist Ales Beer Tasting, Marina del Rey, Calif. Call (310) 823-1700, ext. 5121.

AHA SCP = American Homebrewers Association Sanctioned Competition Program

To list events, send information to *Zymurgy* Calendar of Events. To be listed in *Zymurgy* Fall 1996, information must be received by June 5, 1996. Competition organizers wishing to apply for AHA Sanctioning must do so at least two months before the event. Contact Caroline Duncker at (303) 447-0816, ext. 116; FAX (303) 447-2825; PO Box 1679, Boulder, CO 80306-1679; or Internet caroline@aob.org.

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

YOU CAN OPEN A MICROBREWERY

Affordable consulting can show you the way.

- * Business Plans
- * Market Analysis
- * Site Selection
- * Financial Analysis

THE TIME IS NOW

CALL
812-883-4393

TUCKER BREWING CO., INC.
CONSULTING DIVISION
1477 South State Road 60
P.O. Box 326
Salem, Indiana 47167

HomeBrewer's Assistant 2.0

The Most Flexible Computer Tools to Assist Homebrewers!

Design Your Own Recipes
Automatically calculates alcohol, bitterness, gravity & color as you add ingredients. Keeps track of comments and step-by-step instructions. Includes AHA style guide.

Design Your Own Bottle Labels
The unique WYSIWYG Label Designer gives you text, clipart, color and a variety of graphical effects and tools to create your own customized labels.

Organize Your Recipes
Group & store your recipes in convenient folders that you can define to meet your individual needs. Includes over 50 recipes.

Personalize the System
Design your own screens, printouts, menus, icon toolbars and brewing parameters to personalize the system with your preferences.

Many More Features...
Maintain batch logs, print competition forms, multimedia reference guide with hundreds of brewing tips & topics, shop listings for easy ordering, recipe sharing utility and much more.



Look for *HomeBrewer's Assistant* at your local home brewing supply shop or call:

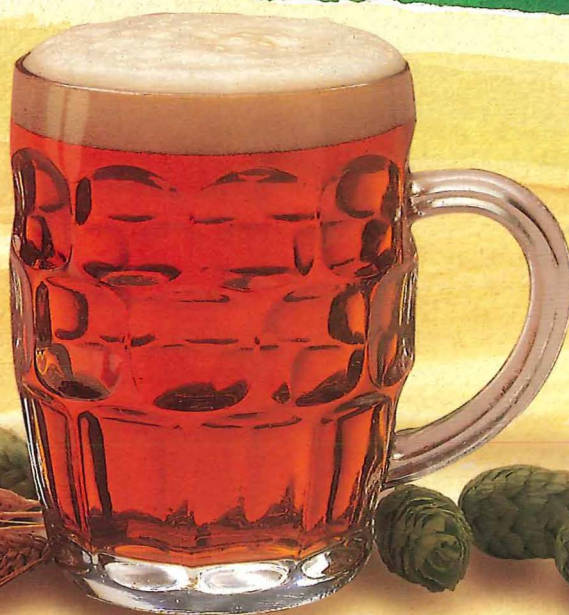
HomeBrewer's Software
6617 Wannamaker Lane, Charlotte, NC 28226
1-800-BRWSOFT
1-800-279-7638 or 704-544-0137
e-mail: brewsoft@aol.com

Only **\$29⁹⁵**
plus \$3 S&H

Compatible with MS-Windows® 3.1, 3.11 and Windows® 95

EDME

the essential homebrew ingredient



- Premium Yeast
- Full range of Beer Kits
- Diastatic & Non-Diastatic Malt Extracts
- Malted Grains
- Barrels & Equipment

Brew with EDME & reap the benefits of over 100 years experience, quality & expertise in the heart of England's finest barley growing region.

EDME

Premium Malt Products since 1884

☎ +44 1206 393725 Fax: +44 1206 396699 Email: edme@dial.pipex.com

Internet: <http://www.ip7.co.uk/edme/>



For full details return to: Marketing Dept., EDME Ltd.,
Misley, Manningtree, Essex CO11 1HG, England.

Name _____

Address _____

BREW NEWS

James Spence

HEADLINES

CAMRA Proclaims Call to Arms

Recent developments in the brewing industry have prompted the Campaign for Real Ale (CAMRA), the 25-year-old consumer advocacy group seeking to preserve U.K. brewing and pub traditions, to issue a call to arms to its 20,000 members. Among the action steps: CAMRA will support independent brewers who fight to retain the tied-house system, and those independents who remain in brewing. CAMRA supports a sliding scale of excise duty to help small brewers compete against national discounts, as well as fighting "carve-ups and cartels." The call to arms was moti-

vated by recent mergers and buyouts of large brewing companies, and the "crippling burden of beer duty" that makes it difficult for British brewers to compete with brewers in other European countries. In addition, the European Commission may ban the tied-house system in Britain, making it more difficult for independent brewers to remain in business. (*What's Brewing*, Nov. 1995)

Spent Hops Possible Dog Toxin

After her greyhound died of malignant hyperthermia apparently caused by eating spent hops from a batch of homebrew, Washington state resident Edie Rehkopf began investigating this life-threatening condition. Her

research found that, to date, the National Animal Poison Control Center has recorded eight instances of dogs dying from hops toxicity — seven of which were greyhounds. The other victim was a labrador retriever. Sighthounds seem especially susceptible.

Malignant hyperthermia is an uncontrollable fever. Rehkopf's dog went into convulsions after running a temperature of 106 degrees F. Cold baths and fever control drugs failed to prevent the dog's death 13 hours after eating the spent hops. The first symptom is heavy panting, followed by rapid heartbeat and rapid rise in body temperature. The substance in hops that causes the disease has not been identified. (*Dogworld*, Jan. 1996, pp. 113-115)

Governments Support Moderate Drinking

For the first time, the U.S. federal government has set dietary guidelines stating that moderate drinking may lower the risk of heart attack. The guidelines, which are updated every five years by the Department of Health and Human Services and the Agriculture Department, are used by the federal government for planning food programs and by the private food industry for dispensing nutrition information to consumers. The guidelines also are used for nutrition labeling on food products.

While the guidelines note too much alcohol can be harmful, they state that accumulating evidence suggests moderate drinking can have beneficial effects, and "alcoholic beverages have been used to enhance the enjoyment of meals by many societies throughout human history." This is a rever-



John Cryne (right), national chairman of CAMRA, talks to members of Parliament at CAMRA's annual parliamentary lobby.

sal of the 1990 opinion when the guidelines stated "drinking has no net health benefit." (*Daily Camera*, Boulder, Colo., Jan. 4, 1996)

Also in response to mounting evidence that moderate alcohol consumption can be beneficial, the British Department of National Health has revised its previous estimates of what constitutes safe alcohol consumption. The department has set guidelines in the form of daily benchmarks rather than weekly levels with the hope that consumers will be better able to monitor their consumption. The department's report advises that men who drink three to four units of alcohol a day (a unit in the United Kingdom is about one-half pint of beer, or about 10 ounces), and women who drink two to three units a day do not face significant health risks, and drinking one to two units a day provides health benefits. Stephen Dorrell, secretary of state for health, said, "It is important for the government to present a balanced view recognizing the risks of alcohol but offering soundly based and credible advice on which people can base their own choices." (CAMRA press release)

TECHNOTES

First-Wort Hopping Studies Continue

In *Zymurgy* Winter 1994 (Vol. 17, No. 5), page 21, "Brew News" reported on the "rediscovery" of first-wort hopping. Additional experiments have since reinforced the benefits of first-wort hopping and confirmed that the time of hop additions plays a clear role in the final aroma and flavor of beer.

Tettnanger hop pellets were added to the brew kettle at four different stages. The first addition occurred just as the wort covered the bottom of the kettle (first-wort hopping), the second 30 minutes before casting, the third 10 minutes before casting and the final in the whirlpool. Based on taste tests, beers using first-wort hopping were deemed to have the best aroma and taste. The beer hopped 10 minutes before casting was next best. Whirlpool-hopped beers fared the worst in the taste tests. (*Brauwelt* No. 4/95, Oct. 1995, pp. 296-303)

MICROBREWERIES, BREWPUBS AND CONTRACT BREWERIES

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

OPENINGS

UNITED STATES

Brewpubs

Alaska: Cusacks Brewpub and Roaster, Anchorage; Northern Lights Brewing Co./Shannons Cafe, Anchorage

Arizona: Copper Canyon Brewing and Alehouse, Chandler; Four Peaks Restaurant, Tempe

California: Burlingame Station Brewing Co., Burlingame; Elk Grove Brewing Co., Elk Grove; Harbor Lights Brewing Co., Dana Point; Mainline Brewing Co., Los Angeles; Snowshoe Pub and Brewing, Arnold; Valley of the Moon Brewing, Sonoma; Whiskey Creek Brewing Co., Mammoth Lakes; Brown Bag Brewery and Restaurant, Thousand Oaks

Colorado: Ouray Brewing Co., Ouray

District of Columbia: Dock Street Brewery and Restaurant (No. 2)

Georgia: Phoenix Brewing Co., Atlanta; U.S. Border Brewery Cantina, Alpharetta; Athens Brewing Co., Athens; Atlanta Beer Garten, Atlanta

Idaho: Star Garnet Brewing, Boise

Illinois: Pinch Penny Pub, Carbondale; Prairie Rock Brewing Co., Elgin

Kansas: Ann Arbor Brewing Co., Prairie Village; Overland Park Brewing Co., Overland Park

Kentucky: Kentucky Brewing Co., Lexington; Lexington City Brewing Co., Lexington

Massachusetts: BrewMoon (No. 2), Saugus; BrewHouse at Danvers, Danvers

Michigan: Grizzly Peak Brewing Co., Ann Arbor; Chikaming Brewing Co., New Buffalo

Missouri: The Bucket Shop, St. Joseph; Morgan Street Brewery, St. Louis

New Jersey: Joe's Millhill Saloon and Restaurant, Trenton

New Mexico: Wolf Canyon Brewing Co., Santa Fe

New York: Main Streets Brewery, Buffalo; Parlor City Brewing Co., Binghamton; Nacho Mama's Brewery, New York; Typhoon Brewery, New York; Hyde Park Brewing Co., Hyde Park

North Carolina: Top of the Hill Restaurant and Brewery, Chapel Hill

Ohio: O'Hooley's Pub and Brewery, Athens

Oklahoma: Interurban Brewpub, Norman

Oregon: Old World Pub and Brewery, Portland; Wild Duck Brewery, Eugene

Pennsylvania: Barley Creek Brewing Co., Henrysville

South Carolina: Hunter Gatherer, Columbia; Liberty Steakhouse and Brewery at Broadway at the Beach, Myrtle; T-Bonz Grill, Mt. Pleasant

South Dakota: Wild Bill's Brewing Co., Sioux Falls

Tennessee: Black Horse Brewery, Clarksville; Bosco's Nashville Brewing Co., Nashville; The Mill Brewery, Bakery and Eatery, Knoxville

Texas: Big Horn Brewing Co. of Texas, Arlington;

Copper Tank Brewing Co., Dallas; Harp & Star Brewing Co., Humble; Jaxson's Restaurant, El Paso; Katie Bloom's, Austin; Blue Star Brewing Co., San Antonio

Vermont: Madison Brewing Co. Pub and Restaurant, Bennington

Virginia: Blue and Gold Brewing Co., Arlington; Virginia Beverage Co., Alexandria

Washington: C.J.'s Brewpub, Vancouver; Glacier Peak Brewing Co., Everett

West Virginia: Brewbaker's, Huntington

Wisconsin: Bodega Brewpub Inc., La Crosse; R Ales, Marinette

Microbreweries

Arizona: Four Peaks Brewing Co., Tempe; McFarlane Brewing Co., Scottsdale

California: BrewCity, San Francisco; BrewMakers, Mountain View; K.C. Brewing Co., San Leandro; HopTown Brewing Co., Pleasanton; Bear Republic, Healdsburg

Colorado: Brouwer Brewery, Loveland; Colorado Brewing Co., Thornton; Palmer Lake Brewing Co., Palmer Lake; Powers Brewing Co., Brighton; Peak to Peak Brewing Co., Rollinsville

Connecticut: Mystic Brewing Co., Mystic

Florida: Firehouse Brewing Co., Miami; Dunedin Brewery, Dunedin

Georgia: Blind Man Ales, Athens; Dogwood Brewing Co., Athens

Hawaii: Hawaiian Brewing Co., Makawao; Trade Winds Brewing, Wailuku, Maui

Illinois: Goose Island (No. 2), Chicago; America's Brewing Co./Roundhouse, Aurora

Louisiana: Acadian Brewing Co., New Orleans

Maryland: Clipper City Brewing Co., Baltimore; Mt. Airy Brewing Co., Mt. Airy; Globe Brewing Co., Baltimore

Massachusetts: Clamtown Brewery, Ipswich

Michigan: Old Pennsylvania, Kalamazoo

New Jersey: Red Bank Brewery Co., Red Bank; New Jersey Brewery, Phillipsburg

North Carolina: Carolina Brewing Co., Holly Springs; Tom Cat Brewing Co., Raleigh; Old North State Brewing Co., Youngsville

Oregon: Bank Brewing Co., Coos Bay

South Carolina: Southeastern Brewing Co., Columbia

Tennessee: New Knoxville Brewing Co., Knoxville

Texas: The Strand Brewery, Galveston

Wisconsin: Wisconsin Brewing Co., Brookfield; Egan Brewing Co., De Pere

CANADA

OPENINGS

Microbreweries

British Columbia: Tree Brewing Co., Kelowna

Fermentation Kinetics and Volatile Production

Researchers investigated whether measurements of fermentation kinetics, in the form of CO₂ evolution, could be used to determine and control the production of fusel alcohols and esters.

At peak CO₂ production there is an apparent change in the physiological status of the yeast, resulting in a decrease in fusel alcohol production and an increase in ester production. Other measurements, however, indicated that only an indirect relationship involving numerous fermentation parameters influences the production of volatile compounds in fermentations. These experiments show that while there is a correlation between the peak level of CO₂ production and the production of fusel alcohols and esters, the correlation is not straightforward enough to be used as a controlling factor in fermentations.

The experiments also showed that the lowest final ester concentrations resulted when the fermentation temperature was increased after the peak production of CO₂. (*Journal of the ASBC*, Vol. 53, No. 2, pp. 72-78)

Analyzed vs. Perceived Bitterness

The Yakima Brewery, in cooperation with S.S. Steiner in Yakima, Wash., studied the bitterness of beers on both a quantitative and qualitative level in an effort to reconcile the variations in perceived levels of bitterness and measured bitterness units (BU). When breweries need to duplicate bitterness levels in a beer using different forms and varieties of hops, BU assays provide very close matchings of bitterness tolerances. Taste tests, however, show that beers with similar bitterness levels can have markedly different taste ratings. In fact, tasters were able to discern differences in perceived bitterness in beers brewed with the same variety of hop pellets but in different forms (regular pel-

Table 1. Assayed Bitterness and Taste Rating

Product	Assayed BU	Taste Rating*
Strong Amber Ale	45	7.8
Pale Ale	40	8.8
Imperial Stout	100	8.0
Light Lager	12	2.1
Light Lager (20 ppm Iso A.A. added)	30	6.2

*Average of reported quantitative ratings of 1 to 10 scale.

lets, stabilized pellets, isomerized pellets) to equivalent BU levels. The study concludes that when determining hop rates for commercial beers, taste testing data must be used to determine if the beer is hopped properly, and that the taste of the beer is the primary factor in quality control. (Herbert L. Grant, presentation to the Institute of Brewing Oxford Meeting, Sept. 29-30, 1994)

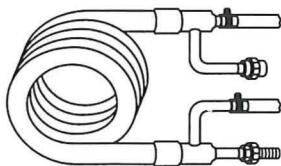
James Spence, AHA administrator, has been homebrewing since 1989.

Table 2. Perceived Bitterness Vs. Hop Form

Cascade Hop Pellet Form	BU	Taste Rating
Regular Pellets	27	5.8
Stabilized Pellets	26	6.3
Isomerised Pellets	25	6.8

Heart's Home Brew Supply Incredible Prices

HEART'S SUPER CHILLER



Compact
Helical Heat
Exchanger
Complete with
Fittings and
Hoses

Coil is only 6" high and 6" wide
Cools boiling wort to within 5°F of cooling water

ONLY \$79.95

Compare to Stoelting Chiller at \$179.00

HEART'S HOME BREW SUPPLY WE APPRECIATE YOUR BUSINESS

TEL: 1-800-392-8322

FAX: 1-407-298-4109



5824 NORTH ORANGE BLOSSOM TRAIL, ORLANDO, FLORIDA 32810

Hours: Monday—Thursday 9 am—11 pm Friday—Saturday 9 am—12 midnight

- 1 TOP QUALITY TWO ROW PALE MALTED BARLEY
50LB. BAG \$21.95
- 2 WYEAST LIQUID YEAST
\$2.95 PER PACK
- 3 CASCADE HOPS RAW OR PELLETS
\$5.95/LB
- 4 PARTY PIG POUCHES
\$2.95 EACH
- 5 COMPLETE CO2 KEG SYSTEM
\$129.95 EACH

OPEN LATE

LOW PRICES

CALL NOW FOR
COMPREHENSIVE
FREE CATALOG

Finally A Cabinet Worthy of Your Best Home Brew!

Twenty years of crafting fine cabinetry combined with a growing love of homebrewing has produced

THE BREW HOME™!

Now there's a convenient, attractive, classy way of dispensing your best homebrew!

THE BREW HOME™

- Fine Cabinetry
- Faucets
- Accommodates 2-5 gallon kegs

Call or write for a free brochure:

207.829.2088

One Chandler Brook No. Yarmouth, ME 04097



THE BREW HOME™!

*A good brew deserves
a good home!*

Kick the CAN!

Beer Kit?

English "Premium"

1 3.3# CAN malt extract
1 package of yeast

Something's
Missin'?



That would be
flavor, Zoot.

or Beer Kit

Gopher Pale Ale

3.3 lbs Amber Malt Extract, 3.3 lbs
Gold Malt Extract, 1oz Willamette
Bittering Hops, 1oz Fuggles Aroma
Hops, 1/2 lb. Crystal 10°L, 1/2
Carapils, Fresh Yeast, Priming Sugar
and Complete Instructions.

WindRiver has 35 different gourmet beer kits to choose from ranging from a simple ale like the Gopher Pale Ale to a big beefy flavored Russian Imperial Stout. WindRiver's kits are not only the most complete beer kits available but also are amazingly low priced.

For a complete list of
WindRiver's 35
Gourmet Beer Kits
and our FREE 32
page Catalog of
Homebrew Supplies
& Equipment Call or
write TODAY!

Call 1-800-266-4677

WindRiver Brewing Co. • 7212 Washington Ave S. •
Eden Prairie, MN 55344



Hundreds of extract
close-outs...starting
at only \$ 2.97!



Now
Offering 6
Models!

LP & Natural Gas Cookers

Many To Choose from
starting at \$ 39.95



Schmidling Maltmill

Outstanding Value!
\$ 99.95

Great Beer Starts Here



Hunter Air-Stat

Turns any fridge or freezer
into a lagering chest.
Only \$ 39.95

Visit Our On-Line Catalog!

<http://www.execpc.com/~brewcity>

email address:

brewcity@execpc.com

Guaranteed Low Prices!

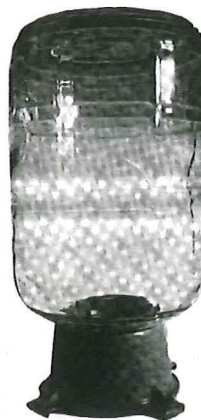
Write for your Free 1996 32 page Discount Catalog.

Brew City Supplies, Inc.

P.O. Box 27729 • Milwaukee, Wisconsin 53227

Phone 414-425-8595

FAX 414-425-3596 - 24 Hours A Day!



Carboy Dryer
Stand
Only \$ 7.95



Northwestern 3.3# Extracts

Case of 12 Unhopped

Mix & Match

\$ 59.00

Gold • Amber

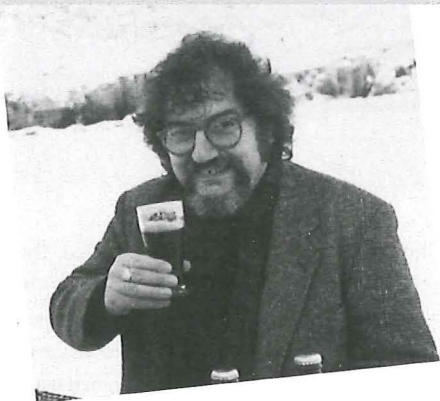
Dark • Weizen

Over 50 Different
Homebrewing
Books In Stock!

JACKSON ON BEER

Michael Jackson

Elemental Homebrewing: Midnight Sun, Saunas and Sahti



Darkness and light have an elemental effect on the human animal, nowhere more than at the ends of the earth. When the dark of winter finally gives way to the endless light of summer, the far north of Europe feels an urge to homebrew and celebrate.

It happens to some extent in all Nordic countries, but especially among the Finns, a distinct culture whose national epic spends more time on the emergence of beer than on the creation of the world. Ethnically, the Finns are related to the Estonians (with whom they share some of their homebrewing traditions), and more distantly to the Hungarians and various tribes in the Urals. Their beer traditions seem to have something in common with kvass-making in Russia and the ancient brewing traditions of Armenia and Mesopotamia.

The Finns have two rustic beers. One is produced at home and in the kitchens of very basic rural restaurants from a mash containing a significant proportion of rye. It is fermented for one to two days with bakers yeast and consumed unfiltered over the next two to three days while still very low in alcohol. It is

called *kalja* or *kotikalja*, and is served with lunch. *Kalja* looks like beef gravy, tastes like grape juice and has slight "prickly" carbonation (in that respect, the French would describe it as being *pétillant*). The other much more celebrated style is usually called *sahti*, though the eastern district, Joutsa, prefers the term *sörö*. That name is interestingly similar to *sör*, the Hungarian word for beer.

Traditionally, *sahti* has been made in homes and farmhouses, and sometimes in the sauna. Its consumption by family and friends after the sauna is something of a ritual. *Sahti* is usually made to a gravity in the 1.080s. The mash classically contains a proportion of rye, though oats or wheat may substitute, and berry-bearing juniper twigs are used as both a flavoring and a filter. The beer is fermented with bakers yeast.

These beers are made in two adjoining regions, beginning about 100 miles north of Helsinki and stretching for a similar distance. A westerly district extends beyond Tampere, toward Parkano. An easterly region spreads from Hämeenlinna to Lammi (which has a museum dedicated to *sahti*) and Lahti, and north toward Jyväskylä. These regions are a heartland of Finnish folk culture. Farther west there is more Swedish influence, to the north live the Lapps and to the east is a Russian flavor. In the north and the east beer takes second place to vodka.

In June, Finland's homebrewers begin to produce *sahti* for midsummer celebrations, involving four or five days of bonfires and sometimes crayfish parties. In July and August they have a competition for the best *sahti*.

Each community first has a judging then the winners advance to a final round, held in a different town each year. Two or three hundred people attended the 1995 final, which was held in a lakeside hotel in the paper mill town of Valkeakoski, close to the meeting point of the two regions.

More than 100 brews had been narrowed down to about 30, and there were two dozen local experts as judges, four of them women. Being somewhat of an outsider, I was honored to be invited on the panel along with Helsinki journalist Mikko Montonen.



Tauno Sirén, a retired railwayman from Ikaalinen, won an engraved Haarikka for homebrewing Finland's No. 1 *sahti* in 1995. The juniper vessel is shaped like a small pitcher with two handles from which *sahti* is communally consumed.

The local judges were seated at tables set out in a U shape. Mikko and I were placed in an exposed position in the middle. No one conferred and I was on my own. How would my judgment fare? Most of the brews were nutty, with some alcohol flavors. One was especially fruity, another overwhelmingly sweet, a third powerfully smoky. My favorite was complex, dry and refreshing. I was most gratified when this turned out to be the panel's first choice.

The winner was retired railwayman Tauno Sirén, 69, from Ikaalinen, northwest of Tampere. He told me that he brews once a month, usually for family celebrations or those of friends. The winning brew had been made for a birthday party. He had used rye but no juniper, which came as a disappointment to me. He told me that the acidity of juniper upset his stomach. Had he used hops? Yes, hops grown in his own garden. That helped me overcome my upset about the lack of juniper.

I hope that drinking from juniper does not distress him. His prize was an engraved Haarikka, the juniper vessel shaped like a small pitcher with two handles from which *sahti* is communally consumed. They also gave him a flat cap made from birch.

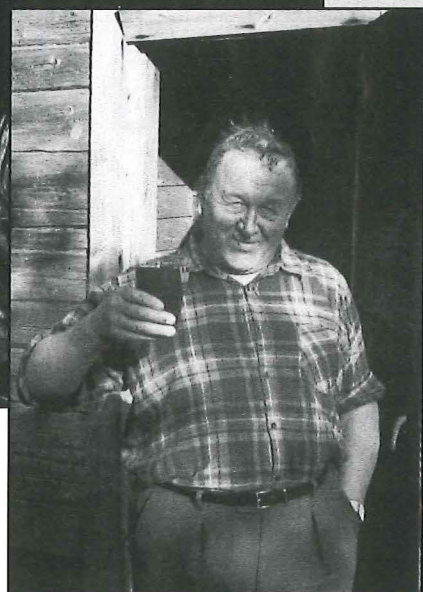
The previous summer I had seen *sahti* made in a pine cabin on a farm near Lammi. The cabin was a "kitchen" for the preparation of cattle feed from roots or grains, often rye, but it could also be used as a malting floor and kiln, a brewery, a place to bake bread or smoke meat, and it could be a sauna.

The source of energy for all these activities was a cast-iron stove and water heater fired with birch logs. When I was there, 25 liters of water, 20 kilos of barley malt and an additional two of rye were being heated on the small stove. As the water turned to steam, more was added, about five liters at a time. As fast as the resultant mash thickened, the additions of water thinned it. This process continued for four hours.

As the mash began to develop a reddish cast and foam, brewer Veikko Rautavirta told me it was nearly ready. We scraped a little up with our fingers. It tasted like sweet porridge. Veikko turned to a trough about two yards long, a little more than a foot wide and about the same deep. He put in rye straw and juniper twigs, complete with berries, un-



Veikko Rautavirta pours sparge water (above) over the *sahti* mash and juniper twigs. A tap in the bottom of the trough allows him to collect the runoff, which, after three days of fermentation and 10 days of bottle conditioning, is ready to enjoy after a sauna.



til they were piled high, then ladled the porridge mash on top.

"As soon as you put in a mash, everyone in the neighborhood seems to know that a new batch of *sahti* is on the way," Veikko observed. "It's the same everywhere. Most people's hobby is knowing what their neighbors are doing." He is well aware of people's need for news. His "day job" is driving more than 100 miles in the early hours of the morning delivering newspapers.

I was interested to learn from Veikko that there are different words in Finnish for the mashing of beer and *sahti*. In the latter case, the word *imellytys*, meaning "sweetening," also is used to describe the preparation of mashed potatoes and root vegetables in a "box" to make a winter dish.

When the mash had been liberally dolloped, water was poured on to sparge it through the twigs. In the bottom of the trough, a tap drained the liquid into a bucket. A handful of hops was added to the bucket. The juniper provides an aromatic flavor and acts as a preservative, so why the hops? "It's tradition," proposed Veikko.

Some *sahti* brewers boil their wort. More, like Veikko, do not. The brew was decanted

into a 50-liter milk churn, which it filled. This was then put into a milk cooler. Given the losses through evaporation and the piecemeal addition of water, how had Veikko achieved exactly the right quantity? He seemed especially proud that nothing had been measured.

Bakers yeast was added and the brew would be left for two or three days to ferment. It would then be hand-bottled and held for 10 days in a cellar for secondary fermentation. It would emerge between 7 and 9 percent alcohol by volume (5.5 and 7.1 by weight).

When the day's work was done we went for a sauna at a neighbor's house. This, too, had been prepared for hours. In Finland, a sauna warmed by electricity is regarded as a poor substitute. In the real thing a birch fire heats a pile of stones, and preparation takes four hours. By the time the occupants arrive the fire has gone out but the smoke and soot hang in the air.

Once the occupants are seated in the sauna, water is poured over the stones, filling the atmosphere with surges of hot steam. The smoke is said to be good for the respiratory system, the sweating to be cleansing and your neighbor's friendly assaults with leafy birch twigs to be refreshing.

"As soon as you put in a mash, everyone in the neighborhood seems to know that



Pekka Käärianen and his wife, Sirpa, brew and serve *sahti* at their pub, Sahtihaarrika, in Tuulos. There you can enjoy *sahti* from English hand pumps.

Like everything else in Finland, most saunas are near lakes. The idea is to run out of the sauna and into the lake. When this has aroused the appetite sufficiently, there are eggs that have been hard-boiled to blackness in a rack in the hot, steamy, smoky sauna. Only then, and after considerable showering to remove the patina of soot, is it permissible to quench oneself with *sahti*.

Veikko's *sahti* having not yet fermented, we drank a vintage made by his friend Pekka Käärianen. It had an orange-to-russet color and was cloudy. It had as much carbonation as a cask ale served by gravity from stillage. Its aroma and palate had notes of walnuts and bananas, developing to berry fruits, juniper and smokiness. Its texture was smooth and slightly oily. For all its assertive flavors and full body, it was perilously drinkable. Having slipped down coolly, it warmed the stomach as night finally descended.

Pekka Käärianen started to homebrew *sahti* when he was 14. Later, on the family's smallholding, he grew potatoes and carrots for sale at local markets, then went to business school. There his thesis was on the economics of *sahti* production.

In the 1800s, the drink had been made by commercial companies (including Olvi which survives as one of the country's major lager brewers). Commercial production had ended when Finland declared Prohibition in 1919 until 1932.

As part of his research, Pekka had brewed 200-liter batches and, in 1987 applied for a license to brew professionally. To his great surprise, it was granted. He now brews batches of 2,500 liters in vessels acquired from a cheese dairy. He sells his *sahti* in five-liter plastic growlers and wine boxes at restaurants and state liquor stores.

There are now seven micros producing only *sahti* and a couple more making wort for homebrewers. Most of the commercial examples are named after the communities where they are made. I have managed to sample quite a range: Honkajoki (muddy brown, syrupy, clovey, medicinal); Joutsa (orange in color with peach-nectar notes and lemony tartness); Koivula (dark brown with notes of figs and garden mint); the flippantly named Mafia, from Ilvesjoki (the color of grapefruit juice with an acidic flavor and touches of bitter chocolate), and Finlandia, from Forssa (muddy, syrupy, with a good juniper character).

In 1995, Pekka took over a pub at Tuulos, not far from Lammi. There he serves the only draft *sahti*, from English hand pumps. He also sells wort by the growler. The pub's name, boldly displayed, is Sahtihaarrika, the second half referring to the traditional drinking vessel. Another sign, almost as bold, says Sahtiravintola, announcing that this is, indeed, a restaurant where the drink can be enjoyed.

It is a single-story structure of brick and wood, painted in red oxide. Part of the building accommodates a hairdresser and another section was a small garage. That part is now the pub with half a dozen tables on a terrace. In summer it is warm enough to sit outside.

Inside, the pub has another half-dozen tables of unvarnished wood and a bar made from pine floorboards rescued from a warehouse that stored salted meat. A sledge is a central feature of the rudimentary decor, along with several vessels used in the making, storage and consumption of *sahti*.

I found the *sahti* even more drinkable from the hand pump. Several other drinkers seemed

to be enjoying it, too, west of England. One tottered to his feet and announced that he wished to sing a tribute to me for my efforts in celebrating traditional beers. He stood bolt upright, slightly too close, fixed me with a stare and began a wailing, emphatic chant. I did not recognize the language.

"Was that Finnish or Lapp?" I inquired afterwards. It sounded more like some African tongue, or perhaps Maori.

"It was no language," he responded opaquely, ordering another *sahti*.

The original material in this column was prepared especially for Zymurgy.

In the *sahti* competition reported in this article, Michael Jackson was named the year's "Holder of the Haarikka" for his writings on Finland's traditional beer. Michael is internationally the best known writer on beer. His *Beer Companion* (Running Press, 1993) was awarded the 1994 Glenfiddich Trophy, an honor never before bestowed to a book on beer. His articles, books and documentary videos and now a CD-ROM introduce beer styles to countless drinkers and brewers outside their native lands.



Ale-wives and Ale-husbands -- and Ale-singles too... All those who like Homebrew. If that includes you... We'd like to put great Brewpub Beer in your kitchen. Which should put an end to the moanin' and bitchin' you hear when the cost of good beer is discussed. We do it real cheap, so your budget won't bust. It goes with whatever you're boilin' or stewin'. Call us free! Your connection to West Coast Home Brewin'.

1-800-570-BEER

**FREE CATALOG -- FAST SERVICE
Great Fermentations of Marin
87 Larkspur San Rafael CA 94901**

a new batch of *sahti* is on the way," Veikko observed.

SPONSORS

American Homebrewers Association

Sponsors as of Oct. 24, 1995.

DIAMOND

Brew City Supplies Inc. — Milwaukee, Wis.
Weyermann, Mich GmbH — Bamberg, Germany
McCoy J. Ayers — Vallejo, Calif.
Patrick G. Babcock — Canton Township, Mich.
Daniel Bangs — Cher-Dan's Sss — Enid, Okla.
Kinney Baughman — Brewco — Boone, N.C.
Tim Beauchot — Albion, Ind.
Bill Benjamin — Benjamin Machine Products — Modesto, Calif.
Thomas Bergman — Jefferson, Md.
Jerry Black — Springfield, Ohio
Don Bockelmann — Fort Dodge, Iowa
Jeff Bonner — Kennewick, Wash.
Gary Brown — Dayton, Ohio
Terry J. Brown — Daphne, Ala.
Alan Burkholder — Columbus, Ohio
Ben Campbell — Rockford, Ill.
Jacob Chachkes — Atlanta, Ga.
Calvin Chiang — Rochester, N.Y.
L.A. Clark — Portland, Maine
Edward Corn — Agua Dulce, Calif.
Sean Cox — Greenwich, Conn.
Carman E. Davis — Nemrac Marketing Co. — Cuyahoga Falls, Ohio
Tim Deck — McEwen, Tenn.
Michael Demchak — Rocky River, Ohio
Steve Dempsey — Beaverton, Ore.
Robert Devine — Redmond, Wash.
Mark Dills — Seattle, Wash.
Randy Drwina — Chandler, Ariz.
Karl Josef Eden — St. Maarten Breweries NV — St. Maarten, Antilles, Netherlands
Timothy J. Egan — Medford, Ore.
Arthur R. Eldridge — Esko, Minn.
J. Rob Ellnor IV — New Albany, Ind.
Robert Elmer — Portsmouth, R.I.
Douglas Faynor — Woodburn, Ore.
Lee Fellenberg — Tacoma, Wash.
Matthew Floyd — Bardstown, Ky.
Kevin L. Fluharty — Elgin, Ill.
Bob Frank — The Flying Barrel — Frederick, Md.
Roy Fuentes — San Antonio, Texas
David Gagnon — South Berwick, Maine
Mindy & Ross P. Goeres — Europe
Dana Graves — Coventry, R.I.
Victor Grigorieff — Redwood City, Calif.
Joseph N. Hall — Chandler, Ariz.
Mike & Mary Hall — Los Alamos, N.M.
Alan A. Harlow — Reading, Mass.
Stuart Harms — Portland, Ore.
James Haughey — Silver Spring, Md.
John Hewett — Spruce Creek, Pa.
Tom Hildebrandt — Greensboro, N.C.
Marc & Susan Hinck — Edmond, Okla.
Gary E. Huff — Gresham, Ore.
James Hendrik Huiskamp — Keokuk, Iowa
Arydas K. Jasmantis — Logansport, Ind.
Art Jeyes — Crownsville, Md.
Robert Kapusinski — Arlington Heights, Ill.
Charles Kasicki — Port Angeles, Wash.
Kevin L. Kline — Charlotte, N.C.
John E. Kollar — Baltimore, Md.
Brian Kotso — Carefree, Ariz.
Thomas C. Kryzer — Wichita, Kan.
Andrew La Morte — Littleton, Colo.
Steve La Rue — Ogden, Utah
Steven Landry — Princeton, N.J.
Tom Larrow — Oklahoma City, Okla.
Daniel Litwin — Blue And Gold Brewing Co — Arlington, Va.
Charles Lutz — Montgomery, N.Y.
Keith A. MacNeal — Worcester, Mass.
Frank Mataitis — Owings Mills, Md.

Larry Matthews — Raleigh, N.C.
Paul McClure — Uncasville, Conn.
Dan McLaughlin — Bohemia, N.Y.
Kevin McKee — Oceanport, N.J.
Robert K. Morris — Whitehouse, Ohio
Hillel Norry — New York, N.Y.
Gordon L. Olson — Los Alamos, N.M.
Robert Park — Lake Jackson, Texas
Bruce Peterson — Finlayson, Minn.
Bill Pfeiffer — Cork And Cap — Brighton, Mich.
Robert Pocklington — Houston, Texas
Mark Powell — San Angelo, Texas
Frank Pruyn — Lakeville, Mass.
John W. Rhymes II — Homewood, Ala.
Darryl Richman — Crafty Fox — Bellevue, Wash.
Dan Robison — Salt Lake City, Utah
Dwight Rose — Brighton, Colo.
Richard P. Ross — Woburn, Mass.
John Roswick — Bismarck, N.D.
Daniel J. Ryan — Fremont, Calif.
Michael Schiavone — Leviston, N.Y.
Edward R. Schill — Glendale Heights, Ill.
Mike Simmons — Iuka, Ill.
Mike Simon — Ft. Atkinson, Wis.
Tom Smith — Columbia, Mo.
Joseph Snyder — Worth, Ill.
Thomas Spangler — Winston-Salem, N.C.
Eric D. Steele — Milwaukee, Wis.
James A. Steenburgh — Rochester, Minn.
Richard Todd — Raleigh, N.C.
Richard Truth — Sulphur, La.
William Tucker — Columbia, R.C.
D. L. Van Dame — Churubusco, Ind.
Christopher R. Wagstrom — Palo Alto, Calif.
Adam B. Walker — Cathedral City, Calif.
Bud Wallace — Merced, Calif.
Wade Wallinger — Pascagoula, Mo.
Robert J. Weber Jr. — Pacific
Ed Westemeier — Cincinnati, Ohio
Steven Willey — Europe
Donald Wood — Stanton, Calif.
Kent Woodmansey — Pierre, S.D.
Lowell D. Yeager — Norwich, Conn.

GOLD

Yeasty Brew Unlimited — Mill Valley, Calif.
Jim Anschutz — Midland, Mich.
Roger Ashworth — Sacramento, Calif.
Jack Baker — B&J's Pizza Restaurant — Corpus Christi, Texas
Chris Brauning — Zanesville, Ohio
Shawn Hamilton Brown — Minneapolis, Minn.
Rob Brunner — Windsor, Colo.
George Bush — Waunakee, Wis.
Bernhard Cordts — Ipswich, Mass.
Peter Dakin — Kanata, Ont., Canada
William A. Garrard Jr. — Coyote Springs Brewing Co. — Phoenix, Ariz.
Mark Gasser — Olney, Md.
Allen Goebel — Petersburg, Ill.
Carlton G. Hartman — Crystal Lake, Ill.
Peter D. Johnson — Portland, Ore.
Blaze Katich — Pittsburgh, Pa.
Jonathan Lillian — Upper Montclair, N.J.
Mike McClary — Warrenton, Va.
Steve McDowell — Reno, Nev.
W. E. Pinckert — Capistrano Beach, Calif.
Ian & Jake Quinn — Glen Echo, Md.
Franklin Radcliffe — Las Vegas, Nev.
Thomas Rhoads — Chicago, Ill.
Michel Rousseau — Distrivint Ltd. — Longueuil, Que., Canada
Edward G. Schultz — Mountain View, Calif.
Glen Sproule — Roswell, Ga.
Craig Starr — Atkinson, N.H.
Brian Wurst — Lombard, Ill.

PEWTER

Bucket Of Suds — Belmont, Calif.
Rillito Creek Brewers Supply — Tucson, Ariz.
Harry K. Bailey — Oak Harbor, Wash.
C. Mead Bates — Cymba Inc. — Darien, Conn.
Roger William Bauer — Dog Lips Brewhaus — Tukwila, Wash.
Paul Belenchia — Cleveland, Mo.
John Brice — Columbia, S.C.
Kevin M. Brooks — New York, N.Y.
Scott Brown — Indianapolis, Ind.
Greg Bueghly — Homebrew Outlet — Sacramento, Calif.
Walter Carey — Cos Cob, Conn.
Michael Chronister — Norristown, Pa.
Lawrence Edward Collinsworth — Sterling Heights, Mich.
Hector Contreras — Caldwell, N.J.
Jeff Craggs — Granite Falls, Wash.
Michael Cron — Brooklyn, N.Y.
Mark Cunningham — San Francisco, Calif.
Brad Day — Mich-Mash Homebrew Supplies — Ann Arbor, Mich.
Mark A. Diebolt — Arundel, Maine
Lyle Doerr — Canton, Mich.
James K. Elwell — Salt Lake City, Utah
Scott Fast — Santa Clara, Calif.
David Feldman — Sdr Inc. — Atlanta, Ga.
Steve Furstenfeld — Houston, Texas
James Gall — Ludington, Mich.
Paul Ganci — Bedford, N.H.
Marc Giuliani — Littleton, Colo.
Michael L. Godbey — Littleton, Colo.
Bill Greiner — Sunland, Calif.
C. R. Hackert — Orangevale, Calif.
H. Bruce Hammell — Trenton, N.J.
William Hassler — Pearl City, Hawaii
David Hayes — Alexandria, Va.
Bryan Helzer — Lincoln, Neb.
Walter Hodges — Carrollton, Texas
Kirk Hoffman — Yorkville, Ill.
Terry Hubbard — Washington, D.C.
John E. Irvine — Reston, Va.
Stephen James — Plano, Texas
Gregory Jevyak — Florissant, Mo.
Neal Kaufman, D.D.S. — Westlake, Ohio
John Kelbert — Sunnyvale, Calif.
Mark Kelly — Columbus, Ind.
Scott Kilde — Menomonee, Wis.
Ken L. Knoff Jr. — Racine, Wis.
Scott LaFlamme — Willimantic, Conn.
Lon Larson — Taunton, Mass.
Adam P. Lewis — Portland, Ore.
Eric Lindahl — Nolensville, Tenn.
Jeffrey Macomber — Cary, N.C.
D. Mandell — Alpharetta, Ga.
Neil McLellan — Aurora, Colo.
Ray Meyer — Goffstown, N.H.
Carlo Milono — San Francisco, Calif.
Chris L. Monnet — Houston, Texas
Rossana Monzon — Sunnyvale, Calif.
Allen Moriarty — Malverne, N.Y.
Michael Murphy — Fresno, Calif.
Charles Murray — Golden, Colo.
Chris Neikirk — Norfolk, Va.
Robert Nicholson — Upton, Mass.
Mike O'Brien — Pico-Brewing Systems — Ypsilanti, Mich.
Jeffrey Orlin — Roslindale, Mass.
John Oszejka — Kailua, Hawaii
Wendy Parker — Wood — Albuquerque, N.M.
Chris Parnell — Thousand Oaks, Calif.
David Parroh — Palm Beach Gardens, Fla.
Dale Pedersen — San Antonio, Texas
Paul Petersen — Tulsa, Okla.
Steven Pottman — Richmond, Va.
Pat & Gail Propsom — Madison, Wis.
Harold Richardson — Vacaville, Calif.

Robert Lee Robinson — ABC Beverage Store — Lilburn, Ga.
Laura Roche — Atlanta, Ga.
Stuart Scarborough — Frederick, Md.
Daniel Scherber — Winter Park, Fla.
Carl Schubauer — Stirling, N.J.
Robert Schubert — Naperville, Ill.
Jeffrey R. Schwab — West Lafayette, Ind.
Gordon Sheppard — Vienna, Va.
Mark R. Sherman — Bakersfield, Calif.
Stephen Sims — Campbelltown, Australia
Richard Siteman — Portland, Maine
Kristin Skoog — Manitou Springs, Colo.
Alex Skripnik — Bloomington, Minn.
Chuck Slack — Chicago, Ill.
Tony Smith — The Woodlands, Texas
Michael D. Spude — Madison, Wis.
Michael J. Takacs — Livonia, Mich.
Stu Thompson — Venice, Calif.
Neil Tolciss — Brooklyn, N.Y.
Julian Valles — Guaynabo, P.R.
Christian Von Der Heide — Munchen, Germany
Craig P. Waverka — Waldorf, Md.
Thomas C. Weeks — Denville, N.J.
Dave Whitcomb — Ventura, Calif.
Jeff Wilson — Birmingham, Ala.

PAPER

Columbine Mill Brewery Inc. — Littleton, Colo.
St. Louis Wine And Beer Making — Chesterfield, Mo.
Thistle Grove Industries — Johnston, Colo.
Beagle Beer — Frenchtown, N.J.
Northfork Products — Syracuse, Ind.
Big Sky Homebrew Supply — Great Falls, Mont.
G And D Homebrew Supply — Manahawkin, N.J.
Uncle Rod's Homebrew Supplies — San Jose, Calif.
Ted Calantinos' Irish Pub & Grille — Pueblo, Colo.
Head Home Brewing Distributors — Cortland, N.Y.
Marietta Homebrew Supply Inc. — Marietta, Ga.
Kevin Anderson — Fairbanks, Alaska
Michael Anderson — Clio, Mich.
Tanner Andrews — Deland, Fla.
A.L. Aumick — Loudonville, N.Y.
Michael Baker — Lubbock, Texas
Michael Balasus — Baltimore, Md.
John W. Barbain — Madison, Wis.
Brendan M. Barrett — Honolulu, Hawaii
Adam Belkin — Edison, N.J.
John Bertrand — San Pedro, Calif.
Adam Best — McMinnville, Ore.
Joel C. Bieler — Breinigsville, Pa.
James D. Bradley — Charleston, S.C.
Hal Buttermore — Ann Arbor, Mich.
Robert J. Campbell Jr. — Bayside, N.Y.
Mike Cavitt — Bloomington, Ill.
Manuel Ceja — Flushing, N.Y.
Mike Claus — Lake Elsinore, Calif.
David Cokely — Lees Summit, Mo.
Matthew Covington — Augusta, Ga.
Douglas T. Cox — Ann Arbor, Mich.
George Cravens — Hawthorne, Calif.
Barry R. Cunningham — Chillicothe, Ohio
Ara Derderian — Rancho Cucamonga, Calif.
Tom Dey — Littleton, Colo.
Peter Dohm — Anchorage, Alaska
Roy Dunfee — Cape Elizabeth, Maine
Thomas Fish — Convent Station, N.J.
Jeff Francis — St. Augustine, Fla.
Joseph Freeman — Hingham, Mass.
Greg Gardner — Merrimack, N.H.
Carl Gensler — Tucson, Ariz.

James R.M. Gibbs — Appleton, Wis.
 Jeff Gilman — Sequim, Wash.
 Chris Glynn — Cockeysville, Md.
 Byron E. Goodman — San Juan Capistrano, Calif.
 Tim Gorey — Newport News, Va.
 Paul L. Hanson — Whitefish Bay, Wis.
 Kerry Hauptli — Carrollton, Texas
 David Hayes — Alexandria, Va.
 Randy Horrocks — Orem, Utah
 Darryl W. Hughes — Gaithersburg, Md.
 Robert Hutchinson — San Clemente, Calif.
 Jason Jackson — Oklahoma City, Okla.
 Steve Jankowski — Sunnyvale, Calif.
 Matt Johnson — Pasadena, Calif.
 Ian Johnstone — San Carlos, Calif.
 Earl Josseland — Arlington, Texas
 Mark Kapusta — Granbury, Texas
 Joel Keay — Athens, Ohio
 Stephen Keller — Tallahassee, Fla.
 David Kern — Poway, Calif.
 Tim Koich — North Star — Sandpoint, Idaho
 Shawn A. Kokitus — Paw Paw, Mich.
 Dwayne Kradepohl — Roseville, Calif.
 Kris Kucera — Rochester, N.Y.
 Rick LaFrentz — Sunnyvale, Calif.
 Donald LaValley — Brattleboro, Vt.
 Bob Lamothe Jr. — Epping, N.H.
 Adam P. Lewis — Portland, Ore.
 Paul A. Lewis — Gresham, Ore.
 Scott Lewis — McKinleyville, Calif.
 David Lockshin — Fame Beverage — Canton, Ohio
 Richard Lonquist — Houston, Texas
 Keith H. Lukat — Seminole, Fla.
 Ethan Magdovitz — Chicago, Ill.
 Dale Manos — Atlanta, Ga.
 Ed Megaw — McClure, Ohio
 Russell V. Meyers — State College, Pa.
 Dean Mochizuki — Seattle, Wash.
 Claude Morris — Laramie, Wyo.
 R. Morris — Keller, Texas
 Allan Morrison — Maynard, Mass.
 William M. Mulcahy — Medford, Mass.
 Eric Munger — Salem, Ore.
 Timothy C. Nabors — Milford, Ohio

Brett E. Nicholson — Iowa City, Iowa
 Leslie Oliver — Santa Barbara, Calif.
 Douglas Osborn — Valencia, Calif.
 James Phillips — Topanga, Calif.
 Peter P. Poworoznek — New London, Conn.
 David L. Quinn — Menlo Park, Calif.
 Bradley Reeg — Chicago, Ill.
 Jim Roe & Susan Yount — Seattle, Wash.
 Tony Rolka — Saginaw, Mich.
 Edward Rozanski — Sparta, Mich.
 Nick Schmeltz — Glassboro, N.J.
 Steven Schulman — Yreka, Calif.
 Kevin Skazalski — Dearborn Heights, Mich.
 Mike Skelton — The Brewmeister — Klamath, Ore.
 Gary Soles — South River, N.J.
 T.P. Sondgeroth — Kirkland, Wash.
 Dan St. George — Marblehead, Mass.
 Steve & Michele Steinberg — Newton Centre, Mass.
 Mark A. Story — Lakewood, Colo.
 Raymond Sullivan — Westminster, Colo.
 Richard F. Tesson Jr. — Broken Arrow, Okla.
 Timothy Thomas — Covington, Ky.
 Shad Thornhill — Plano, Texas
 Alex Tiethof — Bedminster, N.J.
 Peter N. Touborg — Winthrop, Mass.
 Peter Tursi — Scottsdale, Ariz.
 Scott & Sheila Walker — Wahiawa, Hawaii
 Robert Wallace — Kinnelon, N.J.
 Ed W. Wey — Houston, Texas
 Bob Williams — Raw Enterprises — Show Low, Ariz.
 Dave Wilson — Eurobrew — Biloxi, Mo.
 Tom R. Wirsing III — Parker, Colo.
 Joe Yeager — Milpitas, Calif.
 James Yech — Bridgman, Mich.
 Thomas Zmak — St. Charles, Ill.
 J. Blake Zollinger — Logan, Utah

For more information on AHA sponsorships call (303) 447-0816.

Relax...

The Market Basket

has a superior selection of quality homebrew ingredients and supplies all at excellent prices

**\$40.00
VALUE**

For Only
\$19.95
+S&H

HOP SAMPLER

Eight Ounces Each of:

Hallertau • Cascade • Eroica • Willamette • Clusters • Fuggle

All together 3 pounds of the very freshest hop pellets available on the planet.

NORTHWESTERN EXTRACT

Case of 10 - 3.3 lb.

Mix and Match Unhopped

Gold, Amber, Dark or Weizen

NEW! Mid-West Light (20% Rice)

ON
SALE!

\$48.95
plus S & H

Save even more \$\$\$\$

Order HOP SAMPLER

Plus A CASE OF

N. W. EXTRACT

Both for only...

\$63.95

Big Deal! 20 Gallon

Stainless Brew Kettle

with Brass Spiget & Two Covers

\$199.95
+ S & H

Tele. (414) 783-5233

24 Hr. Fax (414) 783-5203

14835 W. Lisbon Road

Brookfield, WI 53005-1510



Serving the Trade
Since 1963

Wholesale Only

COMPLETE LINE OF HOME BEER AND WINE MAKING SUPPLIES

Home of the Famous
Jet Bottle Capper

Fastest Service
from Coast to Coast

Write for our
detailed list of items.

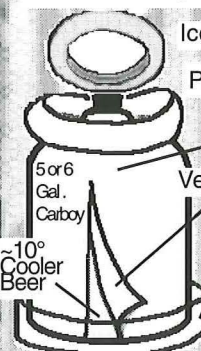
7024 NE Glisan Street
Portland, Oregon 97213 U.S.A.

Phone (503) 254-7494 • Fax (503) 251-2936

GOLDGLOAK *GA Res. Add 5% Sales Tax Complete Kit \$32.95*
\$19.95* + \$6.95* S&H

Cool Fermenting Beer Without a Refrigerator!!!

During the Hot Summer
Months You Can Keep Brewing
Award Winning Beers Using
the **GOLDGLOAK™** from
BrewStuff™



Ice From Ring Mold Pan

Patent Pending Ice Pocket

Custom Made Thick Terry
Cloth Cover Keeps Out Light!

Velcro Fastened Pullback

14" Saucer

Free Brochure
Call 404 / 373-5583
or Send Name & Address

BrewStuff
PO Box 716
Avondale Estates
GA 30002-0716

To Order w/ Visa or
MC Call 1 800/750-6350
M - F 11 AM - 7 PM

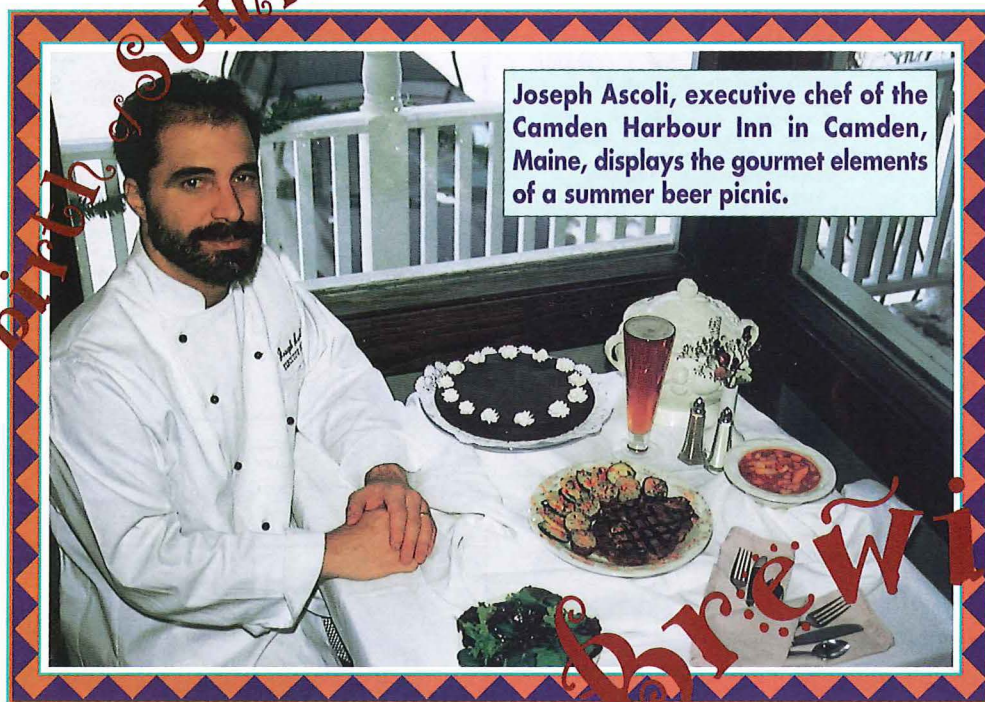
Dealer Inquiries Welcome

Use 24 Hr Fax 404 / 378 - 9471 to Order
or Request Info 7 Days a Week!

HOMEBREW COOKING

Joseph Ascoli

The Renaissance of Summer and



Joseph Ascoli, executive chef of the Camden Harbour Inn in Camden, Maine, displays the gourmet elements of a summer beer picnic.

Brewing

The renaissance of spring and summer evoke feelings of community, sharing and the need to explore the natural world. All of these desires are traditionally funneled into an event we call a picnic or barbecue when everyone gathers to enjoy good food, beer and friends. This is a natural trait in the homebrewing community because we believe our creativity is best fostered through the sharing of our brews and ideas.

Organizing a picnic for guests is not a complicated matter and is perhaps why it is such a popular pastime. One gathers friends, food, drink and picks a destination. The spot can be a blossoming meadow, the seashore, a secluded wooded cabin or your own backyard. Friends can share the cooking by bringing a portion of the meal and a favorite or new type

of beer. The tradition of friends and loved ones dining together has sustained humankind throughout time, and drink (especially beer) helps make it all happen. It is also a good time to jot down in your personal beer log which brews complemented which course, and which you favored overall. You could soon become a beer-and-food-pairing master welcome at every picnic of the summer.

With your appetite whetted for summer and its liquid delights, organize a picnic! Picnic food should be designed for ease of transportation and cleanup. Everything in this menu can be made ahead of time and assembled before mealtime. Matching the beer and food can be almost as much fun as drinking them (well, maybe not!). Beer offers the palate several options: sweetness from the malt and bitterness and/or floral tones from

the hops. These can be refined depending on the style of beer. Stouts and porters can have a toasty, coffeelike flavor, India pale ales can have a very hoppy flavor, lambics and weiss-beers (wheat) can have fruity and/or sour aftertastes. The flavor profiles rival those found in the wine industry.

There is no right or wrong way to pair beer and food. Delicate foods, such as cheeses, fish and seafood, may fare well with a Pilsener or wheat beer. More aggressive meats and spicy dishes may do well with pale ales, Vienna lagers and bocks. Light desserts may accompany a lambic or those of the heavier variety will pair well with stout, porter or barley wine. A good rule is to never let one item overpower the other. Like wines, beers should complement or contrast the main dish being served.

Grilled Ribeye Steak with Guinness Marinade

One steak per person

12 oz (raw wt.) ribeye steak (0.34 kg)

**Marinade: (Enough for one steak,
multiply as necessary.)**

- 2 cloves garlic
- 1 tsp shallot (3 g)
- 1 tbsp Vidalia onion (15 g)
- 1/4 tsp fresh tarragon (1 g)
- 1/4 tsp parsley (1 g)
- 1 tsp Worcestershire sauce (10 g)
- 1 tsp Dijon mustard (10 g)
- 4 oz Guinness Stout or Samuel
Smith's Oatmeal Stout (118 mL)
(room temperature)
- 1 oz tamari* (or dark soy sauce)
(30 mL)
- 1/8 tsp black pepper, coarsely ground
(1 g)
- 1/8 tsp salt (1 g)

Beer pairing:

Guinness Stout or Samuel Smith's
Oatmeal Stout

(1) Finely chop garlic, shallot and onion and place in a small bowl.

(2) Finely chop parsley and tarragon and add to the bowl.

(3) Add the Worcestershire, Dijon, Guinness, tamari and seasonings then mix well to combine. Let stand for 30 minutes to blend flavors.

(4) Place the ribeye in the marinade and make sure it is well-coated. Cover the bowl and place in the refrigerator for 30 minutes or overnight if being used for a picnic entrée the following day.

(5) Preheat the gas, charcoal or wood grill until the ashes are gray, then cook the ribeye.

(6) Place the remaining marinade in a small saucepan on the grill and reduce it for one or two minutes until slightly thickened. Add more beer to the marinade at this stage, if desired. Pour over the ribeye and serve.

* Tamari is a soy derivative, like soy sauce, that can be found in gourmet food shops and some supermarkets. Dark soy sauce is a perfect substitute.

Mesclun Greens with Blueberry Balsamic Dressing

Makes 2 cups (473 mL)

Mesclun greens* (suggestions:
arugula, tatsoi, red oak leaf or
green leaf lettuce, mizuna, lolla
rosa, lolla bionde, baby kale,
mustard greens)

Dressing

- 2 egg yolks
- 2 tsp Dijon mustard (20 g)
- 1/2 tsp dried thyme (0.5 g)
- 1/8 tsp salt (1 g)
- 1/8 tsp pepper (1 g)
- juice from one lemon
- 1/3 cup balsamic vinegar (79 mL)
- 1/8 cup granulated sugar (29 mL)
- 1 cup blueberries, fresh or frozen**
(237 mL)
- 1/3 cup olive or salad oil (79 mL)

Beer pairing:

India pale ale

(1) In a food processor or mixing bowl combine egg yolks, Dijon mustard, thyme, salt, pepper and lemon juice until well-blended.

(2) Add balsamic vinegar, sugar and blueberries and blend well.

(3) Slowly drizzle in oil until a firm emulsion is created. The consistency is up to the individual, some may like a loose dressing or one that is almost mayonnaise-like.

(4) Chill and drizzle over mesclun greens just before serving.

* Mesclun greens are young versions of some common and some not-so-common lettuce varieties. They can be found in almost any supermarket or organic food store. If you can't find these types, use iceberg or romaine.

** If you use frozen blueberries they will chill the dressing so it is ready to use immediately.

Smoked Chipotle and Mango Gazpacho

**Makes 1 gallon (3.78 L) or 16 8-oz
servings**

- 2 underripe mangos*
- 3 cucumbers
- 2 dried chipotle peppers, soaked in
water**
- 1 dried paprika pepper, soaked in
water**
- 2 tbsp garlic (30 g)
- 2 tbsp shallot (30 g)
- 1 pound plum tomatoes (0.45 kg)
- 1 red bell pepper
- 1 yellow Holland pepper
- 1/2 cup vinegar (use a chili-infused
vinegar, if possible, or rice wine
vinegar) (118 mL)
- 46 oz tomato juice (1.36 L)
- 1/2 cup white wine (dry Chardonnay)
(118 mL)
- 1/2 cup Dos Equis lager (118 mL)
- 1 1/2 oz (shot) of Sauza tequila (44 mL)
- 1/4 tsp cumin (1 g)
- 1/4 tsp ginger (1 g)
- 1/4 tsp coriander (1 g)
- 1/4 tsp black pepper (1.5 g)
- 1/8 tsp salt (1 g)
- 1/2 tsp garlic powder (3 g)

Beer pairing:

A Vienna lager — try Dos Equis.

(1) Soak dried peppers in lukewarm water until softened, roughly 30 minutes, then chop finely and place in a large bowl. The chipotle pepper is smoky and mild in heat intensity and lends a subtle, round, smoky flavor to the soup. An accurate way to test the heat level of a dried chili pepper is to taste the liquid that was used to reconstitute it. If the liquid is bitter or too hot, the pepper will be as well.

(2) Peel and cut the underripe mangos in half. Chop the firm flesh into small pieces and put in the large bowl. Repeat this procedure with the cucumbers and red and yellow peppers. Coarsely chop the plum tomatoes and add to the bowl.

(3) Finely chop garlic and shallots and place in the bowl along with the herbs and spices.

(4) Add tomato juice, wine, Dos Equis, tequila and vinegar and mix well to incorporate all ingredients.

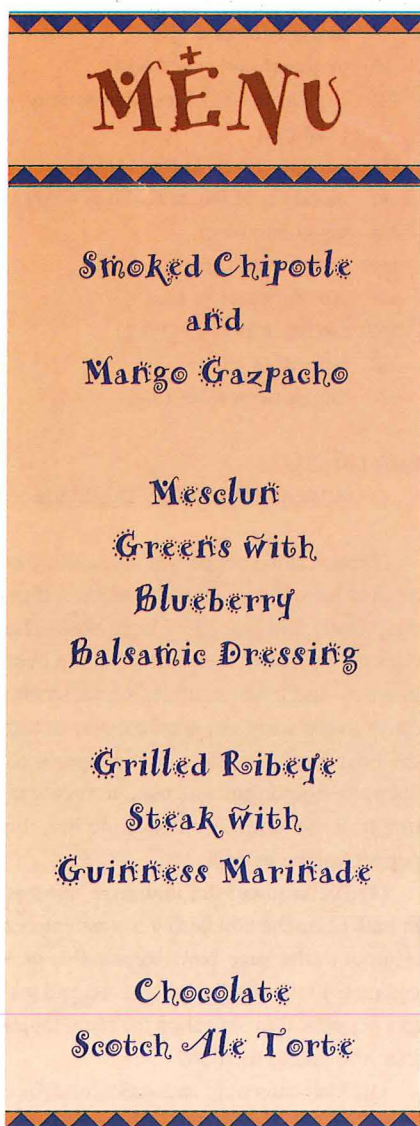
(5) Adjust the seasonings with salt and pepper, if necessary.

(6) Loosely cover the bowl and place in the refrigerator overnight (or at least eight hours) for the flavors to combine and mellow.

(7) Serve in chilled bowls and garnish with chopped cilantro.

* Use an underripe mango because the texture and flavor are more like a vegetable than a fruit.

** The various dried peppers are available in specialty stores and gourmet shops in many areas. Any favorite pepper (dried or fresh) can be used.



Chocolate Scotch Ale Torte

Serves 16

Torte

- 1 tbsp shortening (15 mL)
- 4 oz bitter chocolate (113 g)
- 8 oz bittersweet chocolate (226 g)
- 1/2 cup Scotch ale — MacAndrews or Samuel Adams™ Scotch Ale (118 mL)
- 1 1/3 cup granulated sugar (315 mL)
- 1/2 pound unsalted butter (226 g)
- 6 egg yolks
- parchment paper

Ganache

- 6 oz bittersweet chocolate (170 g)
- 2/3 cup heavy cream (158 mL)
- 1 1/2 oz unsalted butter (42.5 g)

Beer Pairing:

MacAndrew's Scotch Ale,
Samuel Adams™ Triple Bock™
or Scotch Ale

(1) Grease an eight-inch (two-inch-deep) round cake pan with shortening or non-stick vegetable oil spray and line with eight-inch circle of parchment paper.

(2) For the torte combine Scotch ale and sugar in a saucepan and bring to a boil for one minute. Pour mixture over chocolate pieces and stir until chocolate is completely melted. Add butter and stir; the chocolate will develop a fine sheen.

(3) Beat egg yolks until creamy, add to the chocolate mixture and incorporate until the batter has a uniform consistency.

(4) Preheat oven to 350 degrees F (177 degrees C). Prepare a water bath by filling a rectangular baking pan one-third full with tap water.

(5) Pour the batter into the prepared cake pan and place in the water bath, adjusting the water level so it reaches halfway up the cake pan.

(6) Bake for 25 to 30 minutes or until a cake tester or fork comes out clean when inserted into the center of the torte.

(7) Remove from oven and cool for 10 minutes then invert onto a baking rack to

cool further. Place in refrigerator to cool completely.

(8) For the ganache break the chocolate into small pieces and place in a small stainless-steel bowl. Prepare a double boiler with an inch or two of water and place directly on high heat. Insert the upper bowl containing the chocolate pieces over the water. Do not let the water splash or enter the top bowl — water and chocolate are mortal enemies and the chocolate will seize (tighten up) and be useless as a coating for the torte.

(9) In a separate saucepan, add the heavy cream and scald over medium heat. (Scalding is bringing the cream to the point of boiling but not actually boiling it.)

(10) Pour the cream over the chocolate and let it sit still for one minute, then stir the mixture slowly. Heat from the double boiler, the cream and the stirring help melt the chocolate. Stir until completely melted and add the butter, stir again. The ganache should have a glossy sheen and smooth consistency.

(11) Remove the torte from the refrigerator and place on a baking rack. Pour the warm ganache over the torte until completely covered. Place the torte in the refrigerator again to allow the ganache to harden completely, preferably overnight. It will then be ready to serve.

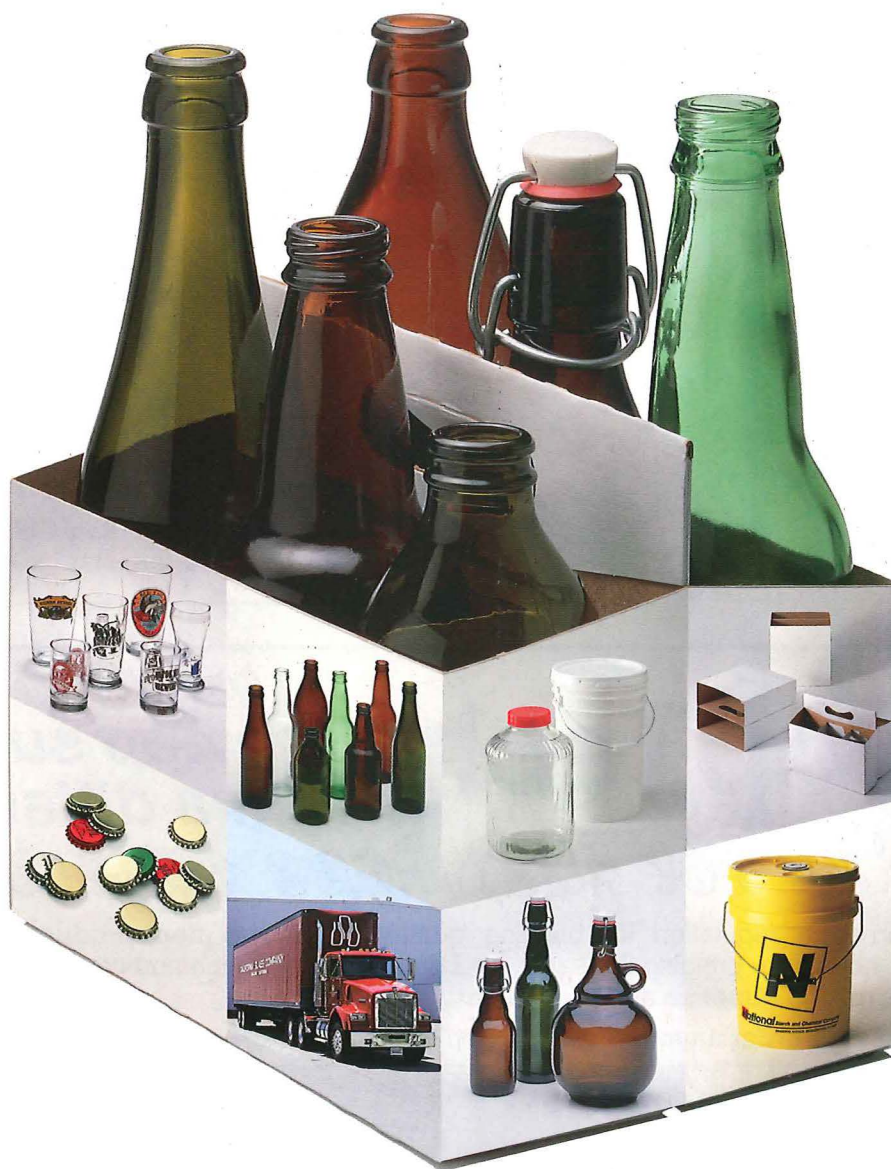
References

- Aidells, Bruce & Kelley, D. *Real Beer and Good Eats*, Knopf Publishing, 1993.
- Cosman, Madeleine P., *Fabulous Feasts*, Braziller Publishing, 1976.
- Jackson, Michael, *Michael Jackson's Beer Companion*, Running Press, 1993.
- Nachel, Martin, *Choosing a Beer to Complement Any Dish*, Fine Cooking, Tauton Press, Aug./Sept. 1995, No. 10.
- Joseph Ascoli, a homebrewer for three years, is the executive chef of the 122-year-old Camden Harbour Inn in Camden, Maine. When he isn't cooking or homebrewing, he enjoys scuba diving.

©1996 Joseph Ascoli



Bottles and Glasses are Just Part of our Package.



**CALIFORNIA
GLASS
COMPANY**

155 98th Avenue Oakland, CA 94603
(510) 635-7700
Fax (510) 635-4288



**PACIFIC
COAST
CONTAINER, INC.**

Vancouver Commerce Park
11010 N.E. 37th Circle, Unit 110
Vancouver, WA 98682
(360) 892-3451 (800) 326-8971
Fax (360) 892-4955



**CARLEN
COMPANY, L.L.C.**

6834 S. University Blvd.
Littleton, CO 80122
(303) 694-0919
Fax (303) 694-0859



**COLUMBIA
PACKAGING**

#3 20306 Dewdney Trunk Rd.
Maple Ridge, BC V2X 3E2
Canada
(604) 465-7694
Fax (604) 465-1702

The Ultimate Package.

CYMBIA, Inc. 1-800-447-7613
Custom Bottle Openers small club runs

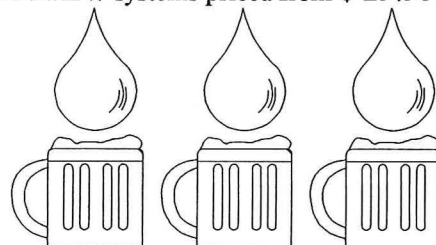


CYMBIA, Inc. 23 Gardiner St. Darien, CT 06820

DO YOU WANT TO MAKE BETTER BEER?

USE BETTER WATER!

- ♦ **FILTER** your tap water...forget about boiling or buying bottled water!
- ♦ Remove rust, chlorine, odor and bad taste from tap water - producing clear and clean brew water.
- ♦ Designed for the home brewer by a home brewer.
- ♦ **EASY** to use... connect to virtually any faucet.
- ♦ **PURE-BREW** systems priced from \$ 29.95



Call or Write for more information

1-800-255-5653

Dealer inquiries invited

YOUR HOME BREW WILL THANK YOU!!

ZYMURTECH

3525 Del Mar Heights Rd. #435, San Diego, Ca 92130



HopTech

We're not just hops anymore!

homebrew

The ~~hop~~ supplier with a difference!

HopTech has earned a reputation for bringing **quality hops and hop products** to home and microbrewers, and now we're bringing the same level of quality, innovation and commitment to the finest selection of **homebrewing supplies and equipment**.

And we're not just mail-order anymore either! HopTech has now opened a retail store, so stop in!

- Wide Selection of Malts and Grains
- Dry and Liquid Malt Extracts
- Over 19 Varieties of Hops
(Domestic and Imported)

- CO2 Extracted Hop Oils and Extracts
- 100% Natural Fruit Flavors
- Complete Line of Brewing Equipment
- Mail-order and Retail Store (open Sundays!)

Call for our free, highly informative catalog

Please allow 3-4 weeks for delivery.

HopTech

3015 Hopyard Rd. Suite E
Pleasanton, CA 94588

Order Line: 1-800 DRY-HOPS (379-4677)

Advice Line: 1-510 426-1450 FAX: 1-510 426-9191

☞ Check out our WEB Page!
<http://www.hoptech.com>

Hours: M, T, Th, Sat: 11-7. Fri: 11-9. Sun: 12-4. Closed Wed.



We wholesale our hop products and fruit flavors to retailers and microbreweries. Please inquire.

TIPS & GADGETS

Our Members



Boilover Abatement

Keep a cup of ice cubes handy during the wort boil. If the foam in the kettle creeps too close to the edge for comfort, toss in a few cubes and watch the foam subside.

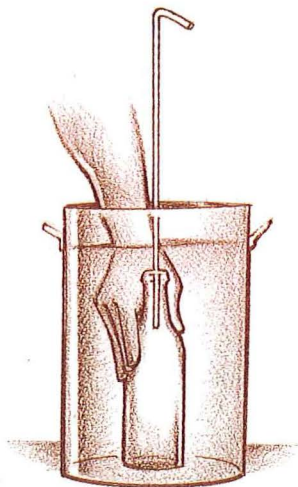
Bob McCracken, Portland, Ore.



CO₂ Tank Stands

Use a Christmas tree stand to steady a round-bottomed 2 1/2-pound CO₂ tank, or any CO₂ tank, for that matter. Tree stands are sometimes available at thrift shops in the off-season.

Lee Smith, Heart of the Valley Home Brewers, Corvallis, Ore.



A Quick Fill

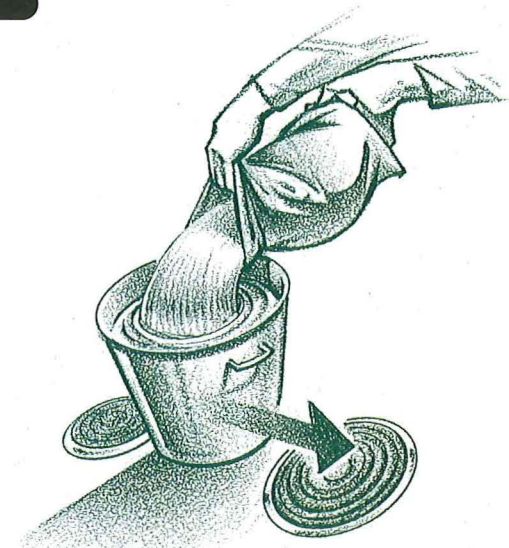
To fill bottles quickly when soaking them in a bucket of sanitizing solution, hold the bottle under water with one hand and insert a racking cane about one-half inch into the neck of the bottle. This helps the air escape and the bottle fill quickly with water. It takes about eight or nine seconds for a bottle to fill without the cane and about two seconds with the cane. This makes a difference when sanitizing 60 bottles.

Scott Pitcock, Orange Park, Fla.

Increased Pourability

If you have time to do the dishes prior to brewing (maybe while you are collecting your equipment), remove the labels from the cans of extract and run them through the dishwasher and air-dry cycle. By the time you are ready to brew, the extract will be soft and easy to pour.

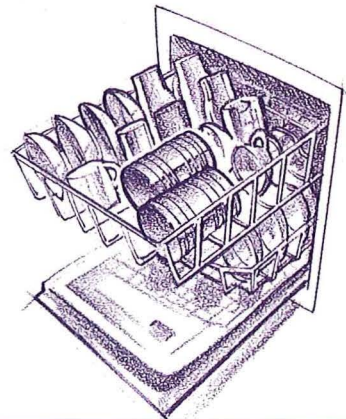
Jason Henning, Kansas City, Kan.



No More Lumps

An easy way to avoid the hard, lumpy malt globs often encountered when adding dried malt extract to boiling water is to add the extract to warm water first, then raise the temperature to boiling. The extract will be easier to dissolve and, as an added benefit, less extract will stick to the inside of the bag because steam won't condense there as you pour the dried malt extract.

Joe Messina, Paumanok United Brewers Inc., South Huntington, N.Y.



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





Extracting the



ILLUSTRATIONS BY BOB STAAKE

Picture this. The homebrewing kit you received for Christmas fermented a hit and you know the neighbors will soon be asking for more, but you have only one bottle left. You head to the local homebrew shop and stroll through the malt extracts aisle, past rows of brightly designed cans of malt extract with names like bitter, Pilsener, American brown ale, stout and IPA, then past different shades of dried malt extract. No problem, you think.

Anyone who brews beer for quality has heard the benefits of all-grain brewing extolled: it's the natural next step, it makes better beer, commercial breweries use all grain, it's the sign of a true brewer. The majority of homebrewers, however, brew great beer with malt extracts.

According to Mike Smith, owner of Mr. Beer Products, which sells homebrewing equipment and malt extract, the majority of homebrewers want simplicity. "The mainstream — 95 percent of American homebrewers — brew with malt extracts because it's less complex and less time-consuming," says Smith. "Very few, I'd say as many as want to go out and get their wheat [for bread] and crush it, are interested in all-grain brewing. If you want to have beer to drink all the time, you are not going to spend more than four hours making it."

"For us it's a two-hour process versus a five-hour process," says Pat Spiritus, co-owner of Hamilton-Gregg Brewworks, a malt-extract-based brew-on-premises business in Hermosa Beach, Calif. "If you really pay attention to using a quality extract, you can brew very good beer."

Some professional brewers use malt extracts as well. "We're in the basement of a building," says Don Gortemiller, of Pacific Coast Brewing Co., a malt extract-based brewpub in Oakland, Calif. "I have no room for storing, milling or disposing of grains." Gortemiller's beers have won Great American Beer Festival® medals several years in a row.

Essentials

By **Bill Metzger**



Kinney Baughman, brewer at the Boone, N.C., Cottonwood Grille, says, "You can brew great beer with extract. I brewed all grain for years. Then, when I landed this job, I found I had to rethink how I brewed." Cottonwood won a bronze medal in the Belgian-style specialty ale category of the 1995 Great American Beer Festival with an extract brew.

Smith sees extract brewing as an easier way to increase the variety of styles of beer to drink. He says, "I found most people going into it as a hobby would rather make a lot of different types of beer — maybe try beers with several different hops — and [the ease of] extract brewing makes this more possible."

This desire to brew different beer flavors and styles has created unprecedented demand for different malt extracts. The homebrew supply industry has worked to meet this demand, producing malt extracts in a multitude of colors and flavors, allowing homebrewers to brew virtually any beer style in the world.

Making Malt Extract

Commercial breweries begin the all-grain brewing process by choosing the malt types they will need to produce a certain beer style. The barley has been malted, meaning enzymes have been released so starches can be converted to sugars. Breweries crush, or mill, the malt then steep it in water. The starches dissolve in the water, where enzymes break them into fermentable sugars. The sweet wort and water are circulated through the grain bed to clarify and filter the wort. Brewers then boil the wort, adding hops for bitterness, flavor and aroma.

The convenience of brewing with malt extracts is that these milling and mashing steps have been completed for you. Malt extract manufacturers mill, mash, sparge and boil. Many brew the beer entirely, adding the various malts and hops called for in a given recipe. They then send this processed wort to evaporators that remove most of the liquid, resulting in the viscous substance called malt extract syrup.

Improving Standards

Malt extract production techniques and product quality have improved noticeably, along with advances in labeling and product literature.

"There has been a marked improvement in the quality of malt extracts over the past five years," says Spiritus. "It used to be you could hardly find good extract. Now you can find many and the thing is to find out which is the best quality."

"There's nothing on the shelves, other than about one or two malts, that homebrewers are going to have a bad experience with," says Smith. "They might find something they don't like, but there really is not a lot of bad product on the shelf."

"We have a very rigid system of quality control," says Andy Janes of Munton and Fison, a malt extract manufacturer in Suffolk, England. "We do continuous microbiological counts and tests for color, bitterness and fermentability, to make sure what's leaving the gates will do what it's designed to do."

Susan Graydon, sales and marketing manager for Premier Malt Products, a malt extract manufacturer in Grosse Pointe, Mich., echoes this view. Premier's first concern is, "Does the malt extract do the job it is supposed to do? Does it give outstanding performance in flavor, bitterness, sweetness, body and appearance?" To ensure this, Premier sets quality control specifications for the raw materials at food product safety standard levels, then meets those standards.

Choosing a Malt Extract

In the quest to brew better beer, it behooves homebrewers to know a little about choosing malt extract. But given that virtually all brand names have high standards of quality, what should homebrewers look for? While malt extract manufacturers won't tell you the exact ingredients of their products — those are trade secrets — there are ways to

Black Bear Stout

Kinney Baughman, brewmaster for Cottonwood Grille in Boone, N.C., and owner of BrewCo., has provided a five-gallon version of his popular stout.

Ingredients for 5 gal (19 L)

- 2 cans (3.3 lbs each) light malt extract syrup (3 kg)
- 1 lb light dried malt extract (0.45 kg)
- 3 cups roasted barley (710 mL)
- 1 1/3 cups chocolate malt (315 mL)
- 2 cups crystal malt (473 mL)
- 3/4 cup black patent malt (177 mL)
- 1 1/2 oz. Northern Brewer hops, 7 to 8% alpha acid (43 g) (80 min.)
- Wyeast London ale No. 1028 liquid yeast or Lallemend's Windsor dry yeast
- 3/4 cup corn sugar (to prime) (177 mL)
- Original specific gravity: 1.058
- Final specific gravity: 1.018

Crush grains, place in mesh bag and steep in three gallons (11.4 L) of water. Turn the burner on high and begin bringing to a boil. Dip the grains in and out of the water in the kettle several times as the water approaches 170 degrees F (77 degrees C). Remove grains when the water temperature reaches 170 degrees F (77 degrees C).

Sparge the grains with one gallon (3.8 L) 170 degree F (77 degrees C) water then add to the kettle along with liquid and dry malt extract.

Boil 10 minutes. Add the hops. Boil for 1 1/2 hours. Cool and aerate wort, pitch yeast and ferment at 65 degrees F (18 degrees C) for three weeks.



make sure you are buying a malt extract that produces better quality beer. The most common advice from extract manufacturers and wholesalers is to make sure the product is produced from 100 percent malted barley. Many sugars other than malted barley are fully fermentable, resulting in a thinner, lighter-bodied beer. Non-barley-malt sugars can also give your beer a cidery or winy taste when used in large amounts.

On the other hand, there are reasons you might not want a 100 percent malted barley extract. "I would say that 80 percent of our products are all malt — our bitter, IPA, Yorkshire bitter, porter and stout kits need to be all malt," says James Hibbins, business development manager at Edme Ltd., a British malt extract manufacturer. "But when you come down to making light lagers or Pilseners [with all-malt extracts], you end up with a heavy beer that is not true to style. For example, we have a wheat- and barley-based kit to get the perfect weizen beer flavor profile."

Munton and Fison makes a less than 100 percent malted barley extract, too. "We add corn syrup to our American Light kit, to make it more true to form," says Janes.

Percentage of Solids

Malt manufacturers remove most but not all the water in their extract syrup, resulting in a thick, viscous product. The viscosity is determined by the percentage of solids in the extract. In the United States, the percentage of solids is most often expressed on the Brix scale of pounds of solid sugar in a 100 pound sample.

"For economics, you want the most concentrated extract you can find," says Bill Peter, owner of Northwestern Extract Co., a Wisconsin extract manufacturer. "Eighty Brix (roughly equivalent to 80 percent solid sugars) is standard. But, for example, [some] malt extract has 70 Brix. This means there is more water in the extract." Percentage of solids is important enough to Northwestern that they include it in their quality control tests, says Peter.

A malt extract of 80 Brix is dry enough to prevent bacteria and wild yeast from working while the extract is in storage. Higher Brix measurements may also cause problems because the manufacturer had to add extra heat to further dry the extract, resulting in a caramelly flavor that may not be appropriate.

A careful malt extract consumer will compare price, Brix and quantity: four pounds of 70 Brix extract has as much sugar as 3 1/2 pounds of 80 Brix extract.

Freshness

Another feature for homebrewers to watch for is the age of the malt extract. "Freshness is important," says Peter. "Our extract is good for four months, especially the lighter colors. They don't go bad, but will turn dark when subjected to light. That makes it difficult to brew certain beer styles, and is why we put our malt extracts in a plastic bag and a box." Peter recommends storing extracts no warmer than room temperature in the dark.

Gortemiller recommends buying your extract "from someone who produces it as close as possible [to the source of the grain]. The freshness of extract will help determine the quality of your beer. As malt extract ages, it will darken so you can't make pale beers."

"Malt extract, because of the high Brix (above 70), has a pretty long shelf life," says Tom Alexander, an owner of California Concentrate Co., a homebrew supply business that packages and sells malt extracts. "It will last two to four years in a can, although we recommend no more than a six to eight month shelf life optimally. The thing to remember is that after the can is opened, it is the perfect environment for [mold] growth. Within a week or two of opening a can, you'll have [mold] growth and the extract will sour on you."

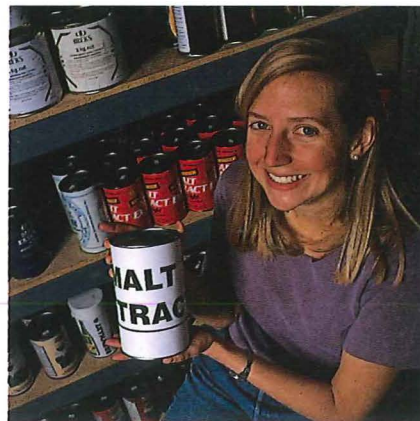
Briss Malting Co. of Chilton, Wis., which manufactures malt extracts, recommends keeping malt extract covered with a layer of carbon dioxide or nitrogen once they are opened to prevent mold growth. "This keeps the moisture away from the surface," says Briss' Mary Anne Gruber. "Moisture dilutes

the extract and allows mold to grow." Using carbon dioxide is more relevant to homebrew shops, which can connect a CO₂ tank to their 55 gallon drums of extract. For homebrewers, Gruber says you can skim off the mold and brew with the extract as long as the mold hasn't grown too deep.

Color

Malt extract manufacturers process wort in evaporators, which work in a vacuum. The extract boils at a much lower temperature in a vacuum, preventing the color from darkening too much. Color is important when a homebrewer is trying to brew a beer style with certain characteristics. "It's very true that beer drinkers drink with their eyes," says Hamish Dowell, managing director of Maltexo Ltd., a malt extract manufacturer in New Zealand. If the beer is entered in a homebrew competition, color becomes even more important. Given that weather conditions vary each year for growing barley, manufacturers must compensate for this when making the malt extracts. "If the malt we were using was particularly light, we might compensate by adding crystal malt," says Hibbins.

Gortemiller recommends homebrewers "get as pale an extract as possible. With the darker extracts, you can only make ambers or darker colored beers. The palest extract that's got as neutral a flavor as possible allows us the flexibility to brew anything from Belgian tripels to imperial stouts [from a neutral starting point]."



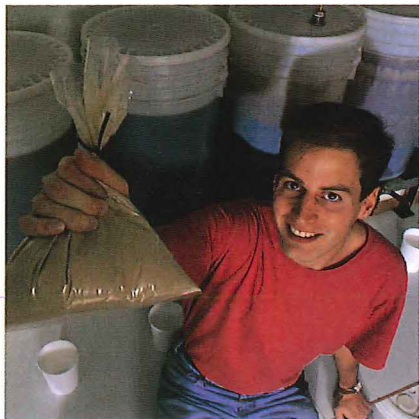


Dry vs. Liquid Malt Extract

Dry malt extract is made by reducing the moisture content to about 3 percent. Heat-processed malt extract enters a dryer chamber from the top through a spinning disc atomizer. Flowing air keeps the atomized extract droplets spinning in a spiral until the droplets dry, then they are expelled through an outlet in the base of the dryer. The finished product is chemically identical to liquid malt extract, except for the moisture content. Briess' dry malt extract, for example, is 97 percent wort solids. Whether dry malt extract is better to use than liquid malt extract depends on whom you talk to. Sam Wammack, owner of The Home Brewery, a homebrew supply business with outlets in several states, sells dry malt extracts. "They're more compact to ship," says Wammack. "No sense shipping around a lot of water. Dry malt extract also has a greater shelf life."

"Lighter-colored DMEs have a tendency to maintain their color compared to lighter colored liquid extracts," says Peter. "Other than that they're pretty much interchangeable." Because it has a higher content of wort solids, homebrewers can use less dried malt extract. Five pounds (2.27 kg) of dry is equivalent to six pounds (2.72 kg) of syrup.

According to Briess, dry malt extract is hygroscopic, which means that once the bag is opened it will absorb moisture from the air,



cake up and become unuseable. Once opened, Briess recommends "The air should be removed by squeezing the plastic liner and then sealing the bag by folding over or tying."

Dry extract is convenient for making small batches for yeast starters and priming solutions. Many homebrew supply shops sell syrup and dry malt extract in bulk which enables you to purchase as much as you need at a given time. Dry or syrup? It's up to you. Which version do you find easiest to work with? Which gives you the results you want?

The Taste Test

A malt extract's flavor is a very important factor in choosing a brand. "Every malt extract manufacturer is going to have a different signature," says Hibbins. "Our IPA and another company's IPA won't taste the same. Choose the extract you like."

Talking to the local homebrew shop owner, visiting a brew-on-premises and brewing a few samples, or comparing notes and results with other homebrewers is a good way to evaluate extract flavor and results. As with cooking, tasting the ingredients is the best way to judge flavor contribution. If it smells and tastes good, use it.

To Boil or Not?

Many homebrewers, in the United States in particular, dispute the no-boil instructions given on some malt extract cans. In fact, some homebrew shops print instructions that advise ignoring such instructions and recommend boiling the extract for no less than 45 minutes. The philosophy behind these no-boil kits, according to their manufacturers, is that the easier it is to homebrew, the more people will try it and the more people will keep homebrewing. In the case of no-boil kits, the wort has already been prepared and boiled, only needing reconstitution and fermentation by the homebrewer.

"No-boil beer, if prepared properly, can and does produce fine-quality beer," says

Graydon. "It is generally done from the point of view of 'no mess, no fuss, get an introduction into the great hobby of making your own beer.'"

"Studies we've done reveal that some homebrewers, if they had to boil, may give up homebrewing," said Janes. "We boil the wort ourselves when we're making our extracts. The only benefit of boiling is to guarantee the sterility of the water," he says, and sees problems with long boils. "The wort can caramelize, and it can lose subtle flavors. As long as your water is clean, you don't need to boil. If it's not convenient to boil, why do it?" Janes said Munton and Fison's tasting panel gave better marks to the control beer made without boiling the malt extract.

"Edme doesn't produce no-boil extracts, but our sister company, Tom Caxton, does," says Hibbins. "The reason is because other markets demand it. In the United States people seem to be happy spending more time brewing. In the U.K. a large sector of people brew to make quick, inexpensive beer. That's the sector that demands no-boil kits."

"No-boil kits are generally OK, but are certainly more susceptible to contamination problems," says Peter. "If something happens to a no-boil product, you can pretty much assume it was a problem of contamination."

Beer Style Kits

With the tremendous interest in brewing beer styles from all around the world, malt extract manufacturers, wholesalers and retailers have started creating kits to brew with the color, aroma and flavor profile of universally recognized styles.

"We get our information on what beer styles to make mainly from the market," says Janes. "I talk to people around the world, trying to find out what people want to buy."

"We formulate a recipe for a malt extract because there is a demand from homebrewers," says Hibbins, who recently launched an IPA kit.

"The impetus for a style comes from customers, distributors and retailers," says

Graydon. "We also might decide to produce a kit to expand our offerings, add a style to fill an existing hole in the lineup, or meet the competition who have added to their line. We decide on an idea or style we're looking for and the technical staff gets examples for that style," continues Graydon. "They look a lot at *Winners Circle* and *Victory Beer Recipes* (Brewers Publications, 1989, 1994). They begin their formulation and start brewing. We then decide by trial and error." Recipes are usually formulated after extensive sampling of the beer, especially when the beer style is a classic.

"Because we mostly make kits for English ales, we have a fairly extensive list of choices," says Hibbins. "We buy as many samples as possible and have a tasting committee composed of myself, our production director and head brewer, and various other people involved in production. Our brewer makes several examples and we get together and try them."

The process takes anywhere from six weeks to several years. Sometimes starting over again is the only way to get it right. Homebrew supply retailers use many different methods to formulate kits from shiny stainless-steel brew labs to easy-to-use, easy-to-clean homebrew kitchens.

"The basis of our recipes is *The Complete Joy of Home Brewing* by Charlie Papazian (Avon, 1984)," says Wammack. "I start within those parameters and do some test brewing." He says some of the kits they come up with are modeled after competition-winning beers.

Those carefully formulated, tested and tasted kits are still considered foundations on which to build personalized recipes by many homebrewers. The ability to express oneself through beer is a large part of homebrewing's attraction.

Graydon advises, "When trying a new kit, follow the manufacturer's suggestions first before you alter the recipe."

Wammack says, "What we've got is a fully prepackaged kit. Everything is marked and recipes tell you how and when to use it. Obviously, if someone wants to vary, I'll

tell them to throw in a few pounds of [specialty] malt, try it out."

"More power to the people who experiment," agrees Janes. "It's one reason we give specs on our malt extract cans, so if someone wants to vary, they know what the kit has."

"If you start out with malt extract, then add some grains, you'll brew well," says Alexan-

der. "You can make a great product with a little extra amount of grain and some hops."

"People are going to play around with different sugars, hops and that's great," says Hibbins, but he also warns, "Sometimes it frustrates us because people are making judgments on a product that was formulated to be used a certain way."

Blue Whale Ale

Don Gortemiller, brewmaster for Pacific Coast Brewing Co. in Oakland, Calif., began brewing in 1975 when he received a homebrew kit for Christmas. His Pacific Coast beers have won numerous awards at the Great American Beer Festival®. Here is a scaled-down version to homebrew.

Ingredients for 5 gal (19 L)

- 8 lb Alexander's pale malt extract syrup (3.63 kg)
- 1 lb 20 °L caramel malt (0.45 kg)
- 1 lb 40 °L caramel malt (0.45 kg)
- 1 1/4 oz Nugget hops, 14.6% alpha acid (35 g) (90 min.)
- 1 1/4 oz Chinook hops, 11.8% alpha acid (35 g) (90 min.)
- 3/4 oz Willamette hops, 4.4% alpha acid (21 g) (20 min.)
- 3/4 oz Centennial hops, 10.3% alpha acid (21 g) (20 min.)
- 1/2 oz Perle hops, 6.6% alpha acid (14 g) (20 min.)
- 1/2 oz Chinook hops, 11.8% alpha acid (14 g) (20 min.)
- 1/8 oz yeast nutrient (3.5 g) (20 min.)
- 1/5 oz Irish moss (6 g) (20 min.)
- 1 3/4 oz Oakmore (Packaged wood shavings left over from barrel making. Use American oak chips if you can't find Oakmore.) (50 g) (dry, in secondary)



- 1 3/4 oz Centennial hops, 10.3% alpha acid (50 g) (dry, in secondary)

Nottingham ale yeast

- 3/4 cup corn sugar (177 mL) (to prime)
- 1/2 packet Champagne yeast (to prime)

- Original specific gravity: 1.070

Bring about 4 1/2 gallons (17 L) of water to 150 degrees F (66 degrees C). Place the crushed caramel malt in a grain bag and steep in the hot water. Remove spent grain after steeping for 30 minutes. Mix in the malt extract and bring volume up to 5 gallons (19 L) with water.

At the end of a 90-minute boil, cool and aerate wort then pitch yeast. Ferment at 65 degrees F (18 degrees C) for about seven days or until done. Place carboy in refrigerator and cool to about 40 degrees F (4 degrees C). Rack into clean and sanitized carboy. Add dry hops and oak chips. Let stand at 40 degrees F (4 degrees C) for at least one week.

Rack into clean and sanitized carboy, add finings, if desired, and let stand at least 24 hours. Rack into a clean and sanitized carboy. Add priming sugar and one-half packet of Champagne yeast. Bottle then drink when carbonated.



Further Reading

Farrell, Norman. "The Enchanting World of Malt Extract — Make the Most of It," *Zymurgy* Winter 1994 (Vol. 17, No. 5).

O'Neil, Carol. "Extract Magic — From Field to Kettle," *Zymurgy* Winter 1994 (Vol. 17, No. 5).

Any last tips from people in the business? "At the end of the day, all homebrewers are trying to make good beer, not cheap beer," says Janes. "Look for a product you and the shopkeeper have confidence in. Don't be bamboozled by clever marketing. Price should be a second or third consideration."

"Buy a good scale and be more exact," says Gortemiller. "You're brewing at a smaller scale when you're doing five-gallon (19-L) batches so a small inaccuracy can make a bigger difference in your result." Gortemiller also recommends getting as large a brew kettle as possible.

"Boil the whole thing, or at least make sure you're using the same amount of water each time if you want consistency. If you don't have the same volume each time, you'll get different hop extraction rates." Gortemiller says hop extraction rates are not as good in more concentrated worts. "Also, use a heat exchanger (wort chiller) to reduce the time you need to cool the wort, and ferment in glass."

"Brewing a great beer with malt extract

requires using your hops well," adds Baughman. "When you sink your nose into an Anchor® Liberty Ale, or a Sierra Nevada® Pale Ale, you don't notice the malt, you notice the hops." Baughman has rigged up a hop back, which allows wort to run over the hops in an enclosed container, giving the finished product better hop aroma and flavor.

As one brewer noted, think of malt extract as a background you are painting on. Use hops and specialty malts as your paint and brush, and let your creativity flow.

Bill Metzger has been homebrewing since 1989. He also edits and publishes *Southwest Brewing News* and *Great Lakes Brewing News*.

©1996 Bill Metzger



WHERE
IN THE
WORLD
CAN YOU
FIND
BELGIAN
BEER
SUPPLIES?

YOU'VE GOT
TWO CHOICES.



Come to Steinbarts for Belgian grains, herbs, candy sugar, liquid yeast and other specialty items to make authentic Belgian beer.


FH STEINBART
COMPANY

234 SE 12th Portland, OR 97214

Wholesale inquiries only
503 281-3941
1-800-735-8793
Fax 800-577-5712

"Call Us Anyway."



AMERICAN HOMEBREWERS ASSOCIATION® MEMBERSHIP APPLICATION FORM



**I would like to become a member
of the American Homebrewers Association
and receive more than a subscription to *Zymurgy*®.**

All prices effective March 1, 1996, through March 1, 1998.

AHA SPONSORSHIP

*The strength
of the American
Homebrewers Association is YOU. We need
your support to make
this your association.
Your donations are
tax deductible.*

- ☐ **\$51 Paper Cup Sponsorship** — One-year membership to the AHA and honorary certificate. (\$18 is tax deductible.)
- ☐ **\$103 Pewter Mug Sponsorship** — Two-year membership to the AHA and honorary certificate. (\$43 is tax deductible.)
- ☐ **\$230 Golden Mug Sponsorship** — Five-year membership to the AHA and honorary certificate. (\$90 is tax deductible.)
- ☐ **\$460 Diamond-Studded Platinum Mug Sponsorship** — Distinguished recognition and lifetime membership to the AHA, T-shirt (indicate size) and honorary certificate. (\$212.50 is tax deductible.)

As a sponsoring member you will receive a sponsor's certificate and have your name, club or business listed in five issues of *Zymurgy* as an active supporter of the American Homebrewers Association. Membership includes a subscription to *Zymurgy*.

MEMBERSHIP IN AHA

Total Enclosed (U.S. funds only)
Full money-back guarantee! Prices are subject to change.

\$

Name

Address

City State/Province

Zip/Postal Code Country

Payment: Check ☐ Visa ☐ MC ☐

Credit Card No. - - Exp. Date

Signature Daytime Phone ()

E-mail

- ☐ Enclosed is \$33 U.S. for a one-year membership to the AHA. Five issues of *Zymurgy* and membership privileges are included.
- ☐ One-year Canadian membership: \$38 U.S.
- ☐ One-year international membership: \$51 U.S.
- ☐ Enclosed is \$60 U.S. for a two-year membership to the AHA. Ten issues of *Zymurgy* and membership privileges are included.
- ☐ Two-year Canadian membership: \$70 U.S.
- ☐ Two-year international membership: \$96 U.S.
- ☐ Check here if this is a renewal.

Mail this form and your check to the American Homebrewers Association, PO Box 1510, Boulder, CO 80306-1510, U.S.A.
Phone (303) 546-6514, FAX (303) 447-2825 or Internet orders@aob.org with credit card information.

A GIFT FOR A FRIEND

☐ **Yes, send a gift membership to my friend and a personalized gift card from me — I'll pay (above).**

Name

Address

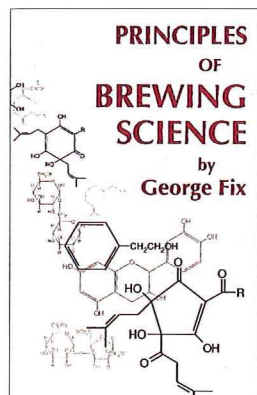
City State/Province

Zip/Postal Code Country

Daytime Phone ()

Introduce a friend to the many benefits that the American Homebrewers Association provides its members with a gift membership, which includes a one-year subscription to *Zymurgy*, for only \$33!

EXPAND YOUR BREWING LIBRARY

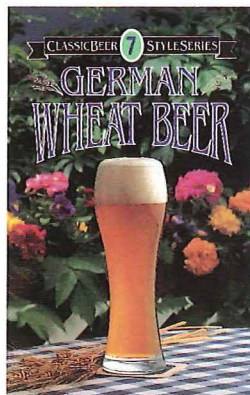


Principles of Brewing Science
By George Fix

For those ready to graduate their beer to the next level, this is the textbook. Dr. George Fix explains the fundamental chemistry and biochemistry of brewing world-class beers. A Harvard graduate and professor in the department of mathematics at the University of Texas, Arlington, Fix is a longtime home brewer whose beers have earned him numerous awards. Internationally recognized as an expert on technical brewing, Dr. Fix is the author of several books, including *Oktoberfest*, *Vienna*, *Märzen* (Brewers Publications, 1992), which he co-authored with Laurie Fix.

5½ x 8½ • 250 pp. • two-color soft cover • illustrations • Brewers Publications • 1989 • ISBN 0-937381-17-9

\$29.95 plus shipping #463

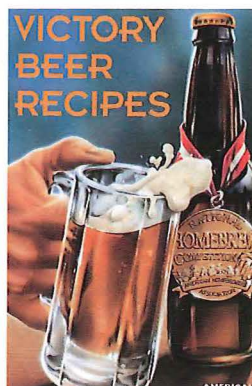


German Wheat Beer
By Eric Warner

A graduate of the prestigious Weihenstephan school of brewing in Germany and brewmaster at Colorado's Tabernash Brewing Co., Eric Warner has earned national recognition for his German wheat beers. His German-style weizen placed first in the wheat beer category at the 1992 AHA National Homebrew Competition, and his Tabernash Weiss won the gold medal in the German wheat beer category at the 1994 Great American Beer Festival®. In *German Wheat Beer*, Warner shares the knowledge he has acquired through years of study and practical experience.

5½ x 8½ • 161 pp. • four-color soft cover • b&w photos • Brewers Publications • 1992 • ISBN 0-937381-34-9

\$11.95 plus shipping #407

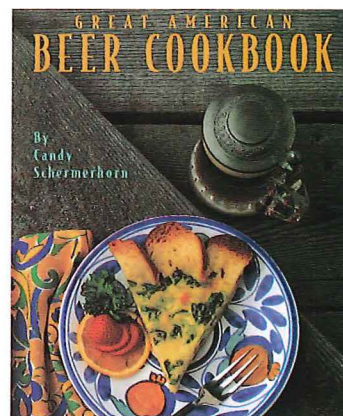


Victory Beer Recipes
America's Best Homebrew

From the creators of the homebrewer's hit *Winners Circle* (Brewers Publications, 1989) comes *Victory Beer Recipes*. Brew and enjoy 128 new award-winning recipes from the AHA National Homebrew Competition, 1989 to 1993. From the lively flavor of "A Peek Under the Kill" Scotch ale to the dark sensuous bite of "Lady of the Morning" continental dark bock, these recipes will thrill your taste buds and tune your brewing skills.

5½ x 8½ • 228 pp. • four-color soft cover • b&w photos • Brewers Publications • 1994 • ISBN 0-937381-41-1

\$11.95 (\$10.15 for AHA members) plus shipping #467



Great American Beer Cookbook
By Candy Schermerhorn

From Brewers Publications comes a cookbook like no other! All recipes use beer to enhance flavor potential, giving food an added culinary dimension. The *Great American Beer Cookbook* features mouth-watering recipes that are chic (Lobster and Brie Soup with weissbier), exotic (Apple and Ham Pie with Curry Sauce using India pale ale), down-home (Potent Portered Beer Ribs) and sinful (Chocolate Stout Cake) – 217 recipes in all! Foreword is written by Michael Jackson.

7 x 10 • 291 pp. • four-color soft cover • color photos • Brewers Publications • 1993 • ISBN 0-937381-38-1

\$24.95 plus shipping #466

EXPAND YOUR BREWING LIBRARY ORDER FORM

Item	Quantity	Price	Total
<i>Principles of Brewing Science</i> #463	_____ X	\$29.95=	_____
<i>German Wheat Beer</i> #407	_____ X	\$11.95=	_____
<i>Great American Beer Cookbook</i> #466	_____ X	\$24.95=	_____
<i>Victory Beer Recipes</i> #467	_____ X	\$11.95=	_____
AHA member #467M	_____ X	\$10.15=	_____

(For domestic P&H, add \$4 for the first book and \$1 for each additional book. Orders cannot be delivered without proper postage.)

Shipping Total = _____

TOTAL = _____

Name _____

Address _____

City _____ State/Province _____

Zip/Postal Code _____ Country _____

Payment: Check _____ Visa _____ MC _____

Credit Card No. _____ - _____ - _____ Exp. Date _____

Signature _____ Daytime Phone (_____) _____

E-mail _____

It's Here...

The canadian BREW-ON-PREMISES
concept has arrived in the U.S.

If you're interested in setting up a "B O P" in your area—

CALL THE EXPERTS!

Malt Products Corp., with its Canadian partner,
is the largest supplier of malt extract to BOP's
and has been since the beginning. We have
the industry experience to provide you with the
custom blends that work!

Use us to get a head start—

Our legal staff has done extensive research at both the
federal and state levels on the legality of the BOP concept—
currently, 30 states have approved BOP's.

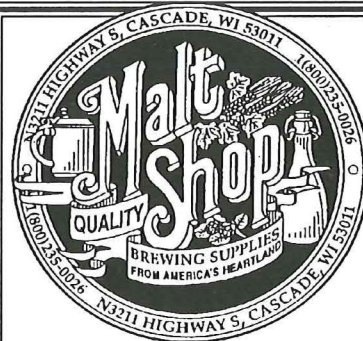
Information at your fingertips,
saving you months of legwork.



**MALT
PRODUCTS**

CORPORATION

88 Market Street
Saddle Brook, NJ 07663
(800) 526-0180 Phone
(201) 845-0028 Fax
Joe Hickenbottom
VP Sales & Marketing



*Quality Brewing
Supplies from
America's Heartland*

Call for Free Catalog !

The Malt Shop

*N3211 Highway S,
Cascade, WI 53011*

*MaltShop@excel.net
http://www.excel.net/business/
maltshop/maltshop.htm
414-528-8697
1(800)235-0026*



AN IDEA WHOSE TIME HAS COME . . .

"If it ain't broke
don't fix it."

AGAIN.

- Take pride in your homebrew by bottling in the traditional style using a 16-oz amber bottle and the **E.Z. cap**.
- You will love this simple, attached and resealable cap
- **E.Z. cap** is a top-quality North American product distributed near you. Call for more information.



**MANUFACTURER
& DISTRIBUTOR**
Calgary, Alberta
Canada
Phone/Fax (403) 282-5972

EAST COAST DISTRIBUTORS

L.D. Carlson Co.
463 Portage Blvd.
Kent, OH 44240
216-678-7733 or 1-800-321-0315

WEST COAST DISTRIBUTORS

F.H. Steinbart Co.
234 S.E. 12th
Portland, OR 97214
(503) 232-8793 or 1-800-735-8793

Now Buy Liter & 1/2 Liter Reusable Bottles



**Small or Large
Quantities
Shipped
Anywhere.**

These
imported
bottles with
ceramic
flip-top closure
are now available
for home
or business need.

Minimum Order:

12 Liter Bottles \$30.00*
12 1/2 Liter Bottles \$21.00*
Volume Discounts Available.

Bavaria South Inc.

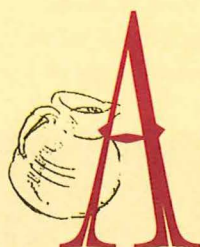
P.O.Box 1633 • Manteo, NC 27954

800-896-5403

Credit Cards Accepted • *Plus Shipping



A Peek into PORTER'S Past



BY KEITH THOMAS

Although rare, it is not impossible to find people in Britain who remember drinking porter in the days when it was served as a regular beer, rather than a specialty. These drinkers recall the complexity and variety of this beer as it struggled to the end of a 200-year presence in pubs across the country.

John Harrison, writing in *An Introduction to Old British Beers and How to Make Them* (Durden Park Beer Circle, 1976), recalls some notable examples, but still more await discovery. One drinker's memory is particularly interesting because it spans the changes that led to porter's eventual demise. In 1913, Edward Poutard collected porter for his mother from a local pub in Peckham, London. Carrying a quart stone jug the 16-year-old Poutard often chanced sipping the dark beer on his way home, enjoying the sweetness and slightly bitter finish it provided. "Sweet, bitter and a bit burnt all at once. Very warming," he recalled.

Because we are unable to sample traditional porters extensively, these snatched flavor descriptions give us some clues to the character of porter in Edwardian times (circa 1900 to 1912): probably a strong beer by today's British standards, with notable body and a balance of sweet, bitter and roast character. Relying on an isolated report is, of course, hazardous, particularly one of a 16-year-old who may have been unaccustomed to beer. However, these and similar observations confirm our current impression of the style. Moreover, for Edwardian porter, they do seem to exclude sourness as an intentional characteristic, which may indicate that when of good qual-

ity, porter was a sound beer with its own intended flavors and character rather than being a consequence of aging and staling.

Equally interesting are Poutard's comments on the character of porter after the first world war. By this time he had plenty of time to contemplate the distinction because, despite surviving malaria in Salonica and the trenches in Flanders, he was gassed just one day before the armistice. Out of a detachment of 12 camping in a temporary billet, only one other survived. Poutard spent the next six months convalescing in England. Because of burns to his mouth and throat only liquid foods were allowed, soup and beer, particularly porter.

By this time porter was different, with a harsher, more roasted flavor and was weaker overall. Of course, by then many beers were a shadow of their former selves. Poutard also tasted Irish porter during the war and noted its creamy character. The difference with the harsher, more roasted Guinness stout was even more striking. So much so that in the absence of porter a common practice was to add a glass of port wine to stout. With all the controversy over the origin of porter, here is yet another derivative of the name.

Of course, it is likely that porter varied greatly from time to time and from brewery to brewery. A few eyewitness accounts do not confirm a style. Brewery records, however, particularly grist compositions, can be more instructive and in very broad terms chart the changes of porter through the two centuries of its existence.

Harrison, renowned for his contributions to historical brewing via the Durden Park Beer Circle, suggests two main phases of porter brew-



Porter's place in brewing history is clearly documented by a 15-foot-high sign on the eastern wall of the Old Blue Last, on Great Eastern Street, Shoreditch, London.

ing according to the malts then available. An initial phase when porter was based on pale and brown malts and then a sudden change in the early 19th century when darker malts appeared. During the life of porter, seismic changes occurred in the British brewing industry that influenced porter's character, eventually leading to its demise. These events range from the use of roasting drums to the introduction of saccharometers. The importance of commercial developments such as the growth of Burton breweries and the demise of cottage brewing should not be ignored. These developments parallel the growing urbanization and industrialization of the workforce.

Porter is said to have been the lager of the Victorian age, between 1830 and 1900, but unlike the lager we know today it had a highly variable character, possibly acting as more of a broad base to allow changing ingredients to make their impact.

The origin of porter has attracted controversy and speculation. However, unlike many historical debates, porter's place in brewing history is clearly documented by a 15-foot-high sign on the eastern wall of the Old Blue Last, in Great Eastern Street, Shoreditch, London.

Legend says porter originated as a time-saving solution to mixing "threads" of beers at the bar variously described as ale, beer and a superior brew called twopenny. As any bartender quickly learns, rapid serving makes for satisfied customers. Eighteenth century pubs were no doubt as busy as pubs today and demands for a mixed pint would have run the staff ragged on a busy night with no hand pumps or gas systems to speed delivery.

At this point in 1722, a local brewer named Ralph Harwood devised the solution. He brewed a single beer that combined the features of the three styles. Initially called "entire,"

this beer is believed to have had the combined character of several different ales. As such it would have used both pale and brown malt and been dark brown rather than the black of porters identified with the Victorian era.

What evidence exists for this version of porter's birth story? Mixing beers at the bar is, of course, a rather suspicious practice today not only because of the fear of adulterating a beer with something beyond its best, but also because of ending up short-changed. Not that the practice isn't present. British drinkers with memories of 1950 and 1960 beer quality often are found mixing halves of cask ale with a bottled beer, Green King IPA and the stronger Suffolk Ale, for example.

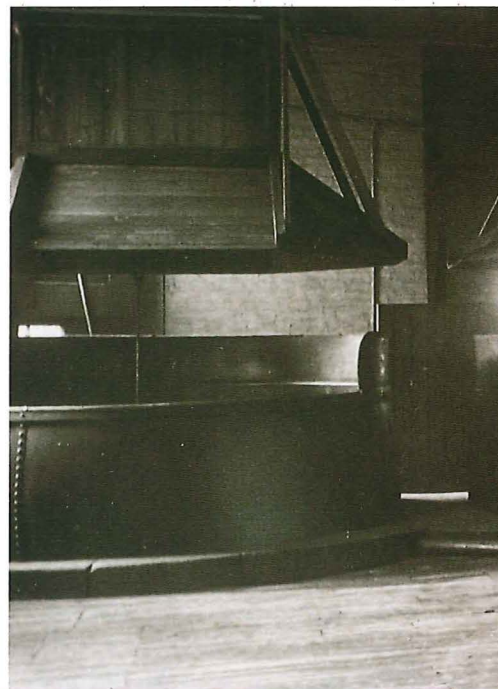
Such combinations may relate more to providing a modicum of carbonation to an otherwise flat pint rather than a subtle appreciation of flavor balance. Occasionally, however, establishments may have a policy of mixing beers almost to a cocktail formula. One of the most famous is Simpson's in London's Strand where Fuller's London Pride, Young's Special, Young's Export and Guinness are mixed in various combinations. For example, draft Young's Special and Young's bottled Export are mixed in equal amounts to produce a "Harley Street." If this isn't enough to send you reeling, try a "Duke Street" made from equal parts of Young's Special and Young's barley wine.

The tradition of Simpson's may be a relatively recent innovation, but such serving practices could be deeply embedded in the British drinker's psyche. Who knows what combinations were popular in 1700 or whether a combined beer would have been acceptable? In fact, it can be argued that by reducing choice and flexibility porter's initial popularity with drinkers rather than publicans may have been limited.

This was certainly true for some rural areas where porter took 50 or more years to be accepted. In London, however, porter captured beer drinkers' imaginations like wildfire. Indeed, within five years porter accounted for more than 95 percent of the beer brewed in London, according to Harrison. That's the sort of market penetration a modern company would wage war to emulate.

In *History of British Brewing*, (David and Charles, 1975) an alternative suggestion for porter's prominence is proposed, citing a conscious market push by London brewers anxious to exclude the pale ales emerging from Burton-on-Trent. Aware that London's water was unsuitable for such beers, an alternative product using darker malts would have been a welcome addition to their portfolio. However, Thom Thomlinson reports Burton brewers didn't start making pale ales until the 1800s; they made brown ales in the 1700s. Also, pale ale was too expensive for the masses during the 1700s because of the tax on coke needed to make pale malt.

Brewers had other good reasons to promote porter, one being the brown malt used was made from less expensive, second-grade barley. In addition, this darker beer could af-



Views of open coppers with hoods where porter was brewed at William Younger's brewery in Edinburgh.

ford the use of lower quality hops because the roast character, in addition to the aged, sour flavor profile achieved from lengthy maturation, were the more dominant flavors.

Early porter appears to have been produced from mostly brown malt or a mixture of brown and pale malt. It typically involved a mixture of three mashes of the same grist. The wort from each of these may have been boiled separately to allow for later mixing into two, or sometimes three, grades of porter, usually a "superior" porter and a "jug" porter. Mash thicknesses were relatively high, leading to a high original gravity of around 1.065, while long boils and deep coppers encouraged a caramelization to add to the full mouthfeel.

The flavors resulting from this mash schedule are likely to have been more complex than contemporary beers with some of the characteristics of today's brown ale, pale ale and old ale. Leaving aside the influences of spoilage, a moderate alcohol of 7 to 8 percent by volume would be likely along with a malty sweetness and a solid body balanced by a moderate-to-strong bitterness. A detailed account of these features is given by Terry Foster in *Porter* (Brewers Publications, 1992), who emphasizes the importance of brown malt.



This 1792 view of Whitbread's Brewhouse Yard is typical of an 18th-century porter brewery scene.

Recipes of such porters researched by Harrison confirm that high proportions of brown malt were typical. This brown malt would have contributed to the color of the beer and would have provided some astringency. Produced by manually turning a thin layer of malt on a kiln floor over fiercely burning wood, this malt was distinctively brown in color rather than black or charred.

The high heat produces an evident but not excessive astringency leading to a pleasing and full malt character as well as a dry aftertaste. Despite its heating, brown malt retained a significant proportion of sugars, up to 85 percent by some accounts, and most likely retained adequate enzymes for starch conversions.

Poorer extracts were obtained from more dubious brown malt produced by reheating pale malt for a longer period. Such malting cracks the grains, resulting in an expanded or "blown" character and a weight loss of up to 25 percent. Because malt was sold by volume rather than by weight, an inferior beer would have resulted from brewing with blown malts. Again, the varieties of porter available to the drinker would have been extended by ingredient quality as well as the recipe.

Recipes for early porters indicate that mashing temperatures were above 149 degrees F (65 degrees C) with liquor-to-grist ratios around 2-to-1. As a result, the body of porter would have been fairly robust with significant unfermentable sugars. Porter character is likely to have been full-flavored with a lasting dryness despite an initial sweet character. Bitterness from the hop charges would have complicated the flavor spectrum, giving a powerful impression to the palate.

Unfortunately, no records exist of Harwood's formulation so we are not sure just how this new beer related to those it replaced. Suggestions that porter was quickly adapted by London brewers looking for a product with mass appeal to counter Burton-on-Trent pale

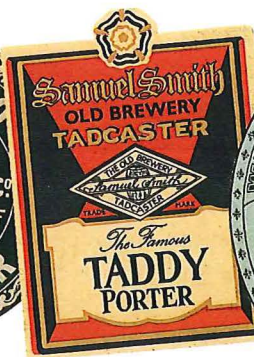
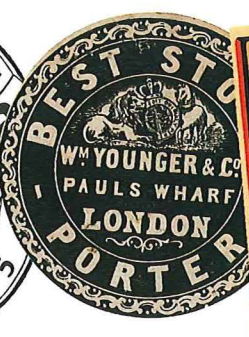
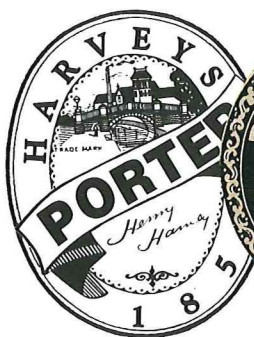


ales seem unlikely. It is possible that an enhancement of flavor was promoted to develop distinction from existing beers. As a result, early porters may not have emulated the three threads but may have been distinct from them.

It is also interesting to speculate that a strongly flavored beer could have been popular because of its contrast to the typically bland diet of the working population in 1700. Porters are likely to have distinctive flavors, particularly astringency or roasty bitter character, compared to other beers and foods. Porters were commonly drunk by the working population, which existed on a limited diet, typically cereals and starchy vegetables. Bitter and astringent flavors were rarely encountered. Coffee and spices would have been expensive, and the opportunity to enliven a diet with a drink that stimulated the mouth for some time after consuming could have been popular on sensory grounds alone.

Whatever their attraction, the people working as local market porters are reputed to have taken enthusiastically to the beer and given it the distinctive name, according to J. Bickerdyke in *Curiosities of Ale and Beer*. Such reports are apocryphal and impossible to verify, although a note by a French visitor in 1730 names porter as being a preferred drink to water.

Alternative opinions on the origin of porter's name suggested by Ted Brunning in "Is This the Origin of Porter?" (Brewer's Guardian, 1995) include derivation because



the beer was delivered to households by porters and its widening distribution, i.e., by being transported. The first of these may be an extension of the initial assertion that porter was popular with porters. The latter would require the beer to have shown extensive sales before gaining its name. Evidence for this is limited, although porter is known to have been widely sold beyond London. Perhaps the brewers welcomed the initial ascription and encouraged its use. No 18th-century marketing meetings are known to have recorded their intention to "launch a beer under the banner of porter," but then who knows what archives remain to be uncovered?

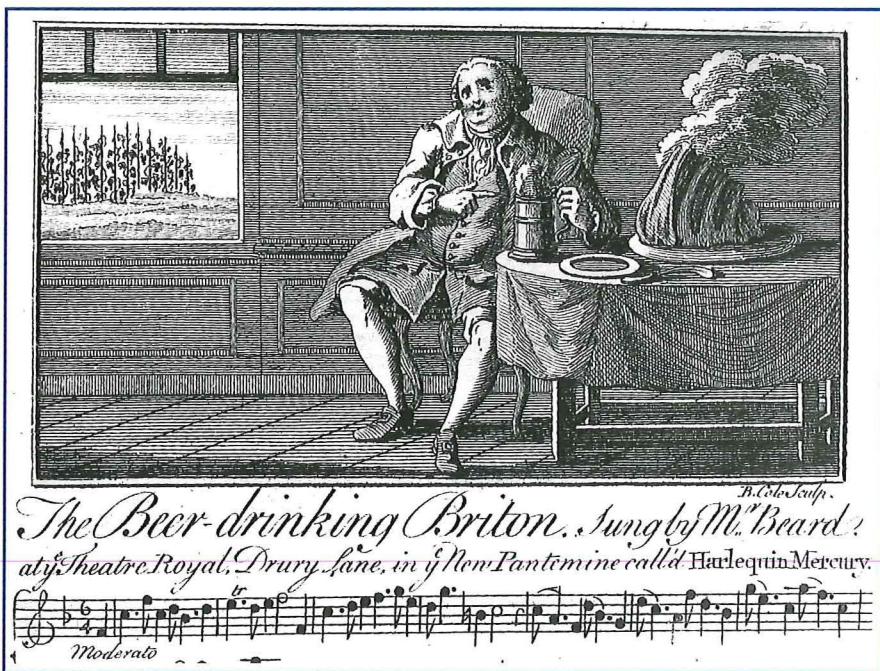
Quite possibly the name porter arose from a mixture of these: The result of a chance encounter between a retail innovation and the ambitions of the London brewers, many of whom were happy to expand famously on their involvement. Regardless of its christening, porter undoubtedly grew in popularity during the 18th century not only in Lon-

don but in Bristol, Sheffield and Edinburgh, Scotland; and most importantly, in Ireland, where it never really died until 1972. During its heyday at the turn of the 19th century porter sales were 15 times greater in volume than all other ales in London.

Some recipe alterations were to follow the introduction of the saccharometer and pale malts being included in the grist. However, more fundamental changes were to appear. By 1820, porter recipes had altered significantly following the introduction of the cylindrical drum roaster patented by Daniel Wheeler in 1817 that allowed darker malts to be made by roasting under more controlled conditions, thus avoiding charring. Black malt and roasted barley were now possible. Moreover, they offered a cheaper alternative to coloring beer than brown malt and were immediately popular with brewers.

Even before this time color had been recognized as important to the porter brewer and all manner of additions had been used to give a more distinctive appearance and flavor. Records from this time, including S. Child's *Every Man His Own Brewer*, list treacle, Spanish liquorice and burnt sugar as coloring agents as well as all manner of innocuous and toxic ingredients for flavor. In one instance, extract of the herb *Nux vomica* is quoted as one occasional ingredient with deleterious effect. With less than one gram being needed to kill a medium-sized dog, hangovers were assured. *Cocculus indicus* and *Capsicum* also are listed with the former providing excruciating headaches and sickness.

The introduction of dark malts by the 1820s were of great value to the porter brewer. Pale malts had always offered cost advantages over



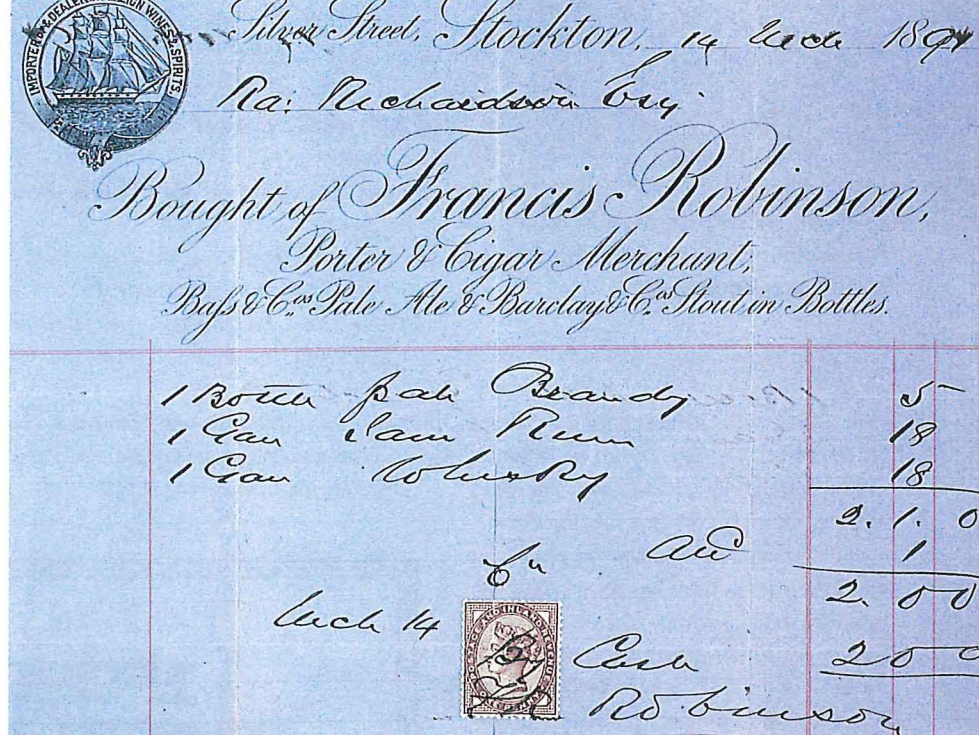
"The Beer-drinking Briton. Sung by Mr. Beard at the Theatre Royal Drury Lane in the New Pantemine Call'd Harlequin Mercury."



Porter labels from the late 1800s and early 1900s.

brown malt. With black malt only needing to contribute a small percentage to the grist, porter could be more efficiently produced with black than with brown malt. Brewers were quick to make the change and the color of porter darkened significantly. This did not pass without complaint, however. William Black, writing as late as 1875 in *A Practical Treatise on Brewing*, notes that "porter of a brilliant color, as formerly, is seldom now to be seen and the common porter ... is often so muddy as to be unpleasant to the eye." Porter's initial less-than-opaque color was confirmed by re-creations using original recipes and by the analysis of a sample recovered from an 1825 shipwreck in the English Channel. It appears that the color of porter was fairly consistent during its first 100 years. Although it is possible that this sample suffered some chemical deterioration, protection was afforded by the black bottle and the depth of the wreck. From the analysis, measured values of color were 44 EBC units or 22 SRM, which is still rather brown.

In contrast, Victorian porter enhanced its distinction with Burton pale ales through the use of roasted malts that inevitably altered its character. Brown malt imparts a different roasted character than the more intensely blackened roast malts. Moreover, higher hopping rates were used, leading to a more pungently flavored beer and one that began a long-term evolution into mild ales and stouts. Indeed, the very variability of porter brewing, particularly using two or three mashes from one charge of malt, allowed a variety of porter qualities to be produced. Such variability extended the varieties available to the drinker, particularly with the designation of "extra stout porter" for the stronger varieties. It is interesting to surmise that stouts and milds developed from high- and low-gravity porters, respectively.



A bill of sale from a 17th century porter and cigar merchant.

Sadly, this evolution spelled decline for porter itself. World War I restrictions on fuel limited malt kilning and by 1920 paler beers had consolidated their position. Guinness became dominant in Ireland and the popularity of other beers, including lagers, led to porter's eventual death in 1972.

Today boasts a very different story both in Britain and North America. Not only are porters almost obligatory in any brewery portfolio, but many are of an exemplary standard. In criticism, however, most in the U.K. are based on Victorian recipes appearing as dark versions and often of lower gravity than desirable for this, or at least the initial, style. Without brown malt, the earliest versions are very difficult to emulate.

A survey of some contemporary British porters illustrates some of these features as summarized in Figure 1.

Although limited, this survey indicates that contemporary British porters are Victorian-based with a moderately dark color. Their original grav-

ities are low, reflecting concerns about pricing, while final gravities are moderate to low compared to expectations of the original recipes.

Only limited differences are evident between the two groups of breweries surveyed, with the microbreweries showing lighter colors and lower final gravities. One possibility for the difference is that regional breweries are likely to be using archive recipes for their porters while microbreweries may rely more on published recipes and treat the beers to similar processing as standard biters. Comment and publicity from regional breweries often stress the authenticity of their porters and how they are based on past brews. Microbreweries, with much less heritage, have a more limited wealth of experience and have typically only encountered porters from homebrewing.

Harvey's Porter from Sussex is one example of a historic porter brewed to an original recipe. Taken from a 1859 brewing book, this porter entertains a blend of 75 percent

Figure 1. Analyzed values of British porters sampled in 1994-5.

	NO. BRANDS	COLOR EBC	RANGE	BITTERNESS EBC	RANGE	OG	RANGE	FG	RANGE
REGIONAL BREWERIES	6	157	97-249	36	30-40	1.047	1.040-1.052	1.013	0.101-1.016
MICROBREWERIES	7	144	97-201	37	20-52	1.046	1.042-1.055	1.008	1.007-1.010

REGIONAL BREWERIES: Established for at least 50 years, annual production of 500 to 10,000 barrels and a tied estate predominantly in the area.

MICROBREWERIES: Established less than 20 years, annual production of less than 1,000 barrels and a limited or variable tied estate.



Two McEwan's brewers in Edinburgh tend steaming coppers.

pale malt, 18 percent crystal and 6 percent black. Using a relatively thick mash, a final gravity of 1.014 is achieved from a starting gravity of 1.051. Other examples of similar productions are King and Barnes, Shepherd Neame, Samuel Smith and Arkell porters.

Such beers may well have the roast malt characteristics of Victorian porters, but with a typical original gravity of 1.047, contemporary British porters are sadly deficient in the alcohol and body so important to balance bitterness and astringency. As such, an impression of a watered-down stout may be evident, having little of the lusciousness with which London porters were associated in their heyday. Moreover, Britain has yet to see the commercial production of a traditional 18th-century porter, unlike North America where homebrew and commercial competitions now recognize this style as distinct.

Does North America now lead the way in producing porters of the original character? America's less onerous taxation regime makes this a possibility. Edward Poutard died recently, but in 1990 he sampled some homebrewed porters, pronouncing them true to type and worth carrying home in a jug. Given a time machine many of us would set the dial to that day in autumn 1722 when Harwood's brew first rolled into the cellar. Lacking this opportunity to taste the true original, we can but continue our sample brews in the hope of reproducing the perfect porter.

References

- Bickerdyke, John. *Curiosities of Ale and Beer*, 1886.
- Black, W. *A Practical Treatise on Brewing*, Longmans, Green and Co., 1875.
- Brewlab, Porter Workshop, 1988.
- Brunning, Ted. "Is This the Origin of Porter?" *Brewer's Guardian*, June 1995, p 24.
- CAMRA, Beer Style Assessment — Brewery Size Comparison, Campaign for Real Ale Technical Report 95-27, 1995.

Child, Samuel. *Every Man His Own Brewer*, 1800.

Corran, H.S. *History of British Brewing*, David and Charles, 1975.

Foster, T. *Porter*. Classic Beer Style Series. No. 5., Brewers Publications, 1992.

Harrison, John. *An Introduction to Old British Beers and How to Make Them*, Durden Park Beer Circle, 1976.

Thomlinson, Thom. "IPA and Empire — Necessity and Enterprise Give Birth to a Style," *BrewingTechniques*, March/April, 1994.

Keith Thomas began homebrewing as a teen in the days when malt was used as a vitamin supplement for children. He worked on a doctoral project converting paper waste to fuel alcohol, and from there moved to more conventional brewing. He runs Brewlab at the University of Sunderland in England, providing training and analytical services to brewers. In addition to coordinating brewing research, he lectures on fermentation studies. He enjoys new age homebrews in Britain and abroad.

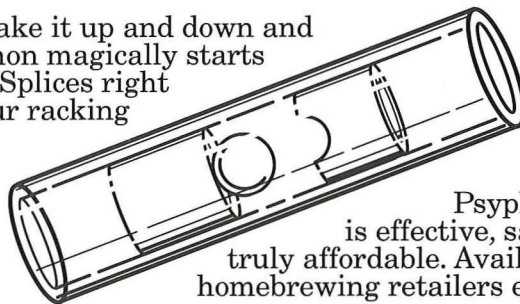
©1996 Keith Thomas



I N T R O D U C I N G

PHIL'S PSYPHON STARTER

Just shake it up and down and the siphon magically starts to flow. Splices right into your racking cane.



Phil's Psyphon Starter is effective, sanitary and truly affordable. Available at fine homebrewing retailers everywhere.

Listermann Manufacturing produces products for serious and advanced homebrewers, including:

The Philmill — The best mill on the market for the price. Adjustable, high-quality crush, easy to motorize. Stable in use.

Phil's Lauter Tun — Inexpensive, efficient all-grain brewing made easy. Mini Lauter/Hop Back also available.

Phil's Sparger & Phalse Bottom — Make your own Phil's Lauter Tun with these components. Three sizes available.

Phil's Philler — Total control over fill speed and fill level. Less oxidation means fresher-tasting beer.

Philchill Phittings — Custom-built fittings for a counterflow wort chiller. You supply hose & copper tube. Easy, no soldering!

Check with your local homebrew shop. Dealer inquiries welcome.

LISTERMANN

MANUFACTURING CO.

1621 Dana Avenue • PO Box 12251 • Cincinnati, Ohio 45212-0251 • 513-731-1130 • Fax 731-3938

Distributed in Canada by D. Repol Enterprises, Inc. • 905/666-2307

**COMPLETE LINE OF HOME BREWING
SUPPLIES & EQUIPMENT**

**COUNTER-
PRESSURE
BOTTLE FILLER**

- Total touch control.
- Gas beverage AND purge valve.
- Complete with all hoses and fittings.
- Simply attach to your regulator.
- Flushes out oxygen and fills without foaming.
- You have total control over carbonation.
- You can have this up and running in less than a minute!

\$78⁹⁷

  **Heartland Hydroponics**  
**For All Of Your
Brewing and Growing Needs**

Heartland Hydroponics

Vernon Plaza, 115 Townline Road
Vernon Hills, IL 60061
(3.5 Miles West of I-94 on Route 60)
Phone 800-354-4769

ALWAYS
THE LOWEST PRICES IN CHICAGOLAND!
CHECK US OUT BEFORE YOU BUY!



East Coast Brewing Supply

P.O. Box 060904
Staten Island, NY 10306

The Experienced and Knowledgeable Supplier in the New York tri-state area.

Broadest grain malt, malt extract, hop & yeast inventory.
Unique selection of equipment for the serious home brewer!

P.B.S. [Precision Brewing Systems]*

Stainless Brew Kettles; 10, 15, 20, 25 gals.

with: drain, thermometer, sight glass, hop rack
Wort Chillers; Counterflow and Immersion types
Rota-Sparg, automatic rotating sparge system
Wort-Ox, Wort oxygenation system
E-Z Filter system; removes chill haze

CO-2 Keg Systems

Configured to your requirements

WE CARRY REPAIR AND REPLACEMENT PARTS

Commercial Equipment

Taps, faucets, cold plates, fittings

*Dealer inquiries invited

Ph. (718) 667-4459

Fax (718) 987-3942

The American Homebrewers Association®
1996 National Homebrewers Conference
parades into the land where good times are
a way of life, New Orleans, La., June 5
through 8, 1996.

For those brewers and enthusiasts also interested in the
business of homebrewing — relax, don't worry, the Big Easy
Homebrew Festival will have something for everyone. It's a
party made big, and homebrew business made easy with the
Cajun hospitality that made New Orleans famous.

For more information or to register, contact Nancy Johnson at the American
Homebrewers Association, PO Box 1679, Boulder, CO 80306-1679, USA;
(303) 447-0816, ext. 131; nancy@aob.org; or FAX (303) 447-2825.

Move over
Mardi Gras.
Here Comes
**Homebrew
Bayou!**

PERFECT YOUR

Porter probably is the most confusing beer style in the homebrewer's portfolio. The original London version certainly was the first definitive beer style, in that it was the first beer to be recognized by its drinkers as a definite type of beer, but we cannot be sure exactly what that was because we cannot taste the original. Commercial brewing of porter ceased entirely in London earlier this century. Keith Thomas has presented porter's dubious origins and pointed out that there were two different styles, the original and what he refers to as Victorian porter. In the last 15 years or so the style has been revived in the United States and England mainly by homebrewers, microbreweries and brewpubs, and some English regional brewers also have re-introduced porter.

One of England's largest modern breweries, Whitbread, started out as a London porter brewery in 1742. The company has seen fit to bring out a cask-conditioned draft porter in recent years that one might expect to be a definitive porter. Although the beer is based on one of their original recipes, it has been adjusted "to suit modern tastes," brewspeak for watered down. Further, the recipe they used is a 19th-century one, and in the Victorian rather than the original style.

The Association of Brewers addressed the confusion about the style's origins by distinguishing between two types of porter in its competition categories, "brown" and "robust." Some of the porters offered by the new brewers are idiosyncratic, to say the least, with at

By Terry Foster

PORTER

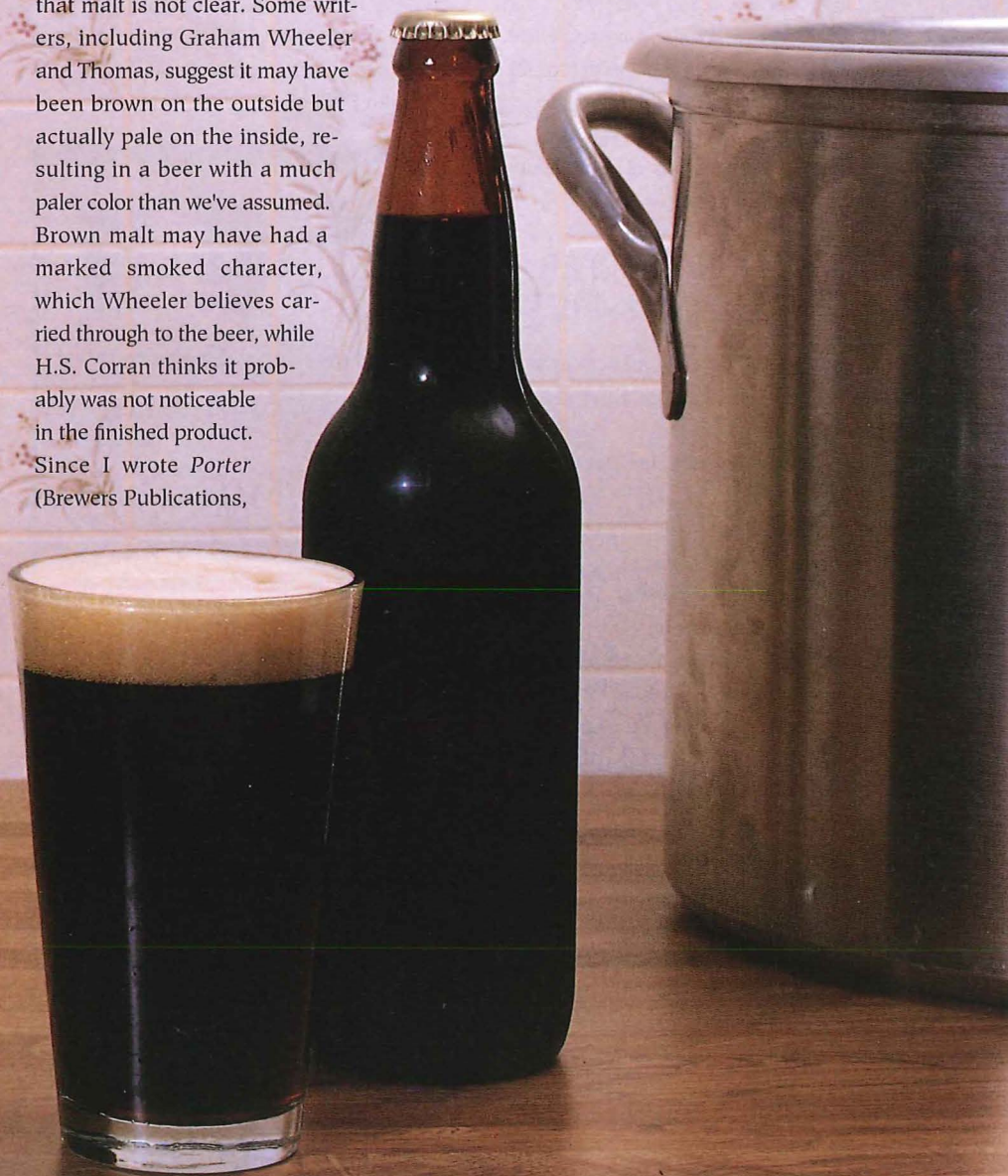
least one highly respected micro offering a porter that is clearly a stout. In addition, Yuenglings of Pennsylvania, in business since 1829, brews the one example of an American porter with a genuinely long pedigree but uses a bottom-fermenting yeast not authentic for the style. Sierra Nevada Porter is another widely available commercial example that Michael Jackson describes as firmly dry with a gentle toffee-coffee finish.

As Thomas points out, few of the new porters match the original, even in such basics as original gravity and alcohol content. In fact, the same could be said for modern versions of some other long-standing beer styles, notably pale ales and stouts. Drinkers in general, conscious of health and other issues, just do not want their beer to be as strong as it was in the 18th and 19th centuries.

Of course, it is impossible to match the original porter because we have never tasted it. Although recipes are available from the last century, nothing similar has been uncovered for porters of the 18th century. Some generalized accounts from the period give us a fairly broad grasp of the nature of the style, but brewers apparently kept a close guard on their recipes and did not commit them to paper.

Brewing techniques have changed and methods of storage and dispensing are different. Even more important, there have been great changes in raw materials, particularly malt and hops. Perhaps modern knowledge of hop chemistry can permit us to approximate the hop flavors of 18th-century

porters, but the same is certainly not true of malt. It is clear that the first porters were brewed from brown malt, but the nature of that malt is not clear. Some writers, including Graham Wheeler and Thomas, suggest it may have been brown on the outside but actually pale on the inside, resulting in a beer with a much paler color than we've assumed. Brown malt may have had a marked smoked character, which Wheeler believes carried through to the beer, while H.S. Corran thinks it probably was not noticeable in the finished product. Since I wrote *Porter* (Brewers Publications,



1992), English brown malt has become available in the United States but is no longer produced by the wood-fired methods used some 200 years ago, and cannot be regarded as a direct match for the original.

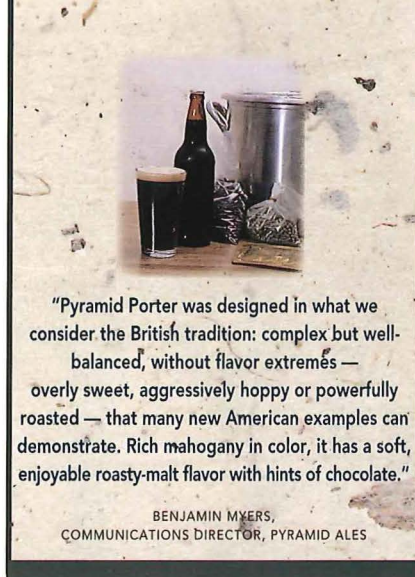
Nevertheless, there does seem to be some consensus about the modern styles of porter. Perhaps this is because stout, a derivative of porter, has continued to be brewed, and has developed into a style of its own, which limits porter at the top end of its flavor spectrum. Overall, porter should be a balanced beer with no outstanding single flavor characteristics. That does not mean it is in any way bland, or lacks complexity, or that individual flavor components cannot be detected by careful tasting. Rather, it means the complexities blend together well, complementing one another to give a smooth-drinking beer. Such a description certainly fits the brown porter designation. The robust variety, using black rather than chocolate malt, will have a more definite roast malt character, putting it closer to stout in style. In the early days of stout, brewers often called their beers "stout porter."

Following is a summary of what I would look for in a modern porter.

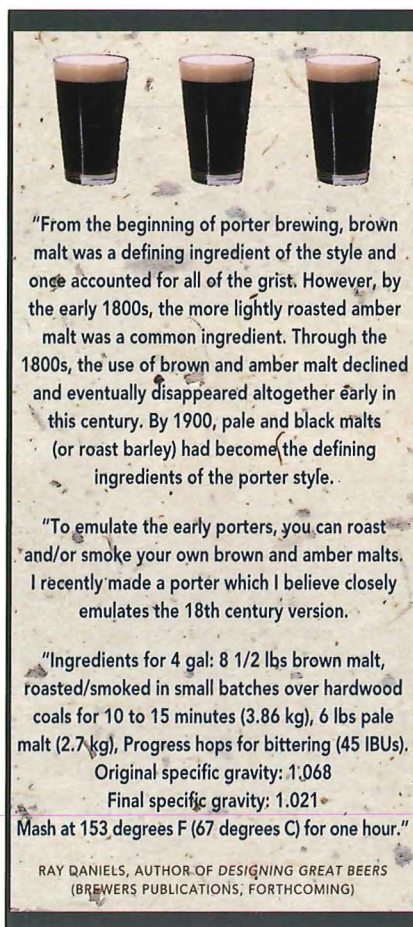
MODERN PORTER CHARACTERISTICS

- 🍺 Original gravity 1.045 to 1.060 (11 to 15 °P).
- 🍺 Finishing gravity 1.010 to 1.015 (2.5 to 3.8 °P).
- 🍺 Translucent ruby red color, not black or opaque.
- 🍺 Slight roasted malt flavor, can be more assertive in robust style.
- 🍺 Some nuttiness from crystal and/or brown or chocolate malt.
- 🍺 Moderate but definite hop bitterness. Full-bodied, an all-malt beer.
- 🍺 Fairly dry, but some residual sweetness from malt.
- 🍺 Some estery, fruity character — it must be top fermented.
- 🍺 Hop aromatic character not essential, but certainly not out of place. Choose the classic English hops or their American versions like Fuggles or Willamette.

These are the characteristics describing most modern commercial examples of



porter. Many brewers tend to use lower temperature single infusion mashes resulting in a beer lower in final gravity and lacking residual dextrins. I have come around to the opinion that this results in too low a finishing gravity, and that porters benefit from finishing a little higher, at 1.015 to 1.020 (3.8 to 5 °P). This extra sweetness gives the beer more depth and puts it a little closer to the original.



BREWING INGREDIENTS

The above characteristics mean porter is a style that lends itself nicely to brewing from either malt extract or all grain. There are porter kits and dark malt extracts on the market, but I prefer to use unhopped pale ale malt extract as the main source of fermentables and add roasted and crystal malts, as well as hops, for the color and main flavor notes. This approach simply offers the extract brewer better control over the end result. Some malt extracts can give somewhat low finishing gravities, so I generally add maltodextrin powder to my formulations. About one-half pound of maltodextrin in a five-gallon batch (225 g in 19 L) will ensure sufficient residual malt sweetness to round off the beer.

For all-grain brewing use pale malt (preferably English two-row) as the base, which is just what the London porter brewers did when roasted malts first became available in the 1820s. You should note that I have taken a yield of 1.032 for one pound of pale malt per U.S. gallon (454 g per 3.8 L) in the all-grain recipes that follow. This is not the highest you can expect to achieve, and the yield you get may be lower or higher depending on your brewing setup. You may want to adjust the amount of pale malt given according to your own homebrewery performance to obtain the target gravities noted.

Crystal malts were not part of the grist for the early versions of porter, but are well-suited to the balanced complexity of the modern style. They are available to the homebrewer in a variety of colors, with the darker ones reflecting a higher level of caramelization. For that reason, and because of the reddish tinge they give to the beer, the darkest colored crystal malts are generally preferred. An interesting range of Belgian crystal malts is now on the market. I have experimented only with biscuit malt in porter brewing and found it to be excellent. As the name implies, biscuit malt adds a nutty-biscuity flavor nicely complementing the roasted malt.

The main malt flavorings come from brown, chocolate and black malts. Brown malt is the least heavily roasted and is not the same as the brown malt originally used to produce porter. Therefore, if you were to brew only from brown malt, the flavor would be quite over-

BREWING METHODS

No special techniques are required for the malt extract recipes. Roasted and crystal grains should be crushed, and for a five-gallon (19-L) batch mixed with 1 to 2 quarts (1 to 2 L) of cold water then brought to a boil, stirring occasionally. Do not actually boil the grain because you may extract some harsh flavors from the husk that will unbalance the beer. Strain off the liquid, add remaining water, dissolve the extract in the solution, add maltodextrin if required, and boil as indicated in the recipe.

For the all-grain recipes, crush all pale and roasted grains and mash with one quart of water per pound of malt (1 L of water per 454 g malt). Simple infusion mashing is all that is required, but you should aim for 90 minutes at relatively high temperatures, preferably 153 to 155 degrees F (67 to 68 degrees C) to ensure a high dextrin level in the wort. Sparge with 170- to 180-degree-F (77- to 82-degree-C) water and collect about 5 1/2 gallons (21 L), then boil. I do not have space here to address the complexities of water treatment, but the brewing liquor should have both permanent and temporary hardness. A soft water would require about one teaspoon (5 g) each of gypsum and precipitated chalk.

Boil the wort vigorously for a full 1 1/2 hours, adding the bittering hops 10 to 15 minutes after the start of the boil. Add Irish moss about 20 minutes before the end of the boil to ensure a good break. Turn off the heat and stir in any aroma

hops. Use a wort chiller to cool the wort to fermentation temperature as rapidly as possible. If you are using a malt extract and can boil only part of the wort, cooling can be done by making up the required volume with cold water. However, for best hop utilization I recommend the total volume of liquid be boiled.

Fermentation should be carried out at 60 to 70 degrees F (16 to 21 degrees C) and no higher than 75 degrees F (24 degrees C). Primary fermentation, preferably in glass, should last five to seven days. The beer should then be racked into the secondary fermenter and held there for another seven days at temperatures similar to primary fermentation temperatures.

At the end of secondary fermentation the beer can be primed and bottled or kegged. The stronger versions will benefit from storing in a stainless-steel keg for one to two months before kegging or bottling. You can use standard levels of priming (four to six ounces or 113 to 170 g of corn sugar for five gallons or 19 L) to achieve the desired level of carbonation. I prefer lower carbonation rates which result in a smoother, more satisfying porter flavor, so I prime with only two to three ounces (55 to 85 g) of corn sugar per five gallons (19 L). When force carbonating in the keg apply 10 psi of carbon dioxide over two to three hours. Then, after dispensing a few pints, reapply the gas at the same pressure for no more than a few minutes. This will result in a simulated English style real ale with enough carbonation to dispense the beer with a good head but without excessive gassiness. Of course, if you want to chill the beer instead of drinking it at cellar temperature in the "correct" manner, you may want to carbonate to higher levels.

One of the features of original porter was storage in wooden vats for up to a year during which time they developed a sour, acidic flavor. That is not necessary with most of the weaker, modern porters. Yet for a beer that should be balanced, even the lower-gravity versions will benefit from conditioning for two to three months before drinking. Conditioning should be at cellar temperature, around 55 degrees F (13 degrees C). At warmer temperatures your porter will be ready sooner.

To avoid repetition, I will not give specific instructions for each recipe. Follow the above instructions according to whether the recipe indicates an extract or all grain. Recipes are for 5 U.S. gallons (19 L) final batch size.

NOT SO BROWN PORTER

(all-grain)

This is a beer relying only on brown malt for color and flavor. The nutty-caramel nature of this malt is sufficient to carry the other flavor components into a balanced whole, and is all that is needed for a porter at the low end of the strength spectrum for this style. The result in terms of color is quite pale, perhaps paralleling the original version in this respect. This beer is dangerously drinkable while still young!

- 6 lb English two-row pale malt (2.7 kg)
- 1/2 lb wheat malt (227 g)
- 1 lb brown malt (454 g)
- 2 1/2 oz English Fuggles hops, 3.4% alpha acid (71 g, 8.5 HBU, 32 IBU) for bittering
- London ale yeast

Original specific gravity: 1.048 (12 °P)
Final specific gravity: 1.014 (3.5 °P)



POPEYE PORTER (malt extract)

A robust porter with the biscuit flavor of Belgian malt and a higher alcohol content to balance the bite of the black malt. This beer will benefit from a six-month or longer maturation.

- 7 1/2 lb pale malt extract syrup (3.4 kg)
- 3/4 lb Belgian biscuit malt (340 g)
- 6 oz black malt (170 g)
- 1/2 lb maltodextrin powder (227 g)
- 1 1/4 oz Northern Brewer hops, 7.5% alpha acid (35 g, 9.4 HBU, 35 IBU) for bittering
- Wyeast Irish ale No. 1084 liquid yeast

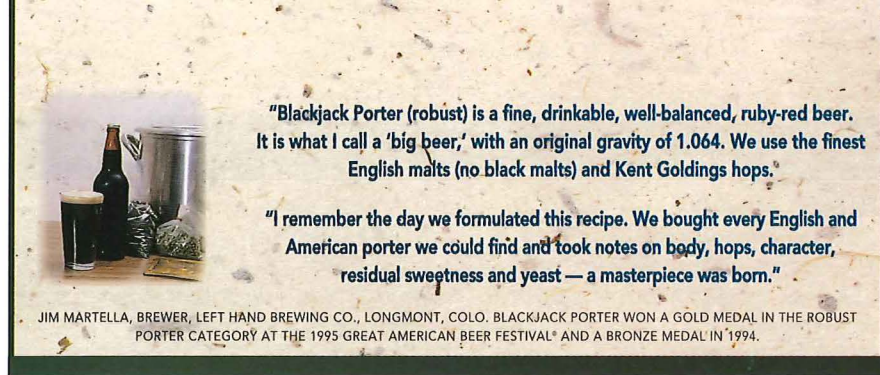
Original specific gravity: 1.060 (15 °P)
Final specific gravity: 1.018 (4.5 °P)

SMOKY THE BEER (all-grain)

A beer with a smoked flavor, but components contributed by the brown, chocolate and crystal malts subdue the smoky element. This is true of the only two commercial examples of smoked porter that I know, from the Alaskan Brewing Co. and the Vermont Pub and Brewery. If you are a smokehead you may want to increase the proportion of peated Rauch or smoked malt. A slightly smoked character may well be truer to the original porter than most modern versions.

- 6 1/2 lb English two-row pale malt (2.95 kg)
- 1/2 lb 40 °L pale crystal malt (227 g)
- 6 oz Scottish peated malt, German Rauch malt or home-smoked malt (170 g)
- 1/2 lb brown malt (227 g)
- 1/2 lb chocolate malt (227 g)
- 1 1/2 oz Perle hops, 7.0% alpha acid (43 g, 10.5 HBU, 40 IBU) for bittering
- Wyeast Special London ale No. 1968 liquid yeast

Original specific gravity: 1.052 (13 °P)
Final specific gravity: 1.015 (3.75 °P)



powering. It can be used in combination with other roasted malts, up to a maximum of 1 1/2 pounds for five gallons (680 g in 19 L), giving an excellent nutty flavor and increasing the mouthfeel. You can make brown malt easily at home. John Harrison and Robert Grossman each provide instructions (see References).

Chocolate malt is more roasted than brown, and is my favorite for both color and flavor in porter. Used in reasonable proportions, up to a maximum of one-half pound for five gallons (227 g for 19 L), it gives a definite but smooth, roasted coffeelike flavor, and that warm red hue that so delights the eye in a well-made porter.

Black malt is the most roasted of the three, meaning it is roasted longer and hotter than brown or chocolate malt and, pound for pound, black malt will contribute stronger roasted flavors. Its use really is what distinguishes a robust porter from a brown porter. It has a harsher flavor than chocolate malt and I find it can easily throw a porter out of balance, so should be used sparingly — not more than four to six ounces per five gallons (113 to 170 g per 19 L). However, it was the principal malt flavoring component of Victorian porters, and warrants attention in re-creating historical brews, as you will see in one of the recipes below.

German rauch malt or a home-smoked malt provide a way to achieve the subtle smoked flavor that may have been characteristic of the original porters resulting from the brown malt, which reportedly was wood-smoked. For the less style conscious or creative homebrewer, an adventurous alternative is Scottish peated malt. Peated malt should not be overdone. I suggest a maximum of one pound per five gallons (454 g per 19 L), and it requires mashing. It is useful for malt extract beers only if a partial mash is used. An alternative is to use liquid smoke if you want to add a hint of smoke flavor. I have not experimented with it, but Wheeler addresses this and malt smoking in his book, *Home Brewing, The CAMRA Guide* (CAMRA, 1993). The smoke character achieved

from peat malt is really quite different from that produced from wood-smoked malt.

No beer worth the name can be discussed without mentioning hops. There are few restrictions on the varieties that may be used for brewing porter. For bittering, standard porters normally fall toward the lower end of the range, 25 to 45 IBU or 7 to 12 HBU in five gallons (19 L). Almost any variety can be used for this purpose, including the high-alpha-acid types such as Chinook and Nugget, although the slightly less aggressive Perle and Northern Brewer are my preferences. However, both English Goldings and Fuggles have a better claim to authenticity in porter brewing, and the American Fuggle derivative, Willamette, is a good alternative. Roger Protz reports that Challenger hops are often used in U.K. porter examples. English and American Fuggles as well as Willamette will serve well as aroma hops, but should not be overdone in this style of beer. Probably no more than one-half ounce for a five-gallon batch (14 g for 19 L) is enough when added at the end of the boil. One hop I recommend avoiding for aroma purposes in porter is Cascade, which I believe is a little overpowering and unbalancing for the style, but is often found in West Coast examples.

Finally, yeast plays an essential role in determining the flavor of the finished beer. What we want for porter is a good top-fermenting ale yeast. Almost any strain will do, but some strains might just bring your porter closer to perfection. Among the dry types, Whitbread is an excellent choice, although it probably is far removed from the original porter strain. My own choice would be one of the liquid strains sold by most suppliers, including British ale, London ale and Irish ale, with the latter particularly suited to the robust style of porter. London ale yeast with its relatively low attenuation will tend to give a higher finishing gravity and slightly higher residual sweetness in the finished beer. As indicated earlier, this is a desirable characteristic in porter. You may want to experiment with other low-attenuating ale yeasts on the market.

You may have noticed that the recipes provided encompass almost all aspects of porter character: chocolate malt as the definitive roasted malt, brown malt as the sole source of roasted character, a black-malt-based "robust" porter, a genuine Victorian brew, a smoked version and a highly hopped style. As far as a recipe for the "three threads" that reportedly inspired Ralph Harwood to brew the first porter, I cannot provide that because we do not really know what these beers were like.

I have never attempted to brew anything like that, but if we assume that the three threads were pale ale, mild brown ale and stale brown ale, as some versions have it, I can suggest an approach. Brew an old pale ale at around 1.090 original gravity, 100 IBUs, and mature it for a year. Make a porter at an original gravity of


LONDON PORTER (malt extract)

A malt-extract version of an 1850 Whitbread recipe, and an example of Victorian porter. It is almost black in color and has a high alcohol content to balance the high bitterness contribution by the generous proportion of black malt. The large amount of brown malt gives the beer enough body and mouthfeel to make the addition of maltodextrin unnecessary. It becomes impressive with six months or more of maturation.

7 1/2	lb pale malt extract syrup (3.4 kg)
1 1/4	lb brown malt (567 g)
1/2	lb black malt (227 g)
2 1/4	oz English Kent Goldings hops, 4.2% alpha acid (64 g, 9.5 HBU, 36 IBU) for bittering
	Whitbread ale yeast (what else?) Try Wyeast British Ale No. 1098 liquid yeast

Original specific gravity: 1.063 (15.75 °P)

Final specific gravity: 1.020 (5 °P)



CHOCOLATE DECADENCE (malt extract)

A straightforward brown porter, pleasant and satisfying.

- 5 lb pale malt extract syrup (2.27 kg)
- 1 lb 140 °L dark crystal malt (454 g)
- 1/2 lb chocolate malt (227 g)
- 1/2 lb maltodextrin powder (227 g)
- 1 1/4 oz Willamette hops, 5.4% alpha acid (35 g, 6.75 HBU, 25 IBU) for bittering
- Wyeast Special London ale No. 1968 liquid yeast

Original specific gravity: 1.050 (12.5 °P)

Final specific gravity: 1.015 (3.75 °P)

1.080, 70 IBUs using a sour mash technique (after mash-in leave the mash at around 122 degrees F or 50 degrees C for several hours) and mature the finished beer for at least three months. Finally, prepare a similar brew by normal infusion mashing, mature for one month then mix with the other two brews in whatever proportions you find suitable. If you do give this a shot, I shall be very interested to hear the results. I am not convinced it would be worth the effort because, after all, porter is supposed to have originated to avoid such a complicated procedure!

KENTISH PORTER (malt extract)

This final recipe is my malt-extract version of a beer produced by a brewpub deep in the heart of England's Kent hop country. It breaks all the rules about hop rates for porter, but comes out balanced, especially when matured for three to four months or more.

- 7 1/4 lb pale malt extract syrup (3.3 kg)
- 1/2 lb 140 °L dark crystal malt (227 g)
- 5 oz chocolate malt (142 g)
- 1/2 lb maltodextrin powder (227 g)
- 2 oz English Kent Goldings hops, 7.8% alpha acid (57 g, 15.6 HBU, 59 IBU) for bittering
- 1/2 oz (14 g) Czech Saaz hops (75 min.)
- 1 oz (28 g) Czech Saaz hops (finish)
- Whitbread ale yeast

Original specific gravity: 1.057 (14.25 °P)

Final specific gravity: 1.020 (5 °P)

REFERENCES

- Corran, H.S. *History of British Brewing*, David and Charles 1975.
- Foster, Terry. *Porter*, Classic Beer Style Series No., 5, Brewers Publications, 1992.
- Grossman, Robert. "Home Grain Roasting," *Zymurgy* Special Issue 1995 (Vol. 18, No. 4).
- Harrison, John. *An Introduction to Old British Beers and How to Make Them*, Durden Park Beer Circle, 1991.
- Protz, Roger. *The Real Ale Drinker's Almanac*, Neil Wilson Publishing Ltd., 1993.

Thomas, Keith. *A Peek Into Porter's Past*. *Zymurgy* Summer 1996 (Vol. 19, No. 2).

Wheeler, Graham. *Home Brewing, The Camera Guide*, CAMRA, 1993.

Terry Foster is an associate research fellow at Cytec Industries Inc. specializing in the application of processing chemicals in the alumina industry. He has been homebrewing for 35 years, and studying and writing about brewing and breweries for 25 years. Terry is author of *Pale Ale* and *Porter* (Brewers Publications, 1990, 1992).

©1996 Terry Foster

GET SERIOUS.



As you consider scaling up your brewing to the next level, you probably want to think about raising your level of knowledge as well.

The Siebel Institute is America's oldest, largest and most respected brewing school. Nearly all the beer brewed in America—from micros to industrial giants—comes from breweries with Siebel graduates on the brewing staff.

Our classes cover every aspect of the art and science of brewing. Call us today for a complete course catalog. It's time to get serious about your brewing.

HANDS-ON AND INTRODUCTORY SHORT COURSES

DIPLOMA COURSE IN BREWING TECHNOLOGY

MICROBIOLOGY AND QUALITY CONTROL LABORATORY COURSES

OVER 40 WEEKS OF SCHEDULED COURSES EACH YEAR



For more information, write or call the registrar

**SIEBEL INSTITUTE
OF TECHNOLOGY**

4055 W Peterson, Chicago, IL 60646
Phone 312/279-0966 Fax 312/463-7688

The Valley Mill®



- Large dual rollers
- Locking indexed parallel roller adjustment
- Generous hopper (6 lb. capacity)
- Power drill adaptor included
- **Only \$99 U.S.** (+shipping/handling)

Contact us for a free brochure

To order - VISA, cheque or money order to:

Valley Brewing Equipment

1310 Surrey Ave. Ottawa, ON. Canada K1V 6S9

Tel: (613) 733-5241 Fax: (613) 731-6436

Internet: valley@web.apc.org



Keg beer without a keg! Just PRESS, POUR & ENJOY!

Now you can enjoy keg beer without pumps or CO₂ systems and you can make homebrew without the hassle of bottles. The revolutionary *Party Pig*™ maintains carbonation and freshness because of its patented self-pressurizing system. It is re-usable and affordable, and it holds 2 1/4 gallons of beer. The "Pig" is easy to carry, is ideal for parties, picnics or holidays and is sized to fit into the "fridge".

Ask for the *Party Pig*™ at your favorite craft brewer and at your local homebrew supply shop. Retail homebrew shops and craft brewers contact:

QUOIN (pronounced "coin")

401 Violet St.

Golden, CO 80401

Phone: (303) 279-8731 Fax: (303) 278-0833

FREE CATALOG



Everything you need
for beer and winemaking!

Fast-Reliable Service

- ★ Malt Extracts & Kits
- ★ Grains & Hops
- ★ Dry & Liquid Yeasts

We have been supplying home
brewers for over 20 years.

Write or call today!

THE CELLAR HOMEBREW

P.O. Box 33525 Dept. ZR

Seattle, WA 98133

800-342-1871

FAX 206-365-7677

E-Mail: homebrew@aa.net

http://www.aa.net/~homebrew/catalog.html

KNOWLEDGE IS BREWING

S P R I N G 1 9 9 6



Learn about beer and
brewing in the nation's only
full-scale brewery devoted
exclusively to brewing
education and research.

CALL TO ENROLL
916.753.0497
ASK FOR A FREE
COURSE CATALOG

Grain to Glass

The science and art of brewing quality beer

May 4-10, 1996 • Woodland, CA

Boots on Practicum

A boots-on beer making experience

May 13-16, 1996 • Woodland, CA

TAKE BOTH! SAVE \$550

Tel 916.753.0497 Fax 916.753.0176

abgbrew@mother.com





How to drastically reduce the number of steps it takes to make a great bottle of wine.

Vintners Reserve™ and Selection Premium Wine Kits offer home winemakers premium quality wine without the endless number of steps. Give us a call for the dealer nearest you and start your wine cellar today!



Available at specialty home brewing stores throughout the United States and Canada. For the dealer nearest you, contact:

Western Canada
Brew King
1622 Kebet Way,
Port Coquitlam, B.C.
V3C 5W9
(604) 941-5588

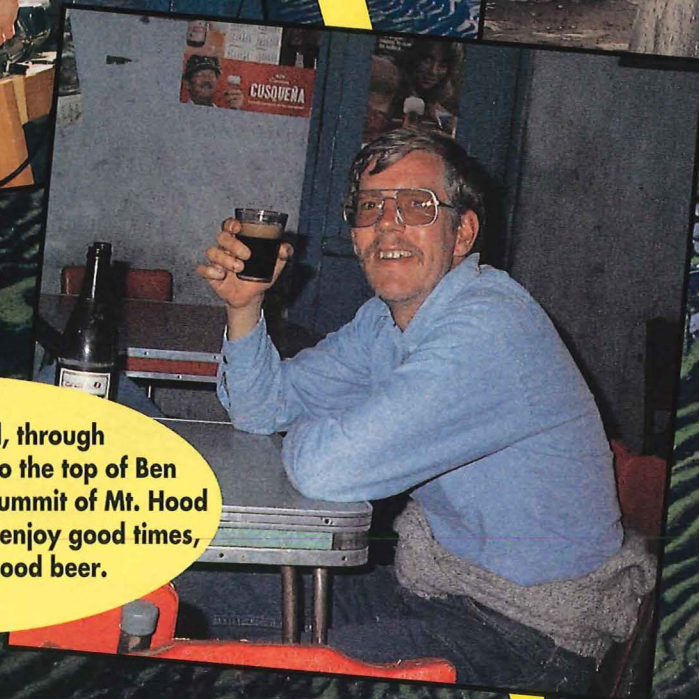
Western U.S.A.
F.H. Steinbart Co.
234 S.E. 12th Ave.,
Portland, Oregon
97214
(503) 232-8793

Ontario
Winexpert
710 South Service Rd.,
Stoney Creek, Ontario
L8E 5S7
1-800-267-2016

Eastern U.S.A.
L.D. Carlson
463 Portage Blvd.,
Kent, Ohio
44240
(216) 678-7733

Quebec
Distrivin Ltée.
950 Place Trans Canada
Longueuil, Quebec
J4G 2M1
(514) 442-4487

Adventures in Brewing



From the backyard, through cantinas in Cuzco, Peru, to the top of Ben Lomond in Scotland or the summit of Mt. Hood in Oregon, Bill and Wendy enjoy good times, good friends and good beer.



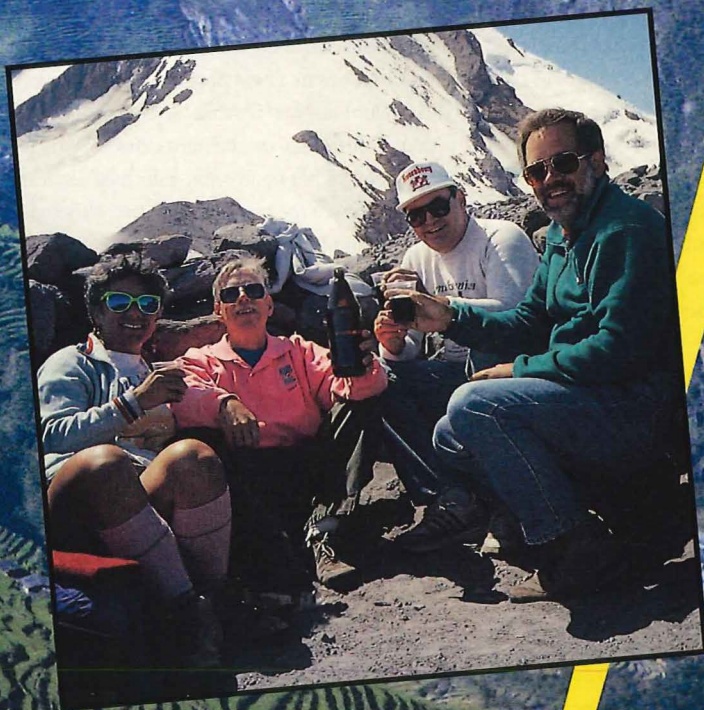
A Homebrewer Profile Starring Wendy Aaronson & Bill Ridgely

By Scott Bickham

When homebrewers begin to formulate recipes for unfamiliar beer styles, they will often scour the literature to collect information on historical ingredients and brewing methods. This not only saves time, compared to the trial and error approach, but along the way the brewer may discover new beers to explore. With Wendy Aaronson and Bill Ridgely, this kind of research has led them to indigenous beers of South America, Asia and Africa that date back thousands of years. While much can be learned from reading the accounts of professional beer historians such as Alan Eames, Wendy and Bill agree that there is no substitute for first-hand tasting and brewing experience.

Wendy and Bill, who live in the Washington, D.C., area, are employed by the Food and Drug Administration as a microbiologist and computer specialist, respectively. Wendy helped Bill find a job at the FDA by forwarding job announcements to him, but they met at a meeting of the Brewers United for Real Potables (BURP) homebrew club in 1989. Since then, they have been spending an increasing amount of time brewing and traveling together in search of good and interesting beer. They have done several cross-state bicycle rides including one across Maryland and another across Pennsylvania.

Their names should already be familiar to regular readers of *Zymurgy*: they co-authored "Adventures in Chicha and Chang" in Spring 1994 (Vol. 17, No. 1), and Bill had two articles on sorghum beers in the Special Issue 1994 (Vol. 17, No. 4). In addition to beer-related activities, they enjoy hiking, biking and caving. Last summer they were able to combine several of these pastimes when they participated in the Tour de BURP. They set up their camp and beer in the Williamsport, Md., area and spent the days bicycling around landmarks such as the Antietam Civil War battle site. Wendy also enjoys belly dancing and, while Bill does not participate in this hobby, he is an enthusiastic spectator.



Homebrewing History

Wendy became interested in homebrewing in 1983 when she was in the midst of an organic gardening and health-food phase of her life. She had already developed a passion for beer, but the best beers on the market at the time were costly imports. By brewing her own, Wendy discovered she could brew inexpensive beer made from ingredients she knew were natural. Taste also was a factor in her decision to start brewing — the best imports were no match for fresh homebrew. Her first batch was made using a Superbrau kit, and it turned out fine in spite of the large amounts of cane sugar, she says. She quickly made the jump to all-malt beers with the help of her dad, who worked in a supermarket and was able to buy Blue Ribbon malt extract for \$3 a can. At this price, Wendy decided she might as well use two cans of extract instead of one can plus several pounds of sugar.

Now she brews about 10 batches a year, and with the increasing quality of ingredients

available to homebrewers she produces beers that rival the best imports and micros. "My microbiology skills definitely gave me an advantage when I started to brew, because I didn't have any books on the subject. My beers were never contaminated, and I repitched yeast slurry," Wendy said. "It only took a single introduction to homebrew before friends and family commissioned me to brew for their parties."

Bill also had an unusual introduction to homebrewing. In the late 1970s, Ralph Bucca, a college friend, had been brewing for several years and was making quality beers. Of course, Bill was more than willing to help consume the fruits of Ralph's labors, but the problem with this arrangement was that Ralph saw his supply being depleted at an alarming rate. He solved the crisis by giving Bill his first homebrew kit.

"My first homebrew was fermented in an eight-gallon plastic trash can with cellophane on top and a pinhole for an airlock. Amazingly, the beer didn't turn out terrible, and it was different enough from the commercial stuff of the day that I wanted to make more. I guess getting through that first batch is always the biggest hurdle for a new brewer. Once you get beyond that, chances are you'll be hooked," says Bill.

He has now been brewing on a fairly regular basis for 15 years. In 1981, he was invited to attend the first organizational meeting for BURP, which has since grown to more than 300 members. Bill has held a variety of club offices, taught brewing and judging classes, and collected a good number of ribbons from homebrew competitions.

"I don't brew strictly to style anymore, and I don't brew on the club schedule like I used to," says Bill. "There are also a lot of top-notch brewers in the club now, so competition is much tougher."

Wendy and Bill are active as judges and entrants in local competitions such as the Spirit of Free Beer and the Spirit of Belgium. Wendy serves on the board of the mid-Atlantic region of the Beer Judge Certification Program.

"I became interested in being a beer judge when I read about the program in *Zymurgy*," Wendy says. "I knew this would increase my knowledge of beer styles, which was severely limited because I lived in a county that was the sole distributor for beer and wine, and you could not get beers other than the megabrews and two or three imports. I also wanted to ed-

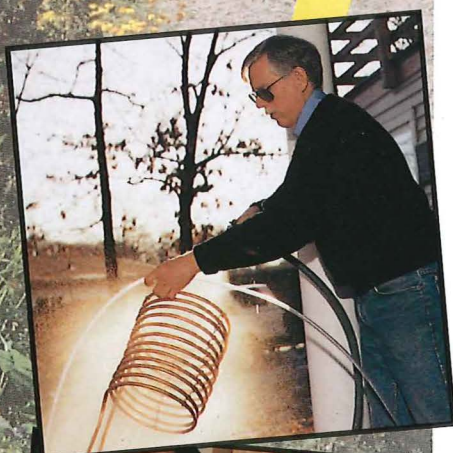
ucate my palate so that I could be more helpful to Brew Masters customers who brought in their beers and asked how to improve them." (Brew Masters is the local homebrew supply store where I worked twice a month).

"We joined the BJCP more as an educational experience than anything else," Bill says. "To pass the exam, we had to crack the books and learn as much about beer and brewing as we could. Now, judging helps us maintain an edge and keep ourselves up to date on styles and techniques. Of course, it's also a lot of fun, and we've met a lot of interesting people at the competitions."

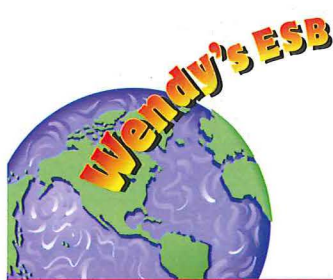
Neither wants to be a "slave to style," so they primarily brew what they enjoy drinking and enter the closest category. Nonetheless, each has won a number of ribbons, and at the 1994 Home Wine and Beer Trade Association Nationals in Rockville, Md., Bill and Wendy placed second and third in the California Common and English Bitter categories, respectively.

The Homebrewery

"We both brewed with extracts and steeped grains for the first five years or so, then went to partial mashes, which improved our beers 100 percent," Bill says. "Wendy and I have been brewing all-grain for about a year and a half now. We still brew small (three-gallon) extract batches as yeast propagators for larger (10-gallon) all-grain batches. This gives Wendy an opportunity to try different extracts, which in turn helps her make more informed recommendations at the homebrew shop." Although Wendy and Bill each brew 10 to 15 batches a year, they only brew about half of them together. They use a rectangular picnic cooler that has been converted to a mash tun. Their mashing method combines aspects of both infusion and decoction. The malt is mixed in the converted cooler with enough hot water to bring the mixture to between 122 and 128 degrees F (50 and 53 degrees C). After a 30-minute protein rest, two gallons (7.6 L) of boiling water are added to bring the mash to 140 degrees F (60 degrees C). After another 30-minute rest, a thick decoction is pulled, brought to a boil and returned to the cooler to bring the temperature to between 150 and 158 degrees F (66 and 70 degrees C). After the starch conversion, one-gallon (3.8-L) of runnings is pulled



Brew day in the backyard.



This recipe is one of Wendy's award-winning extract recipes. It is a slight modification of Charlie Papazian's Wise Ass Red Ale.

Ingredients for 5 gal (19 L)

- 1/4 lb pale ale malt (0.11 kg)
- 1/4 lb 60 °L crystal malt (0.11 kg)
- 1/3 cup roast barley (78 mL)
- 4 lb Mountmellick light malt extract syrup (1.8 kg)
- 3 lb Munton & Fison light dry malt extract (1.36 kg)
- 1/2 oz Centennial hops, 10% alpha acid (14 g) (60 min.)
- 1/2 oz Centennial hops, 10% alpha acid (14 g) (30 min.)
- 1/2 oz Mt. Hood hops, 4% alpha acid (14 g) (5 min.)
- 1/2 oz Mt. Hood hops, 4% alpha acid (14 g) (2 min.)
- 1/3 oz Cascade hops, 6.5% alpha acid (9 g) (dry hop)
- Wyeast American Ale No. 1056 liquid yeast (1 qt starter)
- 3/4 cup corn syrup (177 mL) (to prime)

- Original specific gravity: 1.052
- Final specific gravity: 1.010

Crush grains and add to grain bag then place in brewpot with 1 1/2 gallons (5.7 L) cold water. Bring water to boil and remove grains just before water boils. Add malt extracts and hops according to schedule. Chill wort and add to fermenter with filtered or pre-boiled water to obtain five gallons (19 L). Ferment at 65 degrees F (18 degrees C).

for the second decoction, boiled and returned to heat the mash to 170 degrees F (77 degrees C). With highly modified malts, the protein rest and the infusion of hot water can be omitted, but this method works well for under-modified malts and malty beers, where the decoction intensifies the malt flavor and aroma. Their brewpot is a converted half-barrel keg with a copper manifold and valve installed to allow the wort to be separated from the hops.

The latest addition to the brewery is a belt-driven roller mill that was used by Oxford Brew Co. in Baltimore. It has been mounted on a sturdy wooden base and takes only a few minutes to grind 20 pounds of grain.

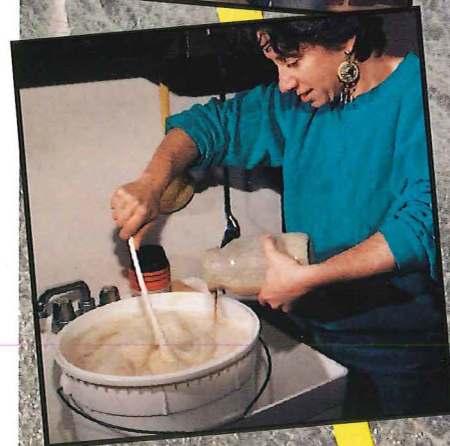
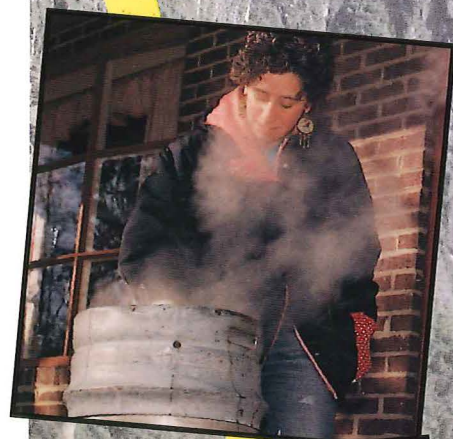
Of course, it takes more than good equipment and ingredients to brew quality beer. During the brewing of Auld Rabbie Burns ale, everything went smoothly until the last addition of hops to the brew kettle. Then Wendy brought out a starter of the yeast culture they planned to use and poured a small sample for everyone to taste. Instead of having a clean flavor that accented the malt, there was a slight sourness that would be unacceptable in a Scottish ale. After a few frantic calls, Wendy discovered she could get a slurry of Old Dominion ale yeast from the brewery in Ashburn, Va. Although a trip to the brewery from Bill's house and back added an hour to their brewing day, it was a small price to pay for saving a batch of beer. The moral of the story, besides making it a habit to taste your starters, is to be flexible and adapt to brewing situations as they develop.

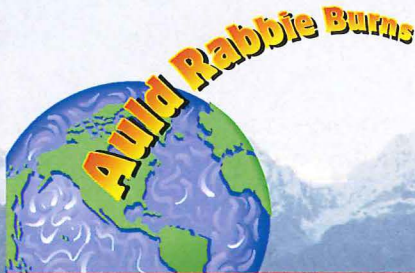
Scotland

Bill and Wendy's first overseas adventure was to Scotland. They became interested in Scottish beers when they conducted a tasting for An Comunn Uisge Beatha, the Scotch whiskey society to which they belong. Bill researched strong Scottish ales and brewed his first for the tasting. This experience whetted his appetite for Scottish beer and traditions. He also has some ancestral connections to the clan Montgomery through his mother, so it took very little to convince them to go to Scotland when An Comunn scheduled a trip last year. Because they wanted to concentrate on brewing, they decided to go on their own and join with the group on occasion.

"We visited every small brewery in Scotland except Orkney, which we interviewed by phone, and Borge House in Aberdeen, which was too far off our route," Bill said. "We visited all of the historic regional breweries: Belhaven, Caledonian and MacLays as well. We didn't tour the major national breweries like Scottish & Newcastle, Tennants or Alloa because they weren't our focus, which was the rise of small and regional breweries since the consolidations.

"On the whiskey side, we toured Highland Park, Scapa, Glenmorangie, Glenlivet and Edradour, and we stopped by the visitor centers of several other distilleries including Oban, Ben Nevis and Glen Ord. We also paid a visit to the Scotch Whisky Heritage Center in Edinburgh." Never being ones to disappoint their friends on this side of the pond, they brought back more than 50 bottles of beer. "We learned enough about Scottish beer and brewing before and during our trip to offer a course when we returned on brewing and judging the various styles. This included a revision of the style guidelines for Scottish ales to reflect a whole category of beers (strong ales between 1.050 and 1.070 O.G.) not covered under existing guidelines. These guidelines have been incorporated into the proposed BJCP revisions but have not yet been formally adopted by either the AHA or the BJCP," Bill says. While in Scotland, in addition to tasting single malt scotch, beer and haggis, they found time for hiking and a mountain bike tour of the Highlands.





This beer was brewed to commemorate the birthday of the famous Scottish poet, Robert Burns (1759-1796). It would be classified as a Scotch Wee Heavy in Scotland and has a clean maltiness with some caramel flavor and a slight toastiness. Just cut everything in half for a five-gallon batch.

Ingredients for 10 gal (38 L)

- 25 lb pale ale malt (11 kg)
- 2 lb aromatic malt (0.9 kg)
- 1 lb wheat malt (0.5 g)
- 1 lb 60 °L crystal malt (0.5 kg)
- 1/4 lb roast barley (0.1 kg)
- 2 oz East Kent Goldings hops, 5% alpha acid (57 g) (60 min.)
(Stryian Goldings are an acceptable substitute.)
- Wyeast Scottish Ale No. 1728 liquid yeast culture (prepared in a 2-qt starter)

- Original specific gravity: 1.072
- Final specific gravity: 1.021

Combine malt and five gallons (19 L) 130-degree-F (54-degree-C) water in a modified Gott cooler for a 30-minute protein rest at 120 degrees F (49 degrees C). Add two gallons (7.6 L) boiling water to bring to 140 degrees F (60 degrees C) and rest for another 30 minutes. Pull a thick six-gallon (22.7-L) decoction from the main mash, bring to a boil, then add it to main mash bringing the mixture to 158 degrees F (70 degrees C). Hold for 30 minutes, then remove three gallons (11.3-L) of liquid from the mash, boil and add to the main mash to bring it to 165 degrees F (74 degrees C). Sparge with 11 gallons (41.6 L) of water at 170 degrees F (77 degrees C) to yield 12.5 gallons (47 L). Boil for 90 minutes to yield 10 gallons (38 L).

Brewers using well-modified English malts can use a single-step infusion mash for 60 minutes at 158 degrees F (70 degrees C). This grain bill is based on 25 points/pound/gallon, you can adjust for your home-brewery accordingly.

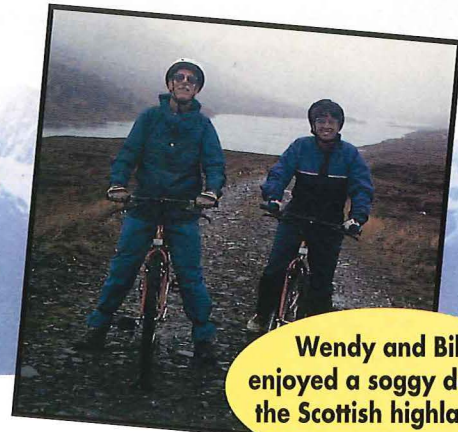
Inspired by Indigenous Beers

"I started getting interested in primitive and indigenous beers when I began traveling internationally in the early 80s," Bill said. "Just about every country had a fermented grain beverage of some sort. It turned out many of these beers had histories far older than the Western-style beers we were familiar with. You couldn't help but be intrigued by these."

Most of the beers available in North America are brewed and fermented using techniques that were developed in Europe. Seed grains, primarily barley and wheat, are malted, dried and kilned to convert the endosperm to a complex mixture of starches, sugars, proteins and amino acids. In the brewing process the malted grains are crushed, mashed and sparged to produce a sweet wort rich in amino acids and fermentable sugars. This sweet wort is then boiled with hops, cooled and fermented by yeast to produce beer as we know it today.

In other cultures, very different methods have been developed for converting the starches found in raw grain to a fermented beverage. Methods of recreating two of these, chicha and chang, are described in Wendy and Bill's *Zymurgy* article.

"When Wendy and I started our chicha and chang project, we contacted Alan Eames, the "Beer King." Poring over Alan's library of historical volumes was a real revelation," Bill recalls. "People had been brewing beer and writing about it for thousands of years. Our interest was piqued, and we wanted to learn more. It's been our beer mission ever since." Chang is produced in regions of Asia using special yeast cakes that perform the starch conversion and fermentation simultaneously. These cakes contain not only yeast, but a variety of other fungi that work together to produce low-alcohol beers from rice, millet and/or barley. Chicha usually is made from corn, quinoa or manioc root, and the conversion of starches to sugars is done with the help of diastatic enzymes found in saliva. These enzymes are mixed with the flour from the grains in a mastication step that was traditionally performed by the women and children of the village. This feat was accomplished admirably by Wendy and other women from BURP during their famous "chicha chew-in."



Wendy and Bill enjoyed a soggy day in the Scottish highland

A third type of indigenous beer produced from sorghum, millet and maize in sub-Saharan Africa is the current focus of Bill and Wendy's research. Beers made from sorghum are the most common, and of these, most are brewed in South Africa. Details can be found in the references, but sorghum beers traditionally are produced using a sour mash technique, hence the characteristic sourness. Water and grain are added and the mixture boiled until it reaches a gruel-like consistency. After several days of spontaneous fermentation, the beer is strained and served. Learning more about this fascinating beverage was the objective of a trip Wendy and Bill took to South Africa in March 1996. They sampled sorghum beers from a variety of sources ranging from small shebeens, or beer bars often located on the premises of village breweries, to large industrial breweries. They took guided tours of a few of the breweries, so look for another informative article in a future issue of *Zymurgy*.

Their penchant for adventure and home-brewing inspires this couple to explore indigenous beer and brewing traditions around the world.

References

- Aaronson, Wendy and Bill Ridgely. "Adventures in Chicha and Chang," *Zymurgy* Spring 1994 (Vol. 17, No. 1).
- Ridgely, Bill. "African Sorghum Beers," *Zymurgy* Special Issue 1994 (Vol. 17, No. 4).
- Ridgely, Bill. "Sorghum," *Zymurgy* Special Issue 1994 (Vol. 17, No. 4).
- Scott Bickham of Columbia, Md., is a physicist at Naval Research Laboratories. He has been brewing, judging and writing about beer since 1993. Scott is a BJCP Master beer judge and current BJCP exam director.
- ©1996 Scott Bickham

American Homebrewers Association®

Mead Magic

Abacadabra. Peer into your homebrew club's crystal carboy and select the best mead to send to the Mead Magic Club-Only Competition. Entries are due Aug. 12, 1996. Three bottles per entry, one entry per club. Please use the AHA Sanctioned Competition entry forms and include the \$5 entry fee. **All clubs registered with the AHA are eligible and are encouraged to participate.**

Send all entries to:
Mead Magic
c/o American Homebrewers Association
736 Pearl St.
Boulder, CO 80302



Questions? Contact James Spence at
(303) 447-0816, ext. 121; james@aob.org;
70740, 1107; or FAX (303) 447-2825.

Zym 19

CLUB-ONLY COMPETITION

BREW YOUR OWN GROW YOUR OWN



**IF YOUR HOBBY IS MAKING
HOMEBREWED BEER OR
INDOOR GARDENING,
YOU'LL LOVE OUR
LARGE SELECTION
OF PRODUCTS AT
EXCELLENT PRICES!
CALL FOR A FREE
CATALOG OR VISIT YOUR
NEAREST BREW & GROW
STORE IN CHICAGO, DETROIT,
MINNEAPOLIS, OR MILWAUKEE.**

LIGHTS, HYDROPONICS, ORGANICS, & HOMEBREW SUPPLIES

BREW & GROW LOCATIONS:

MINNEAPOLIS AREA

8179 UNIVERSITY AVE. N.E., #417
FRIDLEY, MN 55432
(612) 780-8191

DETROIT AREA

33523 W. 8 MILE RD., #F-5
LIVONIA, MI 48152
(810) 442-7939

MILWAUKEE AREA

19555 W. BLUEMOUND RD., #36
BROOKFIELD, WI 53045
(414) 789-0555

CHICAGO SUBURBS

2379 BODE RD.
SCHAUMBURG, IL 60194
(708) 885-8282

CITY OF CHICAGO

1824 N. BESLY CT.
CHICAGO, IL 60622
(312) 395-1500

CLUB DISCOUNTS AVAILABLE

GRAPE AND GRANARY

- ◆ 150 Malt Extracts
- ◆ 40+ Malted Grains
- ◆ 30 Hop Varieties
- ◆ 35 Yeast Strains
- ◆ Bulk Pricing
- ◆ Free Grain Crushing
- ◆ Same Day Shipping
- ◆ Kegging System & Parts

The Grape and Granary

1302 E. Tallmadge Ave.
Akron, OH 44310

Free Catalog 800-695-9870
Fax 216-633-6794



Weekends & Labor Day • Aug. 24 - Sept. 29
Enter Our

Homebrewing Competition

— AHA-SANCTIONED —

**Black Point, Novato
Marin County**

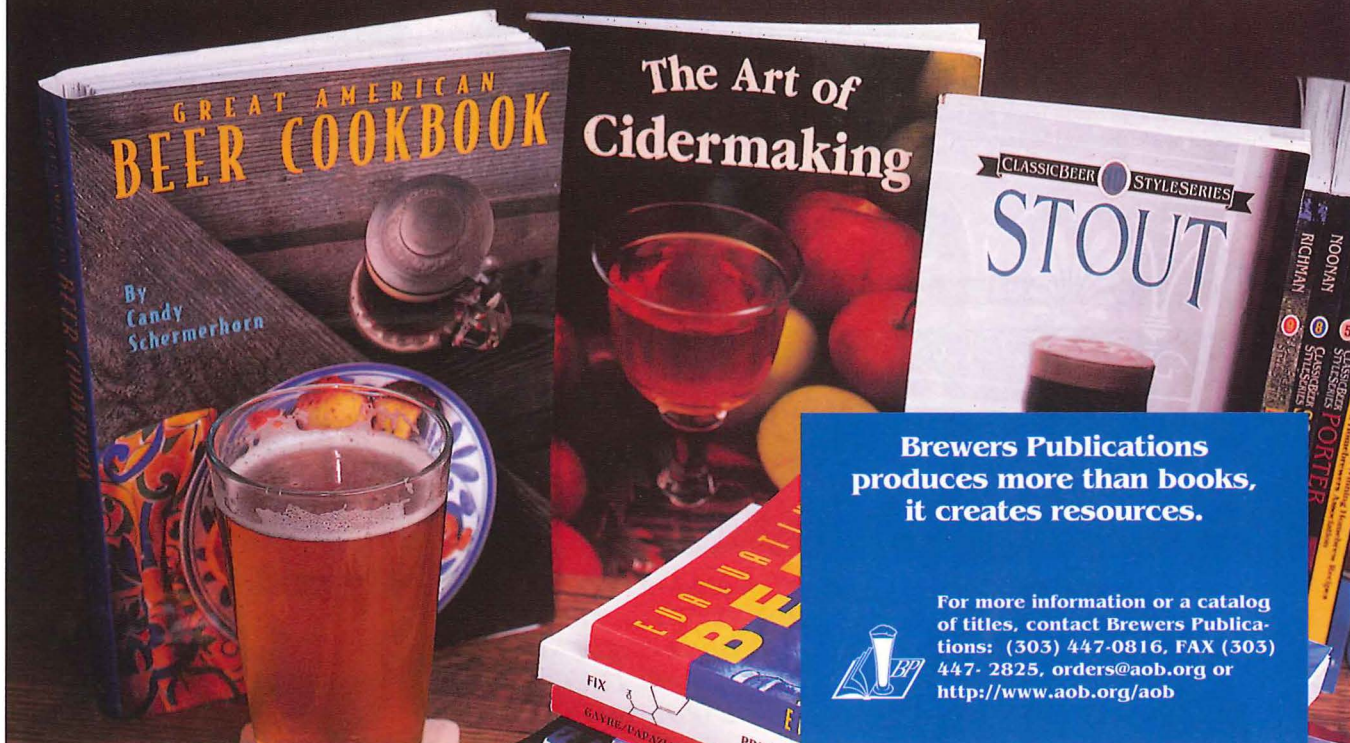
For details call: **415.982.0937**

Entries must be received between
Aug. 27 and Sept. 4, 1996



© 1996 REC

Quench Your Thirst with Brewers Publications.



**Brewers Publications
produces more than books,
it creates resources.**

For more information or a catalog
of titles, contact Brewers Publica-
tions: (303) 447-0816, FAX (303)
447-2825, orders@aob.org or
<http://www.aob.org/aob>

Brewers Publications presents ...

Stout

by Michael J. Lewis

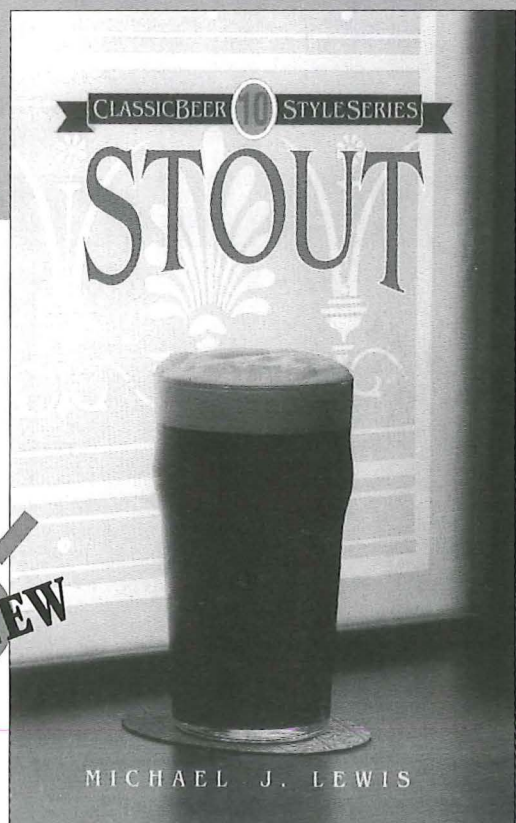
What makes the Irish so lucky? Ireland is the birthplace of stout. Now, a bit of that luck is available to everybody in *Stout* by Michael Lewis. The 10th volume in Brewers Publications' Classic Beer Style Series illuminates the history of this dark brew — from its humble origins to its current status as a dietary staple in England and Ireland, and a pub favorite around the world. Lewis, director of the brewing program at the University of California—Davis, provides comparisons of commercial examples and recipes for creating world-class stouts at home or in the brewhouse. Brewers and beer lovers will enjoy reading *Stout* almost as much as they enjoy drinking stout.

5½ x 8½ • 184 pages • four-color soft cover • illustrations • b&w photos •
Brewers Publications • 1996 • ISBN 0-937381-44-6 • \$11.95



To place an order or request a free catalog contact Brewers
Publications at PO Box 1510, Boulder, CO 80306-1510, U.S.A.;
(303) 546-6514; orders@aob.org; or FAX (303) 447-2825.
Information is also available on the World Wide Web at
<http://www.aob.org/aob>.

Zym 19



AHA

Registered Homebrew Clubs

This list of AHA registered homebrew clubs includes address corrections and all new clubs registered through March 7. Clubs registered between Oct. 20, 1995, and March 7, 1996, are labeled (new). The AHA registered homebrew club list is updated weekly and available from info@aob.org. You can also browse homebrew clubs by state at <http://www.aob.org/aob> and link to many club home pages.

For information about starting a homebrew club in your area, contact the AHA. To register your club with the AHA, send a brief letter including the same kind of information you see here to James Spence, AHA administrator, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816 ext. 122; FAX (303) 447-2825; james@aob.org or 70740,1107.



Clockwise from upper left: Paul Stolarsky (l) and John Dugne, Hudson Valley Homebrewers, press cider at Bruce and Gloria Franconi's in Red Hook, N.Y.; Barbara Brumbaugh, Diane Catanzaro and Chris Jones of the Hampton Roads Brewing and Tasting Society; John Szarek, president of the Greater Huntington Homebrewers Association, and Jeff Boggess, president of the Capital Brewers Guild, toast Oktoberfest 1995 with a liter of Jeff's special O'fest brew; Dave Pankey (l), Russ Gee and Dodd Snodgrass of the Hell's Canyon Homebrewers; JL Lyon pours the grain, George Amberman crushes it and Bobby Pellerin (kneeling), Kevin Oliver (with notebook) and Ken Dunaway observe at the Hampton Roads Brewing and Tasting Society "big time brewing session."

PHOTOS LEFT TO RIGHT COURTESY OF HUDSON VALLEY HOMEBREWERS, HAMPTON ROADS BREWING & TASTING SOCIETY, CAPITOL BREWERS GUILD AND HELL'S CANYON HOMEBREWERS

AUSTRALIA**AUSTRALIAN CAPITAL TERRITORY****Canberra Brewers Club**

c/o Chris Elworthy
PO Box 1999
Canberra, ACT
(06) 2310251
jnagle@pcug.org.au

The Ferm

c/o Christopher Pittcock
46 Glossop Crescent
Campbell, ACT 2601

NEW SOUTH WALES**Northside Wine/Beermakers Circle**

c/o Brian Starley
1 Young Crescent
Frenchs Forest, NSW 2086
(02) 451-3999

Redwood Coast Brewers

c/o Mark Sayer
35 Chalmersford St.
Tamworth, NSW 2340
(067) 66-7852

QUEENSLAND**Brisbane Amateur Beer Brewers**

c/o John Thorp
20 Anna Marie St.
Rosedale South, QLD 4123
07223-8573

James Cook University

Home Brewers Guild
c/o Christopher Sawbridge
James Cook University Union
Townsville, QLD 4811
(077) 81 4788

VICTORIA**Amateur Brewers Association — Victoria**

c/o Colin Penrose
5 Raleigh St.
Seville, VIC 3139
ph/FAX (800) 637 072

Amateur Brewers of Victoria

c/o Barry Hastings
10 Aston Heath
Glen Waverly, VIC 3150
561-4603

Bayside Brewers Club

c/o The Secretary
PO Box 175
Chelsea, VIC 3195
telecom@iaccess.com.au

Sale Area Amateur Zymurgists (SAAZ)

c/o Paul Robinson
276 Raymond St.
Sale, VIC 3850
(051) 43 1143

The Fermenters

276 Raymond St.
Sale, VIC 3850
051 43 1143

AUSTRIA**Austrian Homebrew Club**

c/o Fernando Gerevini
Krottenbachstrasse 58A/37
Wien, A-1190
http://www.wu-wien.ac.at/usr/h90/
h9001590/

CANADA**ALBERTA****Dryland Brewers**

c/o Dale Merkel
Box 3113
Drumheller, AB T0J 0Y0
(413) 823-9591

Edmonton Homebrewers Guild

c/o Ross Hastings
10932 130th St.
Edmonton, AB T5M 0Z3
(403) 451-7633

Fairview Independent**Zealous Zymurgists (FIZZ)**

c/o Garth Hart
10912-103 Ave. Box 2230
Fairview, AB T0H 1L0

Marquis De Suds Homebrewers

c/o Randy Davis
226 Huntington Close N.E.
Calgary, AB T2K 5B2
(403) 260-4184
rmdavis@cal.mobil.com

BRITISH COLUMBIA**Campaign for Real Ale (CAMRA) Victoria**

PO Box 30101 Saanich
Central Postal Outlet
Victoria, BC V8X 5E1
(604) 595-7728

Royal Canadian Malted Patrol

c/o Jim Cave
828 E. 17th Ave.
North Vancouver, BC V7L 2X1
(604) 987-8262

NEW BRUNSWICK**Sparky's Social Club**

c/o James E. Sellars
120 Queen St.
Moncton, NB E1A 1R7
(506) 876-7977

NEWFOUNDLAND**Fish N' Brew's**

c/o David McKinnon
240 Portugal Cove Rd.
St. John's, NF A1B 2N6
(709) 368-5038

St. Florian's Brewers' Guild

c/o Christian St. Pierre
21 North St.
Corner Brook, NF A2H 2K9
(709) 634-8138

NOVA SCOTIA**Brewnosers**

c/o Jeffrey Pinhey
2325 Clifton
Halifax, NS B3K 4T9
(902) 425-5218

Fellowship Against Repulsive Tasting Suds (FARTS)

c/o Gerald Peters
RR #1
Aylesford, NS B0P 1C0
(902) 847-3288

ONTARIO**Amateur Winemakers of Ontario**

c/o Paul Jean Jr.
28 Otten Dr.
Nepean, ON K2J 1J2
(613) 825-3229

Brewers Or Zymurgists Only Society (BOZOS)

c/o Mike Aylward
79 Grath Crescent
Whitby, ON L1N 6N7
(905) 433-1784

CABA - Canadian**Amateur Brewers Association**

c/o Matthew Plexman
146 First Ave.
Toronto, ON M4M 1X1
ph/FAX (416) 462-9981

Canadian Association for Better Ale and Lager (CABAL)

c/o B. Peter Holland
PO Box 631
Toronto, ON M5C 2J8
(416) 287-0195

The Chartwell Brewers Union

c/o Glenn Anderson
12 Chartwell Crescent
Keswick, ON
(905) 476-9658
gramps@interlog.com

Cochrane Homebrewers Club

c/o Adrian J. Cantin
PO Box 1185
Cochrane, ON P0L 1C0
(705) 272-5335



From left, Maine's Down Yeasters John Macauley, Bob Noonan, Peter Schweitzer, Suzie Foster, Steve Pelsue, Joel Farley, Frank Pendola, Sean McKenna, Rob Kuza, Fuzz Harrison, Val Scott, Todd Foster met at Bar Harbor Brewing Co. and Soda Works in Otter Creek, Maine, in January 1996.

Collingwood Brewing Club

c/o Joanne Anderson
Box 3068, RR3
Collingwood, ON L9Y 3Z2
(705) 445-1087

East Enders

c/o Erich Mann
67 Brockman Crescent
Ajax, ON L1T 2L2
(416) 427-9324

Golden Horseshoe Amateur

Brewer's Association (GHABA)
c/o Craig Pinhey
351 Charlton Ave. W.
Hamilton, ON L8P 2E6
CPINHEY@DHC.DOFASCO.CA

Thunder Bay**Home Brewers Association**

c/o Bruce Holm
160 Iris Crescent
Thunder Bay, ON P7A 8A1
(807) 767-5077

Toronto Regional Association**of Specialty Homebrewers' (TRASH)**

c/o Dave Kimber
1540-C King St. W.
Toronto, ON M6K 1J6
(416) 532-3754
http://www.io.org/~ath/trashcan.html

QUEBEC**Montreal Association of****Serious Homebrewers (MASH)**

c/o Scott Vitus
1385 Garneau St.
Bruno, PQ J3V 2V5
(514) 441-9529

Technovin

c/o Mitch Hamilton
475 Dumont #112
Dorval, PQ H9S 5W2
(514) 636-3669

SASKATCHEWAN**Saskatoon Berry Brewers**

c/o Robert Schultz
326 Brunst Crescent
Saskatoon, SK S7N 3S8
(306) 966-7822

EGYPT**El Nil Brewers**

c/o Wayne Hocking
#8 Rd. 208 Maadi
Cairo
20 2 353 2953
ruwh@lockmtm.dom.eg.net

GERMANY**German Homebrewers Association**

c/o Dipl. Brm. Christian von der Heide
Adlzreiterstr 27
München, D-80337
FAX 49 89 74791091
100541.2263@compuserve.com

JAPAN**Beer Club of Japan**

c/o The Cellar Japan
2-1-19 Shichinomiya-cho
Hyogo-ku Kobe, 652
(078) 651-1437; FAX (078) 651-1440

Far East Brewers

c/o Norman Fewell
Nakagusuku son, Kita Hama
381 Ban Chi, Okinawa

Foreign Fermentations

c/o Randy Ulland
343 Nikaido, Kamakura-shi
Kanagawa-Ken, 248
0467-23-5187

Japan Homebrewing**Promotion Association**

c/o Miyanaga-Biru 301
Motoakasaki 1-5-1 Minato-Ku
Tokyo

THE NETHERLANDS**Bergsch Bierbrouwersgilde**

c/o Marc vander Steen
Krokussenveld 19
4613 DX Bergen op Zoom
01640-37715

De Roerstok

c/o René van Gestel
Diederikdreef 30
50456 GT Tilburg
013-351011

De Wortketel


c/o Piet Strijker
Schoolakkers 21
7932 PM Echten
05288-1251

Delta Brouwers

c/o Jan Passieux
Wilhelminastraat 58
4413 BB Krabbendijke
01134-2364

HAB Twents Bierbrouwersgilde

c/o Roy Revet
Uelsenerweg 32
7651 KW Tubbergen
05793-1518

Noordhollandse Bierkring "De Herrezen Pauw" 
c/o Hans Aikema
Venenlaan 100
1623 RK Hoorn
0229 218175

St. Petri-gilde
c/o G. W. Wolf
Ruitersveldweg 46
8091 HW Wezep

Stichting Noordhollandse Alternatieve Bierbrouwers (SNAB)
c/o Secretariaat
Postbus 4189
1620 Na Haarn
0206932448

"Triple-W"
c/o Steven van den Berg
Willemsweg 110
6531, DN Nijmegen
080-562952

'tWort wat
c/o Theo van de Voorde
Houtwijkerveld 24
2131 MG Hoofddorp
02503-31286

NEW ZEALAND

Auckland Guild of Winemakers
c/o Hec Denniston
426 Sandringham Rd.
Auckland 3

Far North Brewers & Vintners
c/o Nancy Barden
PO Box 214
Mangonui North Island

Hamilton Brewers & Winemakers Club
c/o Barry G. Whiteley
45 Radiata St.
Hamilton
64-7-8559653

Hibiscus Winemakers & Brewers
c/o Jessie Evans
111 Whangaparaoa Rd.
Orewa, Auckland

Manukau Winemakers & Apiarists
c/o Basil Dempsey
18 Picton St.
Papatoetoe

North Shore Fermenters Club
c/o I.M.T. Ansin
13 Sundown Ave.
Whangaparaoa, Auckland

Waimea Amateur Brewers Society
c/o Marie Stephens
4 Churchill Ave.
Richmond Nelson, 7001

SWEDEN

Amylase
c/o Tommy Sandstrom
Tornrosavägen 29
43531 Mölnlycke
031-882371

Fermentation Army
c/o Charles Cassino
CF Box 1419
11184 Stockholm
46 8 778 46 80
FAX 009 46 8 7967102

Heimbrewed
c/o Anders Jonasson
Rådhusgatan 60
83134 Östersund
(063) 131463

Olsallskapet HBK
Tony Magnusson
Centralgatan 75
S-14940 Nynashamn
(46) 8520 203676
FAX (46) 8520 17647

Swedish Homebrewers Association
c/o Håkan Lundgren
Vallstanäsvägen 75, S-195
70 Rosersberg
046 8 590 35 727
lundgren@shbf.se


Vörtens Vänner
c/o Patrik Sjöberg
Lomvagen 643
S-19157 Sollentuna
(08) 758 16 35

SWITZERLAND

Association des Buveurs d'Orges (ABO)
c/o A. Schmid
Case Postale 2
1800 Vevey 1

Swiss Homebrewing Society
c/o Marco Sängler
Rüthhofstr. 15
8049 Zürich
01 342 48 28
rolf.holtkmap@mcmeier.ch

UNITED KINGDOM

Beeston Beer Circle 
c/o R. N. Brooksbank
17 Dovecote Lane
Beeston, Notts NG9 1HR
0115 9255 999

Campaign For Real Ale (CAMRA)
c/o I.W. Dobson, Company Secretary
230 Hatfield Rd.
St. Albans, Herts AL1 4LW
01727 867201
01727 867670

Craft Brewing Association
c/o James McCrorie
82 Elmfield Rd.
London, SW17 8AN
0181 675-0340

North Cotswold Brewers
c/o Steve Merrett
17 Hall Rd.
Cheltenham
01242 238086
paul@ptalder.demon.co.uk

UNITED STATES

Homebrew SIG (MENSA)
c/o Ross Goeres
AIRCENT RUF UNIT 23625
APO AE, 09189

ALABAMA Birmingham Brewmasters
c/o Kim Thomson
2208 2nd Pl. N.E.
Birmingham, AL 35215
(205) 854-4884
darren@ualvm.ua.edu

Lower Alabama Lagers
c/o Maarten van der Giessen
366 Michigan Ave.
Mobile, AL 36604
(205) 649-9436

Madison Sobriety Club
c/o Tom Rix
130 Spinnaker Ridge Dr. #F228
Huntsville, AL 35824
tcrlx@lgr.com

Wiregrass Brewers Club
c/o John Sartwell
Route 3 Box 107
Ozark, AL 36360
(205) 299-3472

ALASKA

Great Northern Brewers
c/o Cindy Harrington
3705 Arctic Blvd. #1204
Anchorage, AK 99503
(907) 345-7408
docherty@arco.com

Matanuska Thunder Brewers
c/o Stuart Wells
453 N. Bonanza St.
Palmer, AK 99645
(907) 373-0885

Q & Q Brewers Guild
c/o Laurence Livingston
PO Box 2433
Homer, AK 99603-2433
(907) 235-2874

Zymurgists Borealis - The Home-Brewers of the North!
c/o Roger P. Penrod
939 High Grade Way
Fairbanks, AK 99712-2017
(907) 479-8795

ARIZONA


Arizona Brewers and Vintners Association
c/o Bruce E. Dahlgren
3713 W. Gelding Dr.
Phoenix, AZ 85023
(602) 843-4337

Arizona Society of Homebrewers
c/o Zach Hilgers
2322 S. Rogers St., Villa 61
Mesa, AZ 85202
(602) 491-8236

Brewmeisters Anonymous
c/o Mark Bellefeuille
2101 E. Indigo Brush Rd.
Phoenix, AZ 85048
(602) 759-9273
aaswr@asuvm.inre.asu.edu

Dead Brewer's Society
c/o Homebrewers Outpost
823 N. Humphreys
Flagstaff, AZ 86001
(520) 774-2499

Old Pueblo Homebrewers
c/o John Francisco
2635 W. Sandecker Pl.
Tucson, AZ 85745
(520) 743-7961
cisco@tabasco.ccit.arizona.edu
http://radon.gas.uug.arizona.edu:80/~jli
ddil/oph.html

Prescott Union of Brewers (PUB) 
220 Grove Ave.
Prescott, AZ 86301

Southern Arizona Natural Draughts (SAND) 
c/o The Home Brewery
4641 S. Hwy. 92
Sierra Vista, AZ 85635
(520) 378-4290

Suds of the Pioneers
c/o Slim Tighe
PO Box 144
Bisbee, AZ 85603
(602) 432-5242

Wort First!
c/o Perry Davidson
277 E. Kiowa St.
Flagstaff, AZ 86001-9546
(602) 774-7513

ARKANSAS


Arkansas Home Wine and Beer Makers Association
c/o Dr. Martin Ronis
7214 Apache Dr.
Little Rock, AR 72205
(501) 664-2774


Fayetteville Lovers of Pure Suds (FLOPS)
c/o John Griffiths
625 W. Dickson #9
Fayetteville, AR 72701
(501) 521-0456

Hell on the Border Homebrewers
c/o Tim Chilcott
PO Box 3
Fort Smith, AR 72902
(501) 783-5404

CALIFORNIA


Anderson Master Brewers' Association (AMBA)
c/o Jeff Lulenski
1252 Barry Ave. #5
Los Angeles, CA 90025

Antelope Valley Brewers 
c/o Jay D. McGough
6330 Prairie Ct.
Quartz Hill, CA 93536
(805) 722-8138
FAX (805) 943-8312
103331.1125@compuserve.com

Bakersfield Foam 
c/o Steven Gibbs
2821 "H" St.
Bakersfield, CA 93301
(805) 634-1144
FAX (805) 327-1923

Barley Bandits
c/o Dick Reese
218 S. Alice Way
Anaheim, CA 92806-4033
(714) 630-6527

Barley Literates
c/o Beer Crafts
950 W. San Marcos Blvd., Suite 1
San Marcos, CA 92069
(619) 788-7696

Bay Area Brew Crew 
c/o Mike Winslow
170 W. 25th Ave.
San Mateo, CA 94403
cmetzcus@hooked.net

Bay Area Mashers (BAM)
c/o Doug Ashcraft
5998 Alhambra Ave.
Oakland, CA 94611
(510) 339-1816

Big Ring Brew Club
c/o Scott Parr
1223 Carmel Court
Walnut Creek, CA 94596
(510) 939-1605

Bonita Avenue Brewers
c/o R. Graham Jones
1624 Bonita Ave.
Berkeley, CA 94709

Brew Angels
c/o Richard Wong
201 Erma Ave.
Stockton, CA 95207
(209) 477-7748

Brewbirds of Hoppiness
c/o Kelly Dunham
1229 Lerida Way
Pacifica, CA 94044
(415) 355-7143

Brewers Guild of the Green Dragon
c/o Tom Messenger
1424 Bayoaks Dr.
Los Osos, CA 93402

Brewers of the Central Coast (B.O.C.C.)
c/o Sean Portwood
470 Price St. #A2
Pismo Beach, CA 93449

Clan de Stein
PO Box 916
Camarillo, CA 93011-0916
(818) 706-1769

Crown of the Valley Brewing Society
c/o Kevin Valentine
6484 Alta Gracia Dr.
Tujunga, CA 91042
(818) 951-9782

Culinary Brewing Arts Association - Sacramento
c/o David Avalos, Ledenwolff Culinary Academy
3300 Stockton Blvd.
Sacramento, CA 95820
(916) 446-9426

Culinary Brewing Arts Association - San Francisco
c/o Mark Davis
5340 Paso Del Rio Way
Concord, CA 94521
(510) 672-6471

Dampf Brewers
c/o Racso Lesiam
PO Box 3593
Pinedale, CA 93650-3593

Delta Brewing Club
c/o Pat Meadows
24 Drake St.
Antioch, CA 94509
(510) 757-0976

Diablo Valley Homebrewers Guild
c/o Leo Smith
342 Ridgeview Dr.
Pleasant Hill, CA 94523
(510) 372-8060

Die Hopfen Koepfe Brew Club
c/o Dave Albright
18017 Skypark Circle, Suite K
Irvine, CA 92714
(714) 851-0798
diehopkopf@aol.com
http://users.aol.com/diehopkopf

Draught Board Home Brew Club
c/o Ken Koupal
10060 La Paz Ave.
San Ramon, CA 94583
(510) 487-4274
krkoupapa@pacbell.com

The Fermenters
c/o O'Shea Brewing Co.
27324 Camino Capistrano #114
Laguna Niguel, CA 92677
(714) 582-BREW

Foam on the Brain
c/o John DeGrazia
1487 Arthur Neal Court
Lemon Grove, CA 91945
(619) 697-4933

Foothill Fermenters
c/o Dan Bell
21332 Adamson Dr.
Grass Valley, CA 95949

Frantic Fermenters
c/o Bob Christopher
903 Oceana Blvd. #111
Pacifica, CA 94044-2341

GenenBrewers
c/o David Allison
460 Pt. San Bruno Ave. M/S #70
South San Francisco, CA 94080
(415) 225-5764
allison2@gene.com

Gold Country Brewers Association
c/o Donna Bettencourt
PO Box 160854
Sacramento, CA 95816
(916) 381-1300

Grain Damage
c/o Kurt Steinhebel
1928 W. Tedmar Ave.
Anaheim, CA 92804
(714) 774-4368

Hangtown Association of Zymurgy Enthusiasts (HAZE)
c/o Gary Sandler
PO Box 1662
Placerville, CA 95667
(916) 676-9722
sandler@spider.lloyd.com

Hetch Hetchy Hopheads
c/o Bucket of Suds
317 Old County Rd.
Belmont, CA 94002
(415) 637-9844

High Desert Barley Hoppers
c/o Don Miller
8755 Devon Ave.
Hesperia, CA 92345
(619) 947-7944

High Desert TRUBLEmakers
c/o Julie Carlile
1555 W. Ave. J-8, Apt. 287
Lancaster, CA 93534
(805) 723-0867

Hobbiton Imbibing Consortium
c/o Jeanpaul Powell
16150 Showlow Ln.
Lathrop, CA 95330

Humboldt Brewers Guild
c/o Brew Mart
1630 F St.
Eureka, CA 95501
(707) 445-4677

Inland Empire Brewers
c/o The Home Brewery
24723 Redlands Blvd., Suite F
San Bernardino, CA 92408
(909) 796-0699
FAX (909) 796-0620

Lagerheads Homebrewing Guild
c/o Bruce Garlinger
PO Box 651
Inyokern, CA 93527
(619) 378-4BRU

Long Beach Homebrewers
c/o Richard Lynn
5120 Faust Ave.
Lakewood, CA 90713-1924
(310) 867-8412
73767,2212

MAD BREWERS - Bakersfield
c/o Mike Shue
9118 Leslie Deann Ct.
Bakersfield, CA 93312
(805) 399-8936

MAD BREWERS - Napa/Sonoma
c/o Mark Ruhe
5226 Walnut Rd.
Vacaville, CA 95687
(707) 448-8926
mtruhe@ucdavis.edu

Maltose Falcons Homebrewing Society
c/o Brian Vessa
22836 Ventura Blvd. #2
Woodland Hills, CA 91364
(310) 558-8458
bav@netcome.com
http://www.silicon.net/~homebrew

Marin Home Brewers Club
c/o Scott McMartin
1809 Larkspur Landing Circle
Larkspur, CA 94939
(415) 332-8804

Marin Society of Homebrewers (MASH)
c/o Mike Riddle
2 Mt. Rainier Dr.
San Rafael, CA 94903
(415) 472-3390

Monterey Beer Nuts
c/o Jim Morrison
511 Grand Ave.
Pacific Grove, CA 93950
(408) 375-0950

Pacific Gravity
c/o Culver City Home Brewing Supply
4358 1/2 Sepulveda Blvd.
Culver City, CA 90230
(310) 397-3453
FAX (310) 397-6913
cchbs@soho.ios.com
http://www3.ios.com/~cchbs/pg.html

Parrots Ferry Homebrew Club
c/o Al Lemke
19326 Grand View Ct.
Sonoma, CA 95370
(209) 533-3497

Quality Ale & Fermentation Fraternity (QUAFF)
c/o Rich Link, Beer & Wine Crafts
460 Fletcher Pkwy.
El Cajon, CA 92020
(619) 447-9191

Redwood Coast Brewers Association
c/o Ken Sommers
445 La Fonda Ave.
Santa Cruz, CA 95065
(408) 423-7183

Riverside Homebrew Crew
c/o John Walker
6212 Tarragona Dr.
Riverside, CA 92509
(909) 683-5050

San Andreas Malts
c/o Russ Wigglesworth
PO Box 884661
San Francisco, CA 94188-4661
(415) 885-1878
rad_equipment@radmac1.ucsf.edu

San Joaquin Worthogs
c/o Tom Pope
5702 W. Wathen
Fresno, CA 93722

San Luis Obispo Brewing Society (SLOBS)
c/o Howard Gootkin
1568 Frambuesa Dr.
San Luis Obispo, CA 93405
(805) 541-0713

Santa Barbara County Home Brewers Association
c/o Kyle Carrell
PO Box 597
Los Olivos, CA 93441-0597
(805) 686-0730
73160,1441

Santa Clara Valley Brewers Association
c/o Bob Hight
433 California St.
Santa Clara, CA 95050
(408) 247-6853

Shasta County Sudsers
c/o Raymond Ault
4621 Balls Ferry Rd.
Anderson, CA 96007
(916) 365-6284

Society of Barley Engineers
c/o Andy Gamelin
1218 Melrose Way
Vista, CA 92083
(619) 631-8210

Some of Upland's Diversified Zymurgists (SUDZ)
c/o Steve Ernst
1009 College Ave.
Claremont, CA 91711

Sonoma Beerocrats
c/o Nancy Vineyard
840 Piner Rd. #14
Santa Rosa, CA 95403
(707) 544-2520

Sons O' Beaches Brewers
c/o Jeffrey L. Lee
2301 Valley Dr.
Hermosa Beach, CA 90254
(310) 222-3791
FAX (310) 533-1158
JEFFLEE@HARBOR3.HUMC.EDU

South San Diego Brewers and Vintners Club
c/o Jarrod Bell
661 Gretchen Rd.
Chula Vista, CA 91910
(619) 427-2474

Stanislaus Area Association of Zymurgists
c/o Micah Millspaw
309 S. 6th Ave.
Oakdale, CA 95361-4032
(209) 847-9706

Stanislaus Hoppy Cappers
c/o Wayne Baker
1907 Central Ave.
Ceres, CA 95307
(209) 538-2739

Strand Brewers Club
c/o Steve Fafard
21726 Evalyn Ave.
Torrance, CA 90503
(310) 543-1539
75654.3055@compuserve.com

Susanville Homebrew Institute of Technology
c/o Larry Anthony
PO Box 524
Janesville, CA 96114-0524

Tahoe Homebrewer's Club (THC)
PO Box 624337
South Lake Tahoe, CA 96154-4337

Temecula Valley Homebrewers Association
c/o Brian Baber
31677 Courte Padrera
Temecula, CA 92592
(909) 676-6270

Underground Spirits Association (USA)
c/o The Coddish
8343 Quartz Ave.
Winnetka, CA 91306
(818) 998-1637

Wild Yeast Culture
c/o Gareth Gordon
641 Paloma Ave.
Oakland, CA 94612
(510) 893-0385

Worts of Wisdom
c/o Richard Allen
3389 Creighton Pl.
Santa Clara, CA 95051-1501
(408) 247-6010

Yolo County Homebrewers
c/o Vern Wolff
PO Box 538
Esparto, CA 95627
(916) 787-3615

COLORADO

Bierewolves of Loveland
c/o Bob Green
PO Box 411
Loveland, CO 80537
FAX (303) 663-1557

Brownion Colony
c/o Beth D. @ Brew Ha Ha
708 8th St.
Greeley, CO 80631
(303) 356-1566

Colorado Beer Club
c/o John Myers
5500 S. Forest Ln.
Greenwood Village, CO 80121

Crested Butte Brewskiers
c/o Graham Ullrich
PO Box 2045
Crested Butte, CO 81224-2045
(303) 349-5969

Deep Wort Brew Club
c/o Dale Morgan
1410 Winding Ridge Terrace
Colorado Springs, CO 80919
(719) 522-0861

Fermentations of Aurora Mashers (FOAM)
c/o Jesse Boone
3700 E. Jewel Ave., #B-526
Denver, CO 80210
(303) 782-0993
jboone@du.edu

Foam on the Range
c/o Joe Pardee
7588 S. Quay Ct.
Littleton, CO 80123
(303) 973-9860

Grateful Head Homebrew Club
c/o West Slope Homebrewing
111 S. 6th St.
Grand Junction, CO 81501
(303) 244-8947

Hop Barley & The Alers
PO Box 17935
Boulder, CO 80308-0935

Hops Around the Rock
c/o Bob Burns
45587 Summit Rd.
Parker, CO 80134
(303) 841-8853

Keg Ran Out Club (KROC)
PO Box 1162
Broomfield, CO 80020
(303) 465-1776

Louthan Street Deadbeats
c/o Jezebel Swartzensterne
6547 S. Louthan St.
Littleton, CO 80120
(303) 798-2953

Mash Tongues
c/o Brian J. Walter
618 Tyler St.
Fort Collins, CO 80521-3129
(303) 493-2586

One Brew Over the Cuckoos Nest (O.B.O.C.N.)
c/o Dave Lipitz
1614 E. Orman
Pueblo, CO 81004
(719) 564-1611

Rainbrewers
c/o Russ Staska
433 E. Baylor St.
Fort Collins, CO 98525

The TRIBE

c/o Roger Grow
524 Pebble Beach Ave.
Johnstown, CO 80534
(970) 673-7760
grow@sumatra.mcae.stortek.com
http://www.csd.net/~hophead/tribe.ht

Unfermentables

c/o Chris Galvin, Wine and Hop Shop
705 E. 6th Ave.
Denver, CO 80203
(303) 831-7229

The Weissenheimers

c/o Herschal
4422 1/2 Delaware St.
Denver, CO 80216
BREWHERSCH@aol.com

Weiz Guys B.C.

c/o Kevin Irwin
502 Sherri Dr.
Loveland, CO 80537
(970) 669-1838

Yampa Valley Yeast Ranchers

Tom Williams
PO Box 775868
Steamboat Springs, CO 80477

CONNECTICUT**Beer Brewers of Central Connecticut**

c/o Judy Lawrence
1550 Randolph Rd.
Middletown, CT 06457
(203) 346-5440

Connecticut Beernutts

c/o Steve Henry
14 Waverly Ave. #2
Portland, CT 06480-1842

Hop River Brewers

c/o Richard Rosen
265 Route 6
Andover, CT 06232
(203) 742-5465

Sanderflohansontappanberg Brew Club

c/o Mark Floberg
27 Bonita Dr.
Huntington, CT 06484

Stratford Union of Dedicated Zymologists

c/o Jim Miklos
55 Kings College Pl.
Stratford, CT 06497
(203) 375-5414
FAX (203) 791-3795

Shoreline Suds

c/o Jim Leitch
53 Wellsweep Dr.
Madison, CT 06443
(516) 622-3121

Those Crazy Brewers (a bunch of guys & a couple wenches)

c/o Elizabeth Pryor
34 Sachem Rd.
Southbury, CT 06488
(203) 264-4958

UConn Zymurgy Club

c/o Robert Vieth, Box U-139
University of Connecticut
Storrs, CT 06269

Underground Brewers of Connecticut

c/o Victor Gubinski
44 Lalley Blvd.
Fairfield, CT 06430
(203) 259-8693

Whale of an Ale Brewers Association

c/o Samira Hakki
68 Ridge Hill Rd.
Oakdale, CT 06370

DELAWARE**First State Brewers**

c/o Scott Bieher
407 Pheasant Circle
Bear, DE 19701
(302) 834-8747

Tri-State Brewers

c/o Mark Warrington
PO Box 334
Rockland, DE 19732-0334
warringt@esvax.dnet.dupont.com
76322.2102

FLORIDA**2 Dudes That Brew**

c/o Peter Coleman
317 Citrus Dr.
Nokomis, FL 34275
(912) 876-0556

Bradenton Brewski's

c/o Chet Kedzierski
PO Box 51
Bradenton, FL 34206
(813) 747-2437

Bull Brewing Company

2225 E. 131st Ave. #3102
Tampa, FL 33612
ccampbel@sunflash.eng.usf.edu

Caloosa Hop Heads

c/o Gary Coucher
826 S.E. 41st St.
Cape Coral, FL 33904
(813) 549-7567

Central Florida Homebrewers

c/o Ronald C. Bach
1190 Trotwood Blvd.
Winter Springs, FL 32708
(407) 696-2738

Escambia Bay Brewers

c/o Tom Walpole
2240 Riddle Rd.
Cantonment, FL 32533

Florida Suncoast ThunderBrewers

c/o Matthew Wiseman
16326 Gulf Blvd. #D-14
Redington Beach, FL 33708
(813) 867-3693
71543.763@compuserve.com

HBU (HomeBrewers Underground)

c/o Gary Gutowski
238 Bowles Crescent
Eglin AFB, FL 32542
(904) 678-2491

Hogtowne Brewers

c/o Ray Badowski
21 S.W. 2nd St.
Gainesville, FL 32601-6237
(904) 375-7949

Malt Aficionados**Society of Hernando (MASH)**

c/o Joe Johnston
416 S. Broad St.
Brooksville, FL 34601
(904) 799-3004

North Florida Brewers League

c/o Sarah Bridegroom
1801 B Fairlane Rd.
Tallahassee, FL 32303

Northeast Florida Society of Brewers

c/o Bob Davis
7 Park Terrace Dr.
St. Augustine, FL 32084
(904) 824-5252

Nude Brewers

c/o The Hogtown Brewer
21 S.W. 2nd St.
Gainesville, FL 32601
(904) 375-3772

Palm Beach Draughtsmen

c/o Stephan Vernet
4734 Okeechobee Blvd., #F5
West Palm Beach, FL 33417-4626
(407) 686-4019

South Florida Homebrewers

c/o Lauren or Bryan Hemedinger
441 S. State Rd. 7
Margate, FL 33068-1934
(305) 968-3709
FAX (305) 968-3591

Spacecoast Associates for the Advancement of Zymurgy (SAAZ)

c/o Billy (Gizmo) Kendrick
6450 Banks Ave.
Cocoa, FL 32927-3178

Tampa Bay BEERS**(Beer Enthusiasts Enjoying Real Suds)**

c/o Mark Stober
PO Box 24691
Tampa, FL 33623-4691
(813) 977-0141
Marksto@aol.com



Rhody Bloviates "Chumba" George Lawrence (front), Mike and Laura O'Connell, Gil Da Ponte, Dan Breton and Len Lemieux (second row, from left), Jeff McCrave, John Szymanski, Ron Racine and club President Leon Dudley (back row, from left) at the January 1996 meeting.

Treasure Coast Brewmasters

c/o Ron Polzin
4446 S.E. Federal Hwy.
Stuart, FL 34997-5746
(407) 546-9108

GEORGIA**Ale Atlanta**

c/o Coby Glass
1852 Aaron Ct.
Powder Springs, GA 30073
(404) 943-5583

Brew-52's

c/o Robert Hall
450 Ruth St.
Athens, GA 30601
(404) 369-1285

Chicken City Ale Raisers

6252 Brookfield Dr.
Murrayville, GA 30564

Clergy of Zymurgy of the Golden Isles

c/o Steve Pechin
800 Howe St.
Brunswick, GA 31520-7340
(912) 267-6911

Covert Hops Society

c/o David Feldman
5150 Vernon Springs Trail N.
Atlanta, GA 30327
(404) 377-3024

Lagerheads von Atlanta (LAVA)

c/o Heather Alonso
5010 Centerhill Church Rd.
Loganville, GA 30249
(404) 466-0378

Savannah Brewers' League

c/o Klugh Kennedy
105 Lagoon View Crossing
Savannah, GA 31410
(912) 897-3619

South Atlanta**Association of Zymurgists (SAAZ)**

c/o Brian Kelly
105-B N. 85 Pkwy.
Fayetteville, GA 30214
(404) 719-0222

HAWAII**Deja Brews****Homebrewing Club of Kaua'i**

4915 Nonou Rd.
Kapaa, HI 96746
(808) 823-8929

Haleakala Homebrew Hui

c/o John Andrews
108 Mikaele Pl.
Kula, HI 96790
(808) 878-6516

Hawaiian Homebrewers Association

41-610 Nonokio St.
Waimanalo, HI 96795
(808) 259-6884
FAX (808) 259-6755
brew@lava.net
http://www.lava.net/~brew

IDAHO**Hell's Canyon Homebrewers**

PO Box 931
Lewiston, ID 83501
(509) 243-4593

High Desert Brewers Association

c/o Carrie Getty
2845 Holly Pl.
Idaho Falls, ID 83402-4631
(208) 524-0970

Homebrewers of the Palouse

c/o Layne Davis
PO Box 371
Palouse, WA
(208) 882-4976

Ida-Quaffer**Homebrewers Association**

c/o Editor
3894 W. State St.
Boise, ID 83703
(208) 344-5141

Magic Valley Brew Crüe (MVBC)

c/o R. Jenó
1285 Falls Ave. W.
Twin Falls, ID 83301

Panhandle U Brew Society (PUBS)

c/o Linda Hetrick
2116 James Crowe Dr.
Coeur d'Alene, ID 83814
(208) 772-7019

ILLINOIS**Association of Bloomington/****Normal Brewers (ABNORMAL)**

c/o Tony McCauley
RR 9, Box 42
Normal, IL 61761
(309) 452-1084

Beer Nuts

c/o Eric Dallman
4516 Stonewall Ave.
Downers Grove, IL 60515
(708) 271-0843
ericd@prairienet.org

**Boneyard Union
of Zymurgical Zealots (BUZZ)**

c/o Joe Formanek
512 Dogwood
Champaign, IL 61821
(217) 328-6858
<http://starfire.ne.vivc.edu/buzz/home.html>

Brewers of South Suburbia (BOSS)

c/o Steve Kamp
PO Box 461
Monee, IL 60449
(708) KEG-BEER

Brewers On the Bluff

c/o Lake Bluff Park District, Steve
Howard
PO Box 95
Lake Bluff, IL 60044
(708) 234-4150

Central Illinois Brewer's Association

c/o Mark Kellums
335 N. Main
Mt. Zion, IL 62549
(217) 864-4216

Chicago Beer Society

PO Box 1057
La Grange Park, IL 60525
(708) 692-BEER
FAX (708) 692-7537
<http://www.mcs.com/~shamburg/cbs/cbshome.html>

Club Wort

c/o Jim Thommes
5504 Deerfield Ln.
Rolling Meadows, IL 60008
(708) 397-7648

Egyptian Zymotic (EZ) Brewers

c/o Doug Diggle
514 S. Illinois Ave.
Carbondale, IL 62901
(618) 457-3513

Fermenters at Large

Mike Hennessy
1359 Portsmouth Ct.
Carol Stream, IL 60188
(708) 830-1210

Forest City Brewers

c/o Roger Hosfeld
801 N. Rockford Ave.
Rockford, IL 61107
(815) 397-3767

Headhunters Brewing Club

c/o Greg Lawrence
4 S. 245 Wiltshire Ln.
Sugar Grove, IL 60554
(708) 557-2523

Home Beers Racketeers

c/o Gary Burns
PO Box 203
Kansas, IL 61933
(217) 948-5365

**Homebrewers' Pride
of the Southside (HOPS)**

c/o Jim Kube
2953 S. Emerald Ave.
Chicago, IL 60616
(312) 842-2337
ZQMP47A@prodigy.com

Kankakee Area Beiraucrats

c/o Steve Bell
4 Old Farm South Ct.
Bradley, IL 60915
(815) 937-0974

Lagerhead Brew Club

c/o Chuck Aleshire
102 Yale Ct.
Shorewood, IL 60436
(815) 729-2295

**Mississippi Unquenchable
Grail Zymurgists (MUGZ)**

c/o Jeff Grillo
1422 32nd St.
Rock Island, IL 61201
(309) 786-2546
72064.1256@compuserve.com

Northern Illinois Better Brewers

c/o Jon Huettel
2316 Oak St.
Northbrook, IL 60062-5220
(708) 498-6154

**Northwest Amateur
Wine and Beermakers Guild**

c/o Roy J. Horton
1419 Redwood Dr.
Mt. Prospect, IL 60056
(708) 439-4525

Prairie Schooners

c/o Karl Menninger
PO Box 10082
Springfield, IL 62791-0082
(217) 522-1906

Silverado Homebrew Club

c/o Terry Richardson
405 S. 12th Ave.
St. Charles, IL 60174
(708) 584-8254

Urban Knives of Grain (UKG)

c/o Mike Montgomery
13446 Golden Meadow Dr.
Plainfield, IL 60544
(815) 439-2149
mlm01@intgpl.ih.att.com

Weinkeller Beer Enthusiasts

c/o Bob Ward
9114 W. 140th St. N.E., Suite 3
Orland Park, IL 60462
(708) 403-6666

The Weisse Guys

c/o Samantha Lynn's
117 W. Washington St.
Washington, IL 60450
(815) 941-0366

Wort-Mongers of Eastern Illinois

c/o Ken Knoop,
The Grape N Grain Gourmet
623 Monroe St.
Charleston, IL 61920
(217) 348-8077

INDIANA**Bull and Stump Brew Club**

c/o Rob Reed
1420 W. 350 N.
Kokomo, IN 46901
(317) 452-6371

Duneland Homebrewers**Association: The Retentive Head Society**

c/o Alonso Villarreal, President
430 East U.S. Hwy. 6
Valparaiso, IN 46383
(219) 947-7802

Fermenters Of Special Southern**Indiana Libations Society (FOSSILS)**

c/o Roger Baylor
PO Box 6880
New Albany, IN 47151-6880

Foam Blowers of Indiana (FBI)

c/o Paul Edwards
1310 E. Kessler Blvd.
Indianapolis, IN 46220-2745
pedwards@iquest.net

Lafayette Brewing Bovinophiles

c/o Russel H. Stwalley
512 Main St.
Lafayette, IN 47901
(317) 742-2696

St. Joe Valley Brewers

c/o Jim Herter
122 N. Saint Peter St., Apt. 2
South Bend, IN 46617
(219) 287-4599
sjvbrew@raptor.lmc.cc.mi.us

Strange Brewers

c/o Jim Kirk
3848 S. Sherman Dr.
Indianapolis, IN 46237
(317) 786-0464
captain@indy.net

Tippecanoe Homebrewers Circle

c/o Richard Fudge
Box 59
Battle Ground, IN 47920
(317) 567-2478

Wabash Valley**Vintners' & Homebrewers' Club**

c/o Neil Flatter
913 7th Ave.
Terre Haute, IN 47807-1109
(812) 235-2682

Wells County Homebrewers Club**(WELCOME)**

c/o Jim Craig, Secretary/Treasurer
1121 Honeysuckle
Bluffton, IN 46714
(219) 824-0387

IOWA**Brew Bobs**

c/o Scott Lage
414 S. Moore St.
Algona, IA 50511
(515) 295-7392

**Cedar Rapids Association of Zymurgy,
Yeastology and Homebrewers****(CRAZY Homebrewers)**

c/o Mike Snyder
PO Box 5922
Cedar Rapids, IA 52406-5922
(319) 393-1219
spsbeer@netins.net

Heartland Homebrew Club

c/o Gary Porter
RR 4 Box 112
Grinnell, IA 50112-9143
(515) 236-7487

The Honorable Iowa River Society**of Talented Yeastmasters (THIRSTY)**

c/o Michael Hanson
950 23rd Ave. Pl.
Coralville, IA 52241

M.U.G.Z.

c/o Jan Van Ommen
502 W. Garfield St.
Davenport, IA 52803-1417

North Iowa Wine Club

c/o Laurence Fredricksen
24 Bayside Ave., Route 1 Box 174E
Clear Lake, IA 50428
(515) 357-2290

Raccoon River Brewers Association

c/o Mark Opsal
400 Jordan Dr.
West Des Moines, IA 50265

KANSAS**Derby Brew Club**

c/o Roger Clark
942 Morrison
Derby, KS 67037
(316) 788-5327

Greater Topeka Hall of Foamers

c/o Kevin Foga
5431 S.W. 18th St.
Topeka, KS 66604-3616
(913) 233-6717

Kansas City Beer Meisters

c/o Alberta Rager
8206 Bell Rd.
Lenexa, KS 66219-1631
(913) 894-9131

Krausen Boys

c/o Patrick Kennedy
9117 W. 116th St.
Overland Park, KS 66210
(913) 441-0353

Little Apple Brew Crew

c/o Brent L. Benkelman
3202 Willowpond Ln.
Manhattan, KS 66502
(913) 539-4762

The Musty Worthogs

c/o Cliff Wyrick
539 E. Santa Fe
Olathe, KS 66061
(913) 764-5717

Rapscallions of Wichita

c/o Michael A. Romine
548 Redbarn
Wichita, KS 67212
(316) 729-5882

S.E. Kansas**Homebrewers Association**

c/o Ben Fox
611 N. Mulberry
Eureka, KS 67045
(316) 583-7256

Salina Original**Tasting Society Homebrew Club**

c/o Jim Huskey
319 Russell Ave.
Salina, KS 67401

Weiss Squad Homebrew of Liberal

c/o Jim Ashton
2441 Lilac Dr.
Liberal, KS 67901
jashton@brighttok.net

KENTUCKY**Hoppertunity Knox**

c/o Brandon Zupancic
5808-A Billhymer
Fort Knox, KY 40121
(502) 942-8817
76612.2516@compuserve.com

Kentucky Brewing Society

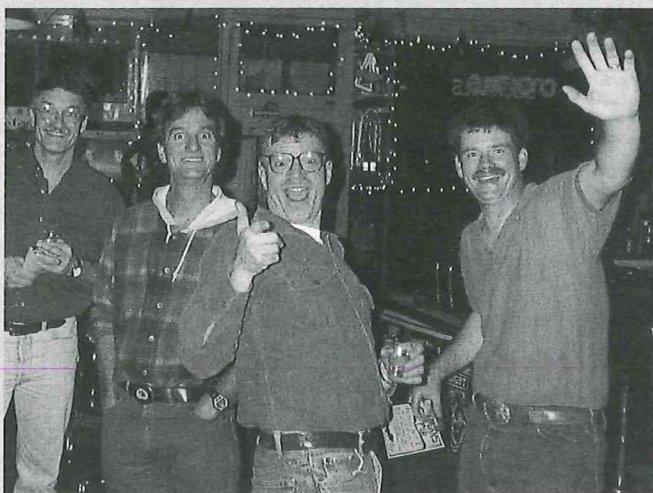
c/o Mike Christensen
3500 Warwick Dr. #42
Lexington, KY 40517
(606) 272-6348
MikeC606@AOL.Com

LAGERS, Ltd.

PO Box 5384
Louisville, KY 40255-0384

Lone Wolf Brewers

c/o Michael Berheide
120 Delwood Ave.
Berea, KY 40403
(606) 986-2647



Tom Urquart, Dave Kendrick, Will Tool and Ray Waller show that the Hell's Canyon Homebrewers know how to have a good time.

LOUISIANA

Baton Rouge Enzyme Wrights (BREW)
c/o Jim Waits
1818 Wooddale Blvd. #18
Baton Rouge, LA 70806
(504) 926-BEER

Crescent City Homebrewers
c/o Louie Marino
2001 Neyrey Dr.
Metairie, LA 70001
(504) 831-2026

Dead Yeast Society
c/o Jim Boudreaux
204 Montrose Ave.
Lafayette, LA 70503-3822
(318) 981-4072

Mystic Krewe of Brew
c/o Lee Hardin
67038 Emerson St.
Mandeville, LA 20471
(504) 893-2165
FAX (504) 561-4912
dosequis@neosoft.com
<http://www.neosoft.com/~dosequis/homepage.html>

**No name nO Blame
homebrew Society (No B.S.)**
c/o Karl Menzer
402 W. 3rd St.
Thibodaux, LA 70301-3014
(504) 446-6774

Redstick Brewmasters
c/o Erick Swenson
628 Centenary St.
Baton Rouge, LA 70808
(504) 769-2177
bcornell@tyrell.net
<http://www.tyrell.net/~bcornell/rsb.html>

**Shreveport Urban
Diastatic Spargers (SUDS)**
c/o Bob Carbone
3956 Fire Tower Rd.
Grand Cane, LA 71032
(318) 858-2219

MAINE

BrewSpeak
c/o Stephen Hodgdon
297 Route 236
Beverly, ME 03901
(207) 384-3278

The Down Yeasters
c/o Dr. John B. Macauley
600 Main St.
Bar Harbor, ME 04609
(207) 288-3371 x1523
FAX (207) 288-2879
jbm@aretha.jax.org

Maine Ale & Lager Tasters (MALT)
c/o Ron Bouffard
PO Box 464
Topsham, ME 04086-0464
(207) 666-8888

Raymond Ale Taster's Society (RATS)
c/o Craig Stephenson, Raymond Homebrew and Zymurgy Shop
PO Box 362
Raymond, ME 04071-0362
(207) 655-3719

Worthog Homebrewing Club
c/o Greg Blanchette
Box 4255
Dresden, ME 04342
(207) 737-8174

MARYLAND

The Aleing Sailors Homebrew Club
c/o Dan or Kelly, Chesapeake Brewing Co.
1930 Lincoln Dr., Unit C
Annapolis, MD 21401
(410) 268-0450

Bay Country Brewers
c/o Reid Woolford
243 Bynum Ridge Rd.
Forest Hill, MD 21050
(410) 485-4854

Chesapeake Real Ale Brewers (CRABS)
c/o David Nesbitt
5408 White Mane
Columbia, MD 21045
(410) 997-0983

Cross Street Irregulars
c/o Hugh Sisson
36 E. Cross St.
Baltimore, MD 21230
(410) 539-2093

Frederick Original Ale Makers (FOAM)
c/o Bob Frank
111 S. Carrol St.
Frederick, MD 21701
(301) 663-4491

Gaithersburg Area Brewing Society (GABS)
c/o Bill Lawrence
762 Tiffany Dr.
Gaithersburg, MD 20878
kreding@custom-web.com
<http://www.custom-web.com/gabs/>

**Libation Association
of Northern Maryland**
c/o Tim Harris
586 D Renee Dr.
Joppa, MD 21085

**Maryland Ale
and Lager Technicians (MALT)**
c/o Tim Hardman
2200 Notely Ln.
Crofton, MD 21114
(410) 721-7462

Midnight Homebrewers' League
c/o Stephen M. Kranz
741 Windsor Dr.
Westminster, MD 21158
(410) 840-9244

People's Ale and Lager Society (PALS)
c/o Ben Schwalb
1609 Manning Rd.
Glen Burnie, MD 21061

Powder Keg Brew Club
c/o Steve Gianacopolos
Naval Surface Warfare Center —
Indian Head Div.
Indian Head, MD 20640

**Southern Maryland Association of
Superior Homebrewers (SMASH)**
c/o Gerald Elder
47 Airport View Dr.
Hollywood, MD 20636-9760

Suds & Ciphers
c/o Eric Marzewski
1463 Graham Farm Circle
Severn, MD 21144

Summer Hill Brewers
c/o Bert Belote
222 Little New York Rd.
Rising Sun, MD 21911
(410) 658-2865

Terrapin Brewers Association
RR2 Lot 5B
La Plata, MD 20646-9802
(301) 932-1706

**The Yeastern Shore
Brewers of Delmarva**
c/o Stephen L. Pratt
PO Box 342
Upper Fairmont, MD 21867

MASSACHUSETTS

Ana-Lagers
c/o Steve Robinson
89 Bruin Hill Rd.
North Andover, MA 01845
(508) 691-5238
steve.robinson@analag.com

Barleyhoppers Brewing Club
c/o Mark Larrow
154 King St.
Northampton, MA 01060
(413) 586-0150

Berkshire Headhunters
c/o Daniel Stansfield
North Adams, MA 01247
(413) 663-8988

Biermeister Brewers Club
c/o Eric Marzewski
706 Chelmsford St. #301
Lowell, MA 01851

Boston Brew-Ins
c/o George Curran
16 Cutter Ave. #3
Somerville, MA 02144

Boston Wort Processors
c/o John Dittman
PO Box 397198
Cambridge, MA 02139-7198
(617) 547-5113 x900
jason@world.std.com
<http://www.rsi.com/wort/>

Cape Cod Lager and Ale Makers (CCLAM)
c/o Carl Laman
11 Pleasant Park Rd.
Harwich, MA 02645
(508) 432-9524

Colonial Brewers
c/o Bill Lytle
Box 229
Brookfield, MA 01506

Gambrinus Society
c/o Herbert Holmes
92 Marsh Rd.
Barre, MA 01005
(508) 355-2753

Hampshire Brewing Collective
c/o Rob Young
Hampshire College
PO Box 1527
Amherst, MA 01002
(413) 549-7604

Homebrew at Sloan
c/o Greg Hennessy,
MIT Sloan School of Management
50 Memorial Dr.
Cambridge, MA 02139
(617) 628-2309

IBIS
c/o Wade Krull
32A Cherry Hill Dr.
Danvers, MA 01923
(508) 777-4247

Merrimack Valley Brewers
c/o Gregg C. Cummings
15 Jere Rd.
Wilmington, MA 01887
(508) 658-5324

Missile Mashers
c/o Edward Bardsley
38 Hillside Ave.
Lawrence, MA 01841
(508) 681-9064

North Shore Brewers
c/o Robert B. Murphy
9 1/2 Bisson St.
Beverly, MA 01915
(508) 921-7352

South Shore Brew Club
c/o Randy Reed
32 Copperwood Dr.
Stoughton, MA 02072
(617) 341-8170

Spinal Taps
c/o Dr. Michael Biblyk
252 Auburndale Ave.
Auburndale, MA 02166-1619
(617) 527-4255

Stellar Brewers
c/o Bruce Susel
197 Main St.
Marlboro, MA 01752
(508) 460-5050

Trubadours
c/o Dan Harris
12 Roosevelt Ave.
Holyoke, MA 01040
(413) 532-4457

Valley Fermenters
c/o Charlie Olchowski
PO Box 988
Greenfield, MA 01302-0988
(413) 773-5920

Worry Worts
c/o Glen Tremblay
139 South St.
Upton, MA 01568
(508) 529-6694

MICHIGAN

Ann Arbor Brewers Guild
c/o Rolf Wucherer
1942 Steere Pl.
Ann Arbor, MI 48104
(313) 663-8196
spencer@umich.edu
<http://guraldi.hgp.med.umich.edu:80/Beer/AABG/>

Brew Monkees
c/o Paul May
904 Adams Rd.
Frankfort, MI 49635
(616) 352-5210
FAX (616) 352-5338

Brewers on the Lake
c/o Bob Schneider
6382 127th Ave.
Fennville, MI 49408
(616) 857-1283

Capital City Brew Crew
c/o Jim Booth
412 Everett Dr.
Lansing, MI 48915
(517) 371-1754

Cass River Home Brewers Club
c/o John Jackson
14098 Landings Way
Fenton, MI 48430
(810) 629-4804

Detroit Car Boys
c/o Ed Marsh
PO Box 92418
Warren, MI 48092-0418

Downriver Brewers Guild
c/o The Brew-It Yourself Center
13262 Northline Rd.
Southgate, MI 48195

**Fermental Order
of Renaissance Draughtsmen**
c/o Rich Byrnes
30972 Cousino
Warren, MI 48092
(313) 558-9844
Rich.Byrnes@E-mail.com
<http://www.oenline.com/~pbabcock>

Firkin Homerackers Guild
c/o Michael J. Fila
2628 Linden St.
East Lansing, MI 48823
(517) 332-5347

**Great Lakes Brewers,
Michigan Chapter No. 1**
c/o Joe Gedmen
34632 Hivley
Westland, MI 48185
(313) 721-6288

Hogshead Brewers
c/o D.J. Downs
1994 A Woodward Ave. #215
Bloomfield, MI 48304
(313) 362-4466

**Kalamazoo Libation
Organization of Brewers (KLOB)**
1608 Jefferson Ave.
Kalamazoo, MI 49006-3136
(616) 381-3266
tomf775202@aol.com

**Keweenaw Real Ale Enthusiasts
United for Serious Experimentation
in Naturally-Effervescent Refreshment
Science (KRAEUSENERS)**
c/o Daniel Butler-Ehle
Route 1, Box 27
Calumet, MI 49913
(906) 337-3525

**Michiana Omnifarious Nomadic
Krauseners & Spargers (MONKS)**
c/o Todd Keller
1350 Ferry St.
Niles, MI 49120
(616) 683-9162

Mid-Michigan Brewers Union
c/o Martin Woods
1404 Westerrace Dr.
Flint, MI 48532
(810) 733-1870

No Restraints Brew Club
c/o Ronald Rucins
54218 Folklore Dr.
Shelby Township, MI 48316

Pontiac Brewing Tribe
c/o Craig Spicer
5620 Hillsboro Rd.
Davisburg, MI 48350
(810) 625-6093
kegg@usa.pipeline.com

Port Elizabeth Brewers Guild
c/o Mike Kelly
PO Box 1452
Caseville, MI 48725

Prime Time Brewers
419 Michigan St. N.E.
Grand Rapids, MI 49503

Upper Peninsula Brewer's Guild (UPBG)
c/o Brian Murphy
111 White St.
Hancock, MI 49930
(906) 482-4708
brmurphy@mtu.edu

MINNESOTA

Big Muddy Homebrewers
c/o Randall Thompson
3648 37th Ave. S.
Minneapolis, MN 55406
(612) 624-0906
billodo@rosemount.com

Boreal Bottlers
c/o Jerry Bourbonnais
Route 6 Box 236
Bemidji, MN 56601
(218) 586-2488

Buffalo Ridge Homebrewers
c/o Joel Johnson
207 W. Elm
Luverne, MN 56156
(507) 283-2027

Cloudy Town Brewers
c/o Bruce LeBlanc
1190 Flamewood Dr.
Sauk Rapids, MN 56379
(612) 251-0229

Grin and Brew It
c/o Mark Olson
502 6th St. S.W.
Willmar, MN 56201
(612) 235-3345

Minnesota homeBrewers Association (MhBA)
c/o Steve Platz
3631 Woodland Trail
Eagan, MN 55123
(612) 683-5268
platz@cray.com

Minnesota Mashers
c/o Rex Houseman
14912 Summit Oaks Circle
Burnsville, MN 55337

Minnesota Timberworts
c/o Leo Vitt
720 15 St. N.E.
Rochester, MN 55906
(507) 285-00468
vitt@rchland.vnet.ibm.com

Mobius Microbrewers
c/o Mark W. Peery
400 Wilshire Dr. S.
Minnetonka, MN 55305-1560
(612) 591-1602


Northern Ale Stars Homebrewers Guild
c/o Don Hoag
5426 Beartrap Rd.
Saginaw, MN 55779
(218) 729-6302

The Redwing Homebrew Club — Northern Lights and Stouts
c/o Art McLeran
1622 W. 5th St.
Redwing, MN 55066
(612) 388-4984

Rum River Wort Hogs
c/o Tim Curran
17640 Eaton St. N.W.
Ramsey, MN 55303
(612) 441-4533

South Metro Wort Mongers
c/o Deb Nelson
14386 Embury Ct.
Apple Valley, MN 55124
(612) 893-6502

We Are: Men of Our Wort
c/o Dave Ziegler
RR1 Box 118
Kasson, MN 55944


Yeasty Boy Homebrew Club 
3912 Sibley Memorial Hwy.
Eagan, MN 55122
(612) 687-0121

MISSISSIPPI

Gulf Coast Brews Brothers
c/o Wade Wallinger
801 Swordfish St.
Pascagoula, MS 39581
(601) 762-0226
http://www.he.tdl.com/~murray/gcbb.html

Proud Brewing Rebels (PBR)
c/o Charles Gutberlet III
1761 Warrenton Rd.
Vicksburg, MS 39180
(601) 638-2144

MISSOURI

Brew Your Own Beer Club of Central Missouri (BYOB) 
c/o Chris Koetting
1613 Honeysuckle Rd.
Sedalia, MO 65301
(816) 827-1083

K. C. Cú Mheadha
c/o David L. Strange
4311 Charlotte
Kansas City, MO 64110
(816) 531-7240

Missouri Association of Serious Homebrewers (MASH)
c/o Michael Muller
1316 Eastwood
Rolla, MO 65401
(314) 364-6422

Missouri Winemaking Society
c/o Paul Hendricks
2018 Norma Ln.
St. Louis, MO 63138

St. Louis Brews
c/o Jerry S. Dahl
9 Adams Ln.
Kirkwood, MO 63122
(314) 822-8039

MONTANA

Big Sky Basement Brewers and Blues Revival Society
c/o Jim Hunter
614 S. Cottage
Miles City, MT 59301
(406) 232-4378

Exalted Brewers of Great Falls
c/o Caroline Carter
1124 4th Ave. N.
Great Falls, MT 59401
(406) 454-3514

Flat Heads Brew Society
c/o Pat Cross
1220 3rd Ave. E.
Kalispell, MT 59901
(406) 756-8195

Hopping Anarchists
c/o Kirk Astroth
7359 Raven Dr.
Belgrade, MT 59714
(406) 388-1232

MT Bocks Society
c/o Donald Weber
5900 Elysian Rd.
Billings, MT 59101
(406) 256-9841

Pour Bastards of Northeast Montana
c/o Paul Pence
PO Box 281
Fort Peck, MT 59223
(406) 526-3636

Zoo City Zymurgists
c/o James Pelland
108 Northview Dr.
Missoula, MT 59803

NEBRASKA

Barley Pops and Alewives
c/o Marilyn Kielniarz
1402 S. 52nd St.
Omaha, NE 68106

Cops & Hops
c/o Doug Phillips
13630 Guildford
Waverly, NE 68462

Lincoln Lagers
c/o Dave Barnes
330 N. Coddington Ave.
Lincoln, NE 68528
(402) 477-5382

OmaHOPS
c/o Steve Nasr
2412 S. 153rd St.
Omaha, NE 68144
(402) 333-0668

Platte River Brew Crew
c/o John Michaels
PO Box 99
Columbus, NE 68602-0099

Respected Ale & Lager Fermentors - Of Nebraska (RALF-ON)
c/o Jeff Ramage
116 Westridge Ave.
Bellevue, NE 68005-3515
(402) 291-2208

NEVADA

Southern Nevada Ale Fermenters Union (SNAFU)
c/o Joe Sutton
3324 Sturbridge
Las Vegas, NV 89129

Washoe Zephyr Zymurgists
c/o Eric McClary
6185 Franktown Rd.
Carson City, NV 89704
(702) 883-7187

NEW HAMPSHIRE

Brew Free or Die
c/o Dan Hall
PO Box 1274
Merrimack, NH 03054-1274
(603) 778-1231

Fermenting Minds
c/o Bill Toothaker
150 Portland St.
Rochester, NH 03867
(603) 335-7012

Lakes Region Homebrewers
c/o Jon Scanlon
RFD1 Box 388B
Northfield, NH 03276
(603) 286-8149

New Hampshire Biernuts
c/o Dave Weisberg
PO Box 624
Peterborough, NH 03458
(603) 827-3502

Northern Brewers
c/o The Wine Cellar
650 Amherst St.
Nashua, NH 03063
(603) 883-4114

Postal Brewers Club
c/o Robert Zeigler
934 Lake Shore Rd.
Manchester, NH 03109-5709

Seacoast Homebrewers Club
c/o Scott Kaplan
2 Broadway, Apt. 4
Dover, NH 03820
(603) 743-6469
GrtScott@aol.com

Seacoast Union of Maltsters
c/o Bill Rucker
3 Jessica Court
Somersworth, NH 03878-2300
(603) 692-3609

Slaves of Hathor
c/o David Page
10 N. Main St., PO Box 1118
Ashland, NH 03217

Stagger Inn Brewers
c/o Scott Dean
219 N. River Rd.
Epping, NH 03042
(603) 679-1045

Twin State Brewers
c/o Paul White
RR1 Box 106A
Orford, NH 03777
(603) 353-4564

NEW JERSEY

BEERS-R-US (BRU)
c/o Matt Mehalick
974 Linwood Pl.
New Brunswick, NJ 08902
FAX (908) 937-5624
BeersRUs29@aol.com

Bell Hops
c/o Dave Ballard
599 Putnam Ave.
Piscataway, NJ 08854
(908) 752-7347

Brunswick Brew Club
c/o Brian Conger
4302 Hana Rd.
Edison, NJ 08817-2569
(908) 248-1559


Delaware Valley Draughtsmen
c/o Hunterdon Homebrew Shoppe
10 Bridge St.
Frenchtown, NJ 08825
(908) 996-6008

Gloucester County Homebrewers
c/o Chuck Wine, Secretary
137 Pitman Downer St.
Sewell, NJ 08080
(609) 2BREWIT

Hansen House Hoppers / 3-H Club
c/o David R. Hoffmann
115 N. Union Ave.
Cranford, NJ 07016
(908) 709-9295

Hophedz
c/o Kerry Bendel
38 Kirschner Ave.
Lincoln Park, NJ 07035
(201) 633-7679

Jersey Shore Homebrewers
c/o Mike Kilkenny
607 Larkspur Ln.
Jackson, NJ 08527
(908) 842-7507

Jersey Shore Homebrewers Association 
c/o Giles G. Fox
83 West Johnstown Lane
Cape May Court House, NJ 08210

Mid-Atlantic Sudsers and Hoppers (MASH)
c/o Ed Busch
PO Box 105
Flagtown, NJ 08821
(908) 359-3235

Morristown Mashers
c/o Hop & Vine
11 DeHart St.
Morristown, NJ 07960
(201) 993-3191
jules@gti.net

New Jersey Worthogs Home Brew Club 
PO Box 8513
Saddlebrook, NJ 07663
(201) 427-4331
Dariann@aol.com

New York City Homebrewers Guild
c/o Greg Zaccardi
174 Walnut St.
Montclair, NJ 07042
(718) 398-1610

Pine Barren Brewers
c/o Eric G. Cummings
7 First St.
Barnegat, NJ 08005
76456,771@compuserve.com

**Princeton And Local Environs
Ale and Lager Enjoyment Society
(PALE ALES)**

c/o Joe Bair
82 Nassau St.
Princeton, NJ 08542
(609) 252-1800
schd@pluto.njcc.com

South Jersey Fermenters

c/o Bruce Hammell
868 Quinton Ave.
Trenton, NJ 08629
(609) 393-2946

NEW MEXICO

Atom Mashers

c/o Michael Hall
1325 43rd St.
Los Alamos, NM 87544
(505) 662-2310
am_president@galt.c3.lanl.gov

Block 50 Brewers

c/o Raybon Phillips
1713 Corte Alegre
Alamogordo, NM 88310

Desert Quenchers

c/o Mark McClure
Box 670
Mesilla, NM 88046
(505) 523-6649

Dukes of Ale

c/o Guy Ruth
11524 Manitoba N.E.
Albuquerque, NM 87111
(505) 294-0302

The Grateful Heads

c/o Alewife Homebrew Supply
1314 Rufina Circle, Suite A6
Santa Fe, NM 87505
(505) 474-8046

Silver City Beer Brewing Guild

c/o Desert Bloom Herbs
506 N. Bullard
Silver City, NM 88061
(505) 388-3542

NEW YORK

Adirondack Homebrewers

c/o Dick Cummings
5 Highland Pl.
Lake Placid, NY 12946
(518) 523-1557
adkbrewski@aol.com

Albany Barley Converters

c/o Cindy Hill
132 Salisbury Rd.
Delmar, NY 12054-1219
(518) 439-0923

**The ALERS (Allegany Libation
Education and Recreation Society)**

c/o Jim Lee
146 N. 9th St.
Olean, NY 14753
(716) 373-0927

Borderline Yeast Infectors

c/o Gary (Doc) Dougherty
449 Court St.
Binghamton, NY 13904
(607) 722-2476

Brewbonic Plague

c/o Vance Conway
PO Box 632
Buffalo, NY 14207-0632
(716) 884-8099

**Brewers Allied to Keep
Everyone Drinking (BAKED)**

c/o Patrick Higgins and Maura Kilgore
271 E. 10th St., #10
New York, NY 10009
(212) 995-BEER
maurapat@aol.com

**Brewers in
Endicott Region (BIER)**

c/o John Theriault
1221 Chesnut Ridge
Apalachin, NY 13732
(607) 751-5872
FAX (607) 751-3259
johnth@lfs.loral.com



Lee Clark, Bob Tucker, Alan Taylor and Joe Snavelly man the Greater Huntington Homebrewers Association booth at the 13th annual Chilifest in Huntington, W. Va., in September 1995. The club picked up four new members at the event.

**Brewers United for Real Pilsner
(BURP)**

c/o Robert Decker
RD#1 Box 354
Livingston Manor, NY 12758
(914) 439-4367

Broome County Fermenters Association

c/o Brice Feal
2601 Grandview Pl.
Endicott, NY 13760
(607) 757-0634

**Catskill Mountain Homebrewers
Club**

c/o Pete Bruno
6609 Rt. 9
Hudson, NY 12534
brewer@taconic.net

Corning Brew Crew

c/o David Tennent
4748 Clawson Dr.
Campbell, NY 14821
(607) 974-3417 D; (607) 527-4111
tennent_dl@corning.com

Homebrewers of Staten Island

c/o Ken Johnsen
124 Jacques Ave.
Staten Island, NY 10306
(718) 667-6659
FAX (718) 987-3942
kbjohns@escape.com

**The Honourable Company
of Fermenters of The Barony
of Concordia of the Snows**

c/o Ari Fisher
64 S. Pine Ave.
Albany, NY 12208
(518) 482-3118

Hudson Valley Homebrewers

PO Box 285
Hyde Park, NY 12538

Ithaca Brewers Union

c/o Perry Geib
PO Box 6604
Ithaca, NY 14851
(607) 277-7122

Keuka Brewers Association

c/o Michael Cook
8319 Pleasant Valley Rd.
Hammondport, NY 14840
(607) 569-2451

Last of the Brewhicans

c/o Dave Jasnau
51 Hamilton Rd.
Corinth, NY 12822
(518) 654-6378

**Libatious Anarchistic Mashers
of Buffalo's Inner City (LAMBIC)**

c/o David M. Hefka
25 Mercer Ave.
Buffalo, NY 14214
(716) 832-0605
nigott@localnet.com

Long Island Brewers Association

c/o Mark Burford
20 Bell Ave.
Blue Point, NY 11715
(516) 363-2713

Malted Barley Association

c/o James Simpson
58-07 Metropolitan Ave.
Ridgewood, NY 11385
(718) 821-6022

Mohawk Valley Friends of Beer

c/o Scott Barrett
PO Box 220
Leonardsville, NY 13364-0220
(315) 855-4403
scott@partech.com

**Mutually United Grain
& Grape Zymurgists (MUGGZ)**

c/o John Diana
1675 Helderberg Ave.
Schenectady, NY 12306

New Jersey Worthogs

c/o Bill Luchkiw
49 Windmill Ln.
New City, NY 10956

**New York Notorious Brewers —
Dutchess/Orange Chapter**

c/o Chuck Lutz
PO Box 10591
Newburgh, NY 12550
(914) 457-5827

**New York Notorious
Brewers — Ulster Chapter**

c/o John Adam
342 Hurley Ave., 7-9
Kingston, NY 12401
(914) 339-7804

North Chautauqua Homebrewers

c/o Victor Szweczk
119 E. Hazeltine Ave.
Kenmore, NY 14217
(716) 873-6080

**North Yeast Fellowship
Of Ale and Mead (NY FOAM)**

c/o Joe Burke, McGonigles
9 W. Main St.
Washingtonville, NY 10992
(914) 496-8112

North Yeast Homebrew Club

c/o Michael J. Bauer
120 Fairmont Ave.
Watertown, NY 13601

**Northern Westchester
Home Brewers Association**

c/o Bob Trombetta
151 Oakridge Circle
Mahopac, NY 10541
(914) 621-2520

Paumanok United Brewers (PUB)

PO Box 8023
Hicksville, NY 11802-8023
(516) 932-1091

Salt City Brew Club

c/o Ed Wren
PO Box 1935
Syracuse, NY 13201
(315) 457-2282
ejwren@eworld.com

Saratoga Thoroughbrews

c/o Wolfgang Kurth, The Hoppy Troll
9 Philadelphia St.
Saratoga Springs, NY 12866-3104
(518) 581-8160

Seven Valley Brew Club

c/o John Buterbaugh
4770 Kinney Gulf Rd.
Cortland, NY 13045

Sultans of Swig

c/o Timothy Herzog
412 Lamarck Dr.
Buffalo, NY 14225
(716) 837-7658

**Upstate New York
Homebrewers Association**

PO Box 23541
Rochester, NY 14692
(716) 242-9626

Wort Ever Ales You

c/o Andrew Schmidt
307 Quaker Rd.
Chappaqua, NY 10514
(914) 238-4549

NORTH CAROLINA

Carolina Brewmasters

c/o John Mitchell
2358-H Pineview Ln.
Gastonia, NC 28054

**Cary-Apex-Raleigh
Brewers of Yore (CARBOY)**

c/o Mary Jo Ciccarelli
10207-C Chapel Hill Rd.
Morrisville, NC 27560
(919) 467-8934



Hudson Valley Homebrewers participate in a cider pressing at the home of Bruce and Gloria Franconi in Red Hook, N.Y. Gloria is in the foreground.

Piedmont Institute of Sud Sippers (PISS)

c/o Phil Ridge
309 Concord St. #203C
Greensboro, NC 27406
(910) 273-6856

Triangle Unabashed Homebrewers (TRUB)

c/o Andrew Kagan
203 East Trinity Ave.
Durham, NC 27701
(919) 688-4089

Winston-Salem Wort Hawgs

c/o Ed Pearson
1416 Claxton Ridge Rd.
Kernersville, NC 27284
73571,3276

NORTH DAKOTA

**Aurora Breweralis/
Northern Lights Brew Club**

c/o Pete Farney
1625 20th Ave. S. #308
Grand Forks, ND 58201
(701) 775-5430

Buffalo Brewers

c/o Curt Saylor
220 11th Ave. N.E.
Jamestown, ND 58401-3734
(701) 252-4358

Prairie Homebrewing Companions

c/o Marty Draper
1130 Oak St.
 Fargo, ND 58102
(701) 280-1892

Society of Brewing Scientists (SOBS)

c/o James MacArthur
1814 Ryan Dr.
Bismarck, ND 58501
(701) 222-0991

OHIO

**Akron-Canton
Homebrewers Association**

PO Box 558
Green, OH 44232
(216) 239-1472

Bloatarian Brewing League

c/o Larry Gray
7012 Mt. Vernon Ave.
Cincinnati, OH 45227
(513) 271-2672

Cincinnati Malt Infusers

c/o Jeff Seeley
1025 Maycliff Pl.
Cincinnati, OH 45230
(513) 231-6062
FAX (513) 627-6157

**Columbus Homebrewers Understand
Good Stout (C.H.U.G.S.)**

c/o Walter den Haan
6600 Dublin Rd.
Delaware, OH 43015

Dayton Regional Amateur Fermentation Technologists (DRAFT)

c/o Richard Beals
PO Box 246
Dayton, OH 45449
(513) 298-3623

DLB Home Brewers Club

c/o Tom Jarvis
6006 Rosebelle Ave.
North Ridgeville, OH 44039
(216) 327-3057

Salacious Homebrewers In Toledo

c/o Robert Morris
9413 Stitt Rd.
Whitehouse, OH 43571-9762

**Scioto, Olentangy
and Darby Zymurgists (SODZ)**

c/o Jonathan Woodman
1823 Hobbes Dr.
Hilliard, OH 43026
(614) 876-5999; (614) 224-8488
woodmanj@aol.com

**Society of Akron
Area Zymurgists (SAAZ)**

c/o Rob Boring
505 N. Broadway
Medina, OH 44256
(216) 725-1917
FAX (216) 723-4677

**Society of Northeast
Ohio Brewers (SNOBS)**

c/o Fred Dockus
515 High St.
Wadsworth, OH 44281
(216) 336-9262

**Youngstown Area Homebrewers
Organization of Ohio (YAHOO)**

c/o Bob Bero
528 Pasadena Ave.
Youngstown, OH 44502-2248
(216) 533-1035

OKLAHOMA

**Fellowship of
Oklahoma Ale Makers (FOAM)**

c/o Tony Brown
326 S. 8th St.
Broken Arrow, OK 74120

High Plains Draughters

c/o Joe Bocock
513 N.W. 38th St.
Oklahoma City, OK 73118
(405) 525-9858

Just Brew It!

c/o Fred Wenzel
PO Box 3082
Bartlesville, OK 74006
(918) 335-2740
fwenzel@AA1-OK.MHS.compuserve.com

OREGON

Capitol Brewers

c/o Bill Andrews
755 Boone Rd. S.E.
Salem, OR 97306

Cascade Brewers Society

c/o Scott Weech
26654 Pickens
Eugene, OR 97402
(503) 484-4758

GEne Users Zymurgy Lodge (GUZL)

c/o Stephen Quarterman
2359 N.W. Hoyt
Portland, OR 97210
(503) 241-1856; GEne page 1152;1

Good Heathens

c/o Randy Reid
1285 Criteser Loop
Toledo, OR 97391
(503) 336-2458

Grateful Deaf Homebrew Society

c/o Scott Martin
2637 S.W. Patton Ct.
Portland, OR 97201
(503) 224-0337

Heart of the Valley Homebrewers

c/o Lee Smith
2190 Maier Ln., N.W.
Albany, OR 97321
(503) 926-0596

Helles Canyon Quaffers

c/o Ken Hohmann
69796 Jintown Rd.
Wallowa, OR 97885
(503) 886-3501

Hopheads Anonymous

c/o Founder 2
1757 S.E. Kane St.
Roseburg, OR 97470
(541) 672-3185

Mary's Peak Lagers

c/o Dean Bautz
995 N.W. Garfield Ave.
Corvallis, OR 97330-2115
(503) 745-5865

Oregon Brew Crew

c/o Scott Sanders
7260 S.W. 82nd
Portland, OR 97223
(503) 293-6120

Saccharomyces First!

c/o David L. Murray
73 Pine St. #5
Klamath Falls, OR 97601
(503) 883-3070

**Society for Upgrading
Drinkable Spirits (SUDS)**

c/o Kerry Carpenter
PO Box 921
Baker City, OR 97814

Southern Oregon Beer Farmers

c/o Ross Litton
5204 Dobrot Way
Central Point, OR 97502-1612

Southern Oregon Brewers Society

c/o Larry Cosby
4501 Azalea Dr.
Grants Pass, OR 97526
(503) 479-3243

**Stout-hearted
Brewers of the Umpqua Valley**

c/o Paul Moon
PO Box 503
Glide, OR 97443
(503) 496-0119

Strange Brew

c/o Cliff Rice
606 Vermillion
Newberg, OR 97132
(503) 538-6072

Tillamook Brewer's Guild

c/o Quackenbush Homebrew Supply
2002 3rd St.
Tillamook, OR 97141
(503) 842-5331

Western Oregon

Regional Tasters Society (WORTS)

c/o Tom Rhodes
2459 S.E. Tualatin Valley, Hwy. 167
Hillsboro, OR 97123

PENNSYLVANIA

**Beer Unlimited Zany Zymurgists
(BUZZ)**

c/o Jim McHale
81 Lancaster Ave. Store 35
Malvern, PA 19355
(215) 889-0905

Berks United Zymurgists (B.U.Z.)

c/o Terry Ripple
1013 Lancaster Ave.
Reading, PA 19607
(215) 777-5520

Boys from Brew Ha Ha

Route 222 RD2 Box 2519-1
Fleetwood, PA 19522
(610) 944-0500

Brewing Excellence

in the Erie Region (BEER)

c/o Kirk W. Olsen
649 W. 50th St.
Erie, PA 16509-2509
(814) 868-8530

**Danville Area Malt Nuts United
for Tastier Suds (DAMNUTS)**

c/o Pete Cera
303 Water St.
Danville, PA 17821
(717) 275-1282

Happy Valley Happy Hoppers

c/o Russ Meyers
630 Stoneledge Rd.
State College, PA 16803
(814) 234-3785
rvn@cf.hrb.com

Harrisburg Area

Homebrewers Association (HAHA)

c/o Tom Scotzin
65 N. 5th St. C
Lemoyne, PA 17043-1611
(717) 737-0483

**HOPS: Homebrewers
of Philadelphia and Suburbs**

c/o Toast Konger
303 St. Laurence Rd.
Upper Darby, PA 19082
(610) 446-1099
Ktoast@netaxs.com

Keystone HOPS

c/o Jason Harris
Montgomery Farmer's Market Route 63
Montgomeryville, PA 18936
(215) 641-HOPS

Keystone Keggers

c/o Andrew Kovalchick
124 N. 12th St.
Allentown, PA 18102
(215) 821-4808

Lancaster County Brewers

c/o Ted Eyraud
545 N. Lime St.
Lancaster, PA 17602
(717) 293-0345

Northeast Pennswoods

Homebrewers Guild
c/o Steve Nash
305 Mary St.
Mountaintop, PA 18707
(717) 474-6668

South-Central Pennsylvania

Zymurgists Association
c/o Steve Stoppard
4342 N. George St.
Manchester, PA 17345
(717) 266-5954

**Three Rivers Alliance
of Serious Homebrewers (TRASH)**

c/o Greg Walz
3327 Allendorf St.
Pittsburgh, PA 15204
(412) 331-5645

Virtual Village Home Brew Society

c/o Ralph Colaizzi
300 Stevens Dr. #306
Pittsburgh, PA 06488
(412) 931-9099
75444.1225@compuserve.com

Wyoming Valley

Homebrewers Club
c/o Chuck Yarmey
224 East 8th St.
Wyoming, PA 18644
(717) 693-6268

**York Area Homebrewers Association
(YAHA)**

c/o Mike Knaub, Starview Brew
51 Codorus Furnace Rd.
Mt. Wolf, PA 17347-9723
(717) 266-5091

RHODE ISLAND**Attleboro Suds Suckers**

c/o Dean Booth
77 Thibault Ave.
Woonsocket, RI 02895
(401) 765-3770

Rhody Blovitates

c/o Leon Dudley
199 Mesa Dr.
North Kingstown, RI 02852
(401) 884-1349

SOUTH CAROLINA**Hopportunityists of Clemson**

c/o Brad Purinton
597 Lakeside Dr.
Six Mile, SC 29682
(803) 868-2859

Low Country Libations

c/o Josh Quigley
845 D Savannah Hwy.
Charleston, SC 29407
(803) 571-4748

Palmetto State Brewers

c/o Jim Griggers
408 Timber Ridge Dr.
West Columbia, SC 29169
(803) 739-1813
brew@devine.columbiasc.attgis.com
http://www.scsn.net/~psbrewer

Sandy Bottom Brew

Crew of the Coastal Carolinas
c/o Steve Nay, U-Brew
1207 Hwy. 17 S.
North Myrtle Beach, SC 29582
(803) 361-0092

**South Carolina Homebrewers
Of Lagers, Ales and Real Suds
(SCHOLARS)**

c/o Steven Andrews
483 Cinnamon Ridge Dr.
Inman, SC 29349-6225
(803) 472-6516
BGUW37A@Prodigy.com

TENNESSEE**Bluff City Brewers**

c/o Jim Gosney
8927 Magnolia Leaf Cove
Cordova, TN 38018
(901) 756-5298

Chattanooga Brew Club

c/o Eddie Scoggins
304 Georgetown Rd.
Cleveland, TN 37311
(615) 478-3184

East Tennessee Brewers Guild

c/o Bernie Riemer
107 Westwind Dr.
Oak Ridge, TN 37830

Mashville Brews

c/o Erick Huth
2406 Mansker Dr.
Madison, TN 37115
(615) 356-3089

Smoky Mountain Brewmeisters

c/o Katie Cardwell
3712 Walker Blvd.
Knoxville, TN 37917
(615) 689-9064

Tennessee Valley**Homebrewers' Association**

c/o John Yust
1443 Whitower Dr.
Knoxville, TN 37919
(615) 693-7262

Tri-City Homebrewers Club

c/o Kevin Mitchell
PO Box 215
Kingsport, TN 37662
(615) 392-1316

Tuckasee**Homebrewers Association**

c/o Ted Pilkons
APSU, PO Box 7161
Clarksville, TN 37044
(615) 645-9454

TEXAS**Ale-ian Society of Lubbock**

c/o Clifford A. Hicks
5226 88th St.
Lubbock, TX 79424
(806) 798-8187
74631.2471@compuserve.com

Ales Are Us

c/o Jon Grow
2908 Fountainview
Houston, TX 77057
(713) 785-2739

Basin Brewers

c/o Glenn Griffith
4505 Green Tree Blvd.
Midland, TX 79707
(915) 699-7929

Bay Area Mashtronauts

c/o Michael Wiley
585 W. Bay Area Blvd.
Webster, TX 77598-4132
(713) 338-2241
rlivingston@ghgcorp.com
http://www.ghgcorp.com/rlivingston

**Bay Area Society of Homebrewers
(BASH)**

c/o Adam Klager
3309 Orlando Dr.
Corpus Christi, TX 78411
(512) 853-7105

Bexar Brewers

c/o The Newells
13465 Wetmore Rd.
San Antonio, TX 78247
(210) 545-2289

Bock 'n' Ale-ians

c/o Dr. Paul Farnsworth
7404 Hummingbird Hill
San Antonio, TX 78255
(512) 695-2547

Borderline Brewers

c/o Mike Seidensticker
615 Baltimore Dr.
El Paso, TX 79902-2517
(915) 544-5741

Brew Bayou

c/o Mark K. DeWeese
PO Box 1575
Brazoria, TX 77422
(409) 848-0516

Brewed "66" Wort Hogs

c/o John Woolsey
1300 S. Western
Amarillo, TX 79106
(806) 355-4136

The Brews Brothers

c/o Kevin Arnold
4319 Sarasota Ln.
McKinney, TX 75070
(214) 529-6645
arnie@dfw.net
www.dfw.net/~arnie

Cowtown Cappers

c/o Joan Basham, Winemaker
5356 W. Vickery Blvd.
Fort Worth, TX 76107-7520
(817) 377-4488

Denton Fermented Brewers Society

c/o Pat Townner Morrison
1811 N. Elm St.
Denton, TX 76201-3023
(817) 383-4399

Dry County Brewers

PO Box 131738
Tyler, TX 75713

Foam Rangers Homebrew Club

c/o Autumn Woods
5611 Morningside Dr.
Houston, TX 77005-3218
(713) 523-8154
FAX (713) 748-3226
bzuniga@utmmg.med.uth.tmc.edu
http://129.106.15.103/FRHC/Foam
Rangers.html

The Killer Ales

c/o Martin Stalnaker
5519 Wigton Dr.
Houston, TX 77096
(713) 840-0510
mls@brco.com

The Knights of the Brown Bottle

c/o John Wolff
2703 Woodside Dr.
Arlington, TX 76016
(817) 273-2989
wolff@uta.edu

Kuykendahl Grain Brewers

c/o Dean Doba
4618 Roserock Ln.
Spring, TX 77388
(713) 350-0256

Lager-Rythmics

c/o Steve Moninger
3925 Fredricksburg Rd.
San Antonio, TX 78201
(210) 737-6604

MaltHoppers Beer Club

c/o George Ashley
PO Box 3392
Bryan, TX 77805
(409) 693-3004

North Texas Homebrewers Association

c/o Darrell Simon
8405 Spinnaker Dr.
Rowlett, TX 75088
(214) 475-7571
dds1@esygvl.com

Red River Brewers

c/o Richard Dobson
Rt. 6 Box 74C
Gainesville, TX 76240
(817) 665-3269
FAX (817) 665-3269

Red River Brewers Union

c/o Kay Gilbert
Rt. 3 Box 202
Whitesboro, TX 76273

Zymurgic Enthusiasts of Austin

c/o Brian Peters
1506 Chelsea Ln.
Austin, TX 78704
(512) 443-4934

UTAH**Fermented Friends**

c/o Mike Sullivan
3355 N. 250 W.
Ogden, UT 84414
(801) 782-6853

**Northern Utah Militia of Brewers
(NUMB)**

c/o Marc Hugentobler
338 W. 100 S.
Logan, UT 84321
(801) 752-8237
Marhug@telecom.usu.edu

Zion Zymurgists Hops (ZZ HOPS)

c/o Big Jim Norris
667 E. 1200 N.
Bountiful, UT 84010
(801) 298-4339

VERMONT**Black River Brewers**

c/o Tom Coleman
PO Box 404
Ludlow, VT 05149
(802) 228-4178

Central Vermont Homebrewers

c/o Dr. Phil Zunder
15 Pinewood Rd.
Montpelier, VT 05602
(802) 229-9617

Cramhill Brewers

c/o Tony Lubold
RD 2 Box 238
Randolph, VT 05060
(802) 728-3754

Green Mountain Mashers

c/o Anne Whyte
10 School St.
Essex Junction, VT 05452
(802) 879-6462

The VLS Homebrewer's Club

c/o Student Bar Association
Chelsea St.
South Royalton, VT 05068
(800) 227-1395

VIRGINIA**Back Door Brewers**

c/o Bill Pemberton
PO Box 5754
Charlottesville, VA 22905
(804) 973-7701
flash@virginia.edu

Brewers Association**of Northern Virginia (BANOVA)**

c/o Ed Cosgrove
3501 Mauti Ct.
Woodbridge, VA 22192
(703) 590-3982

Brewers United for Real Potables (BURP)

c/o Bill Ridgely
8912 Jandell Rd.
Lorton, VA 22079-1620
(703) 339-8028

Dulles Regional Brewing Society (DRBS)

c/o Fred Hardy
13215 Poplar Tree Rd.
Fairfax, VA 22033
(703) 378-0329

**Hampton Roads
Brewing & Tasting Society**

c/o Kevin Oliver
2340 Greenwell Rd.
Virginia Beach, VA 23455-2110
http://www.inf.net/~ridgely/hrbts.html

Herndon Hard Times Wort Hogs

c/o Lindsey Smith
3213 Kinross Cr.
Herndon, VA 22071-3319
(703) 689-3264



The Redstick Brewmasters visiting Rikenjaks Brewery in August 1995.

James River Brewers
c/o Lindsay Weiford
PO Box 125
Hanover, VA 23069
(804) 537-5228

**Rappahannock Engineers
of Ales and Lagers (REAL)**
c/o Jerry Hoehn
PO Box 504
Locust Grove, VA 22508
(703) 972-7467

**Society of Harrisonburg
Abc Dogged Yeasters (SHADY)**
c/o Tom Furgeson
156 New York Ave.
Harrisonburg, VA 22801
(703) 432-6799
rokto@aol.com

St. Arnaud Society
c/o Pete Boatner
106 A Monte Vista Ave.
Charlottesville, VA 22903

WASHINGTON
**Boeing Employees'
Wine and Beermakers**
Mail Stop 8L-35, PO Box 3707
Seattle, WA 98124-2207
(206) 393-8161

Brew Fish
c/o Charles Castellow
23326 94th Pl. W.
Edmonds, WA 98020
(206) 546-5788

Brews Brothers Society of Seattle
c/o Jim Hinken
24211 4th Pl. W.
Bothell, WA 98021
jhinken@accessone.com

Dark Ship Homebrewers
c/o Kim's Place
3405-175th St. N.E. #9
Arlington, WA 98271
(360) 658-9577

Fidalgo Island Brewers
c/o Tony Bigge
PO Box 1102
Anacortes, WA 98221
(206) 293-8070

Grande Tete Homebrewers
c/o Todd S. Hymel
4829 33rd Ave. N.E.
Seattle, WA 98105-4004
FAX (713) 783-7819

Homebrewers of Puget Sound
c/o Cascade Brewing Supplies
224 Puyallup Ave.
Tacoma, WA 98421
(206) 383-8980

Impaling Alers
c/o Larry Rifenberck
7405 S. 212 #103
Kent, WA 98032
(206) 872-6846

Mid-Columbia Zymurgy Association
c/o Daniel A. Connors IV
11812 Mata Rd.
Kennewick, WA 99337
(509) 627-1260

Mt. Baker Brewers
c/o Terry Leishman
5169 LaBounty Dr.
Ferndale, WA 98248
(360) 384-6221

No Bollocks Brewing
c/o Gordon Ponce
600 Queen Anne Ave. N. #306
Seattle, WA 98109-4045
(206) 213-0722

The Northern Brewers
BEEWBC c/o Bob Maphet,
PO Box 3707
Seattle, WA 98124
(206) 266-9681

**Puget Sound Amateur
Wine & Beer Makers Club**
c/o Grace Nilsson
5604 E. 72nd St. Ct.
Puyallup, WA 98371
(206) 845-9791

Puget Sound Beercrafters
c/o John Gehringer
6103 Mt. Tacoma Dr. S.W.
Tacoma, WA 98499
(206) 535-9348
johnsbrewhouse@netspring.com

Red, White & Brew Society
c/o Alan Moen
253 Independence Way
Cashmere, WA 98815-1091
(509) 782-1147


River City Brewers
c/o Bob Ketcham,
Jim's Homebrew Supply
2619 N. Division
Spokane, WA 99207

**Seattle Secret Skinny
Brewers Society**
c/o Marvin Crippen
3532 N.E. 92nd St.
Seattle, WA 98115
(206) 522-5143

South Sound Suds Society (SSSS)
c/o Chris Enrico
4809 24th Ave. S.E.
Lacey, WA 98503-3252
(206) 459-4759
cenrico@nwrain.com

West Sound Brewers
c/o Steve Shaw
5170 Chico Beach Dr. N.W.
Bremerton, WA 98312
(360) 396-2442

Whatcom Homebrewers Club
c/o Leonard Kerr
3023 E. Smith Rd.
Bellingham, WA 98226-9563
(206) 398-7942

**Whidbey
Island Brewers Guild** 
c/o Greg Hampton
439E Mitchell Dr.
Coupeville, WA 98329
(360) 678-2262

**Yakima Enthusiastic
Ale and Stout Tasters (YEAST)**
c/o John Farver
1403 Garfield Ave.
Yakima, WA 98902
(509) 248-9032

WEST VIRGINIA
**The Better Beer Brewing Brethren
of the Blue Ridge (The 5 B's)**
PO Box 211
Charlestown, WV 25414
kahlval@ix.netcom.com

Capitol Beermakers Guild
c/o Dan Vallish
405 Fairview Dr.
Charleston, WV 25302
(304) 343-0350

**Greater Huntington
Homebrewers Association**
c/o John L. Szarek
1930 S. Englewood Rd.
Huntington, WV 25701
(304) 696-7314
szarek@musom01.mu.wvnet.edu

Maltainers
c/o Jim Plitt, Stone's Throw
HC 74 Box 30
Three Churches, WV 26765

WISCONSIN
Antigo Suds Suckers (ASSes)
c/o Michael Matucheski
N4628 Hwy. H
Antigo, WI 54409-8752

Beer Barons of Milwaukee
c/o Jeffrey Brown
4316 N. Maryland Ave.
Shorewood, WI 53211
(414) 961-2084

Beer Chasers
c/o Ron Strobel
19555 W. Bluemound Rd., Suite 36
Brookfield, WI 53045
(414) 789-0555

Bidal Society of Kenosha
c/o Carol Norton
7625 Sheridan Rd.
Kenosha, WI 53143
(414) 654-2211

Boars Head Brewing Club
c/o Jeff Parish
2321 Trillium Dr.
Eau Claire, WI 54701
(715) 839-0555

Brew City Brewzers
c/o Ricky Engstrom
3600 N. 60th St.
Milwaukee, WI 53216
(414) 442-0190

Brewtown Brewmasters
c/o John Gorecki
2268 S. 7th St.
Milwaukee, WI 53215
(414) 781-BREW

Bull Falls Brewers
c/o Terese Barta
1005 Brookfield Ln.
Wausau, WI 54401
tmarta@mail.wisnet.net

**Central Wisconsin Amateur
Wine Club**
c/o Ed Holt
1200 E. 26th
Marshfield, WI 54449
(715) 384-9441

First Draft Brewclub
c/o Steve Potter
5475 Marie Rd.
Oregon, WI 53575
(608) 835-3007

Focal Point Homebrew Club
c/o Graham Godfrey
PO Box 622
Stevens Point, WI 54481
(715) 341-0407

Frugal Homebrewers
c/o Greg Snapp
264 W. Broadway
Waukesha, WI 53186
(414) 544-0894

King Gambrinus Court Brewers
c/o Art Steinhoff
7680 Big Pine Ln.
Burlington, WI 53105
(414) 539-2736

Lakeshore Home Zymurgists
c/o Michael Conard
1021 Juneau St.
Kewaunee, WI 54216-1127
(414) 388-2728
75322,50

**Madison Homebrewers &
Tasters Guild Ltd.**
c/o Bob Paoilino
PO Box 1365
Madison, WI 53701-1365
(608) 249-7126

Manty Malters
c/o Jeff Parks
4513 Harvest Circle
Manitowoc, WI 54220
(414) 684-6135

Milwaukee Beer Society
c/o Michael D. Ratkowski
14835 W. Lisbon Rd.
Brookfield, WI 53005-1510
(414) 783-5233

Sin City Sudzers
c/o Rick Woods
1404A North Ave.
Sheboygan, WI 53083

Society of Oshkosh Brewers (SOBs)
c/o Jeffrey Affeldt, Galaxy Hobby
756 Northland Mall
Appleton, WI 54914
(414) 730-9220

Sud Savors
c/o Dave Heyn
108 Old Orchard Ln.
Neeah, WI 54956-4915
(414) 725-2773

Tappa Kegga Brew
c/o Shawn Conaway
2927 N. 58th St.
Milwaukee, WI 53210-1544

Wisconsin Southern Zymurgy Society
PO Box 42
Darien, WI 53114-0042
(414) 724-5147

Wisconsin Vintners Association
c/o John Rauenbuehler
6100 Kent Ave.
Whitefish Bay, WI 53217
(414) 964-2098

WYOMING
High Plains Drafters
c/o Dave Clements
316 W. 15th St.
Cheyenne, WY 82001
(307) 638-0662

Mad Mountain Mashers
c/o John Fangmeier
PO Box 1104
Evanston, WY 82931-1104
(307) 789-4677
fang@chevron.com

Snowy Range Foamentors
c/o Claude Morris
810 S. 23rd
Laramie, WY 82070
(307) 742-0516

WY Brew
c/o Basement Brewin'
232 E. 2nd St., 1st Floor
Casper, WY 82601
(307) 234-1258
brewshop@eworld.com

FOR THE BEGINNER

Dave Bone

Hop Basics

Many spices have been used through the years to augment the flavor of beer. Over time brewers have concluded that one spice surpasses all others: hops. Hops are the flowers of a vine scientifically known as *Humulus lupulus*. They contain small lupulin glands containing resins and oils. These substances, when added to wort, produce a number of desirable effects.

Bitterness: Hop acids impart a refreshing bitterness, balancing the sweetness of the malt.

Aroma: Hop oils add a spicy or floral aroma and some degree of flavor as well.

Preservation: The acids that make beer bitter also inhibit the growth of some bacteria.

Clarity: The tannins in hop flowers help remove malt proteins, aiding in clarification.

Forms of Hops

Hop flowers are fairly delicate and quite susceptible to deterioration. This deterioration is accelerated by exposure to light, air and heat. To maintain freshness, most hops are processed to reduce exposure to these conditions. Following are the most common hop forms:

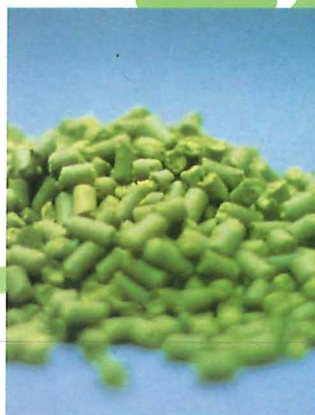
Whole hop flowers: After the flowers are harvested they are gently dried to remove most of their moisture. Whole hop flowers can then be packaged and shipped to brewers for use. When fresh, hops in this form provide a wonderful aroma. Whole hops are bulky and can be difficult to store, but this really isn't an issue on the homebrew scale. The loosely packed flowers are easily attacked by oxygen. For homebrewers it is best to shop carefully for whole hops that are fresh and have been stored away from heat and air.

Whole hops provide a natural filter bed when straining cooled wort. Trub and hop particles collect in the strainer, meaning less of these end up in the primary fermenter. Whole hops are the most traditional form, and with the variety and quality available to homebrewers today, they are definitely a fine choice.

Hop pellets: Hop pellets are hop flowers that have been pulverized and formed into small pellets. The compacted pellet means most of the hop components are shielded from exposure to air, resulting in good storage stability. The pulverizing process does break open the lupulin glands, and some brewers believe this harms the aroma. The effects on aroma are debatable, however, and the benefits of pelletization are evidenced in part by the fact that most commercial brewers use pellet hops. It is



Hop flowers



Hop pellets

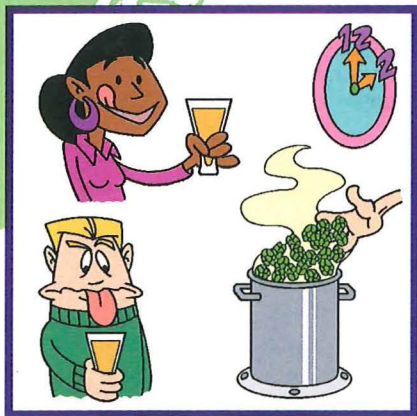


Hop plugs

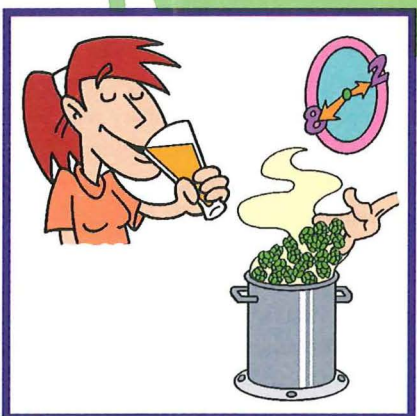


Hop extracts

PHOTOS COURTESY OF HOP UNION USA,
EXCEPT HOP PLUG PHOTO BY GALEN NATHANSON.
ILLUSTRATIONS BY STEPHANIE JOHNSON



Hops added at the beginning of the wort boil contribute bitterness to beer.



Hops added at the middle of the boil contribute flavor.



Hops added at the end of the boil provide aroma.

documented that the oil fraction of hop pellets is different from whole hop versions because some oils do not survive the pelletization process. Whole hops are not necessarily better than pellets, just different in composition. Pellets are easy to store and settle quickly from the wort after boiling.

Hop plugs: This relatively new form of hops combines the benefits of pellets and whole hop flowers. Plugs are made by compressing whole hop flowers into small hockey-puck-shaped disks. The compression limits exposure and most of the lupulin glands remain undamaged. When added to wort or beer, the plugs expand to take their original whole-flower shape.

Hop extracts: In an effort to improve consistency and achieve control over their products, commercial brewers have developed methods to extract individual hop components for addition to their beers. Hop extracts are readily available and, in fact, are used to provide the hop bitterness in many hopped beer kits. Extracts are quite limited with regard to varietal selection and are very potent. They can be a good way for homebrewers to adjust the bitterness of their beers before bottling. Follow the manufacturer's instructions and consider experimenting on a small scale before adding them to a full batch.

Hop Storage

Hops are harvested each fall, but can deteriorate quickly, so it is important to store them properly. Storage conditions should be designed to reduce exposure to heat and air. Look for a supplier that packages hops in oxygen-barrier plastic or foil bags that have been purged with CO₂ or nitrogen before filling. If you need to store unused hops at home, place them in an oxygen-barrier plastic bag, squeeze all the air out and keep them in the freezer. If your hops came in oxygen-barrier plastic or foil bags, you can squeeze out as much air as possible and tape the bag closed. Many homebrewers store hops in sealed glass jars in the freezer.

Using Hops

Hops can contribute bitterness, flavor and aroma to beer. Their specific effect depends on the variety and amount used, and

the method of use. In most cases, the hops are boiled with the wort. Here is what happens as the wort boils:

🌿 **More than 45 minutes:** When hops are added at the beginning of the boil most of the essential oils are boiled away, thus removing most of the hop flavor. Bittering acids are isomerized, meaning they stay in the solution after the wort is cooled. This is why long boils increase hop bitterness.

🌿 **10 to 45 minutes:** The most volatile oils boil away, taking much of the hop aroma with them. Some hop flavor is retained. Bittering acids begin to be isomerized.

🌿 **0 to 10 minutes:** Essential oils begin to dissolve into the wort. Hop flavor and aroma result. Almost no bittering acids are isomerized.

This means you can get different effects by adding different amounts and varieties of hops at several points throughout the boil. To simplify, early additions extract only bitterness; additions in the middle of the boil contribute flavor and additions in the last few minutes allow you to capture some of the aromatic oils.

Bittering Additions

Bitterness is a drying, sometimes sharp bite on the back of the tongue. The hop acids that cause bitterness are called alpha acids, which are insoluble in cold water unless boiled. Hop alpha acids vary slightly from season to season for each hop variety as a result of growing conditions. Any hops you purchase should be labeled with their alpha-acid content.

Boiling slowly causes a chemical change called isomerization that keeps the bittering acids in solution. It takes about an hour of boiling to isomerize the majority of alpha acids. The longer the boil, the more isomerization, up to a point, and therefore, more bitterness results.

A simple calculation allows the homebrewer to estimate the amount of bitterness in a batch. The alpha acid unit (AAU), or Homebrew Bittering Unit (HBU), has been devised for this purpose. In a five-gallon batch: $AAU = HBU = (\text{oz. of bittering hops added}) \times (\text{alpha-acid content of hops})$

Another factor that plays a role in determining bitterness, or the hop utilization, is the wort gravity. The higher the specific grav-

ity of the wort, the less efficient the extraction of bitterness will be. Brewers who boil a concentrated wort and add water to achieve the final volume may need to use more hops to get the same amount of bitterness had the full volume been boiled. For example, boiling one pound of extract per gallon of water for 60 minutes will result in approximately 30 percent utilization of hops while five pounds of extract per gallon of water reduces the utilization of hops to about 18 percent.

The bitterness desired depends on the style of beer being made. In general, stronger, maltier beers require more bitterness to get a balanced flavor. Many books provide references on the appropriate AAU value for various styles of beer. Here are a few examples: American lager (2 to 3 AAU), Czech Pilsener (8 to 10 AAU), pale ale (7 to 12 AAU), dry stout (10 to 15 AAU), German weizen (3 to 4 AAU), English brown ale (6 to 9 AAU), barley wine (20 to 25 AAU), Bavarian bock (7 to 10 AAU).

Flavor Additions

Hops can contribute more than bitterness to the flavor of beer. Some varieties have spicy flavors, others are floral or citrusy. Obtaining these flavors requires some degree of boiling or dry-hopping (see page 72). A boil of about 15 minutes is long enough to extract the flavor components. Longer boils tend to evaporate these components and develop bitterness. There is no simple, reliable method to calculate hop flavor. Experimentation and experience are the best guides.

Aroma Additions

Hop aroma is contributed by volatile oils. It can be difficult to capture these oils because the most aromatic ones are also the most volatile, so they tend to evaporate in the boil or get pushed out with the CO₂ produced during fermentation. Your aroma hops should be boiled a few minutes to break open all of the lupulin glands, but the pot should

be at least partially covered at this point to limit evaporation. Again, experimentation is the best guide to optimizing hop aroma. In general, in a five-gallon batch, one-half ounce gives a mild but noticeable aroma, one ounce (28 g) gives a distinct aroma and two ounces (57 g) give a strong aroma.

Hop Removal

If you chose to boil whole hops in your wort, cool the wort then pour the wort and hops through a strainer placed in a funnel (both cleaned and sanitized) and into your fermenter. In addition to removing hops, the strainer will help aerate your cooled wort. If you used hop pellets you have a few options: (1) let them pass right into the primary fermenter (they will settle to the bottom of the fermenter and you'll be able to rack your beer off of the yeast and hop sediment and into a secondary fermenter); or (2) cool the wort in the kettle and allow the hops to settle to the bottom, then rack the cooled wort off the

Variety	Alpha-Acid	Description	Typical Uses
Bramling Cross	(5-7%)	Crossbred Golding. Dual purpose bittering/aroma hop.	British ales
Brewers Gold	(6-8%)	Traditional British bittering hop; rough, strong aroma,	British ales and dark German lagers very good for dark ales.
Bullion	(7-9%)	Very similar to Brewers Gold.	Dark ales
Cascade	(4-6%)	Floral, citrusy, popular in American pale ales. Good for bittering, flavor and aroma.	American ales and lagers
Challenger	(7-10%)	Popular British bittering hop. Spicy aroma.	British ales
Chinook	(12-14%)	Very bitter; coarse flavor, spicy aroma.	American ales and lagers
Centennial	(9-11%)	Strong bittering hop with a floral/citrus aroma similar to Cascade.	American ales
Cluster	(6-8%)	American bittering hop; harsh, pungent aroma.	American lagers
Eroica	(9-12%)	Very bitter; strong aroma. Good general purpose bittering hop.	Ales
Fuggle	(4-6%)	Traditional ale hop; mild, pleasant, spicy/woody aroma.	British ales
Galena	(11-13%)	Clean, bitter flavor; pleasant, slightly floral aroma.	American ales and lagers
Kent Golding	(4-6%)	The premium ale hop; very fine, rich, slightly flower aroma.	British ales
Hallertauer	(3-5%)	Transplanted Hallertauer Mittelfrüh. Traditional lager hop; spicy, mild aroma.	German ales and lagers, Belgian ales
Liberty	(3-5%)	Hallertauer Mittelfrüh triploid — similar character.	American and German ales and lagers
Mt. Hood	(3-5%)	Hallertauer Mittelfrüh triploid — similar character.	American and German ales and lagers
Northdown	(7-10%)	Dual-purpose ale hop; mild aroma.	British ales
Northern Brewer	(7-9%)	Good all-purpose bittering hop; minty flavor and strong aroma; Good in California common beers.	English ales and German lagers
Nugget	(12-15%)	Extremely bitter; rich, herbal flavor. Good, economical bittering hop.	General-purpose bittering
Olympic	(11-13%)	Extremely bitter, strong flavor.	American ales and lagers
Perle	(6-9%)	Very good, clean bittering hop, pleasant spicy character similar to Hallertauer.	German lagers and ales
Pride of Ringwood	(10%)	Australian bittering hop, moderate aroma.	Australian ales and lagers
Progress	(5-7%)	Dual-purpose ale hop; strong, fruity aroma.	British ales
Saaz	(2-5%)	The premium lager aroma hop; rich, spicy, peppery aroma.	German lagers and Pilseners
Spalt	(2-4%)	Fine lager aroma hop; mild, spicy/herbal aroma.	German lagers
Styrian Golding	(4-6%)	Soft bitterness, herbal/floral aroma.	English ales, Belgian ales
Target	(9-12%)	Strong bittering hop, rough aroma.	English ales
Tettnanger	(3-5%)	Traditional lager aroma hop; spicy/herbal character, very aromatic.	German lagers
Willamette	(3-5%)	Seedless Fuggle triploid; fruity/floral aroma.	American and British ales

Hops

sediment and into a primary fermenter. Another alternative for either form of hops is the use of a hop bag. Hop bags, to which you add whole hops or pellets, perform like large tea bags and allow you to remove the bag, hops and all, without a mess. If you choose hop bags, increase your hopping rate by 10 percent because utilization is diminished when the hops are restricted by a bag.

Dry Hopping and Hop Teas

Many brewers find it difficult to obtain sufficient hop flavor and aroma in their beers. It is possible to impart additional hop character during or after fermentation by dry-hopping or adding a hop tea.

Dry-hopping is the practice of adding hops directly to the fermenter. This additional exposure adds both flavor and aroma, but it can make racking difficult, especially when plugs or whole hops are used. Dry-hopping in the primary fermenter allows more time for the hops to settle out before bottling, but it also allows some of the aroma to be removed with the CO₂ gas expelled during fermentation. Dry-hopping in the secondary fermenter with pellets reduces clarification problems and retains good hop character. Start with one ounce (28 g) in a five-gallon batch.

A hop tea is made by adding hops to a cup (237 mL) of 160- to 180-degree-F (71- to 82-degree-C) water, allowing to steep for a few minutes then straining the tea into the beer. Whole hops or plugs are easiest to strain. Another alternative is to use a hop bag or stainless-steel tea ball to contain the hops and simplify removal. Making hop tea is an easy way to add aroma at bottling time. The hops should not be boiled, especially in alkaline water, because harsh tannins could be extracted. Try one ounce of hops to make one cup of tea for a five-gallon batch.

Hop Varieties

Many varieties of hops are available, all differing in bittering strength (indicated by their alpha-acid content), aromatic strength and flavor-aroma profile. Varieties are generally characterized as being bittering hops or aroma hops. Actually, all hops can pro-

vide bitterness and aromatic oils. Through the years brewers have developed preferences for the aromas in certain varieties, but in most cases these aroma hops are not very bitter. Other varieties have a harsh aroma and flavor, but they contribute a great deal of bitterness. These "bittering hops" are valued for reasons of economy. Less is required for a given bitterness level. Recent scientific work has resulted in the development of a number of dual-purpose hops that have both a high alpha-acid content and a pleas-

ant flavor-aroma profile. See page 71 for descriptions of the most common hop varieties available to homebrewers.

Dave Bone, former engineer, has been homebrewing for seven years. He founded Austin Homebrew Supply in late 1991 and sold the business in November 1995 so he could build specialty wood furniture and supplies for Montessori schools.

A version of this article originally appeared in Southwest Brewing News, December 1995-January 1996.



Mile High Home Brew Supply

**WE WILL MEET OR BEAT
ANY OTHER RETAILER'S
PRICE ON ANY ITEMS WE
REGULARLY STOCK***

• GRAINS • BOOKS

• STARTER KITS

• THE PARTY PIG™

• INGREDIENT KITS

• PELLET & LEAF HOPS

• DRY MALT EXTRACTS

• DRY & LIQUID YEASTS

• SYRUP MALT EXTRACTS

• FULL LINE OF EQUIPMENT



• ALEXANDERS

• BLACK ROCK

• COOPERS

• EDME

• GLENBREW

• IREKS

• JOHN BULL

• MORGANS

• MUNTON & FISON

CALL FOR A FREE CATALOG

1-800-636-4945



**Mile High Home Brew Supply
PO Box 27973, Prescott Valley, AZ 86312**

* Either mail or fax us the lower price from any legitimate home brew retailer, and we will match it or beat it! Closeouts, sales, and special promotions do not apply.



Modesto Homebrew Supply

Finally someone has made a logical brew tower system!

"The Penquat Brew Tree"

Unique raise and lowering system on mash tun side to fill or empty before or after using no effort!

Designed for the budget minded Complete turn key system!

RIMS adaptable!

Stainless steel keg designed or custom brew kettles up to 28 gallon available!

Unlike bulky "water fall" systems the Penquat Brew Trees' frame can store flat!

Assemblage is fast and easy!

U.P.S. shippable!

Prices start at just \$999.95!



To see just how easily the Brew Tree works and is to assemble, Order our VHS tape on "Using the Penquat Brew Tree" for \$19.95 plus \$3.95 for shipping.

You will not only receive the tape but also detailed instructions and a parts list so you can, if you are so inclined, build your own "Brew Tree"!

If you decide to order from us, you will be given full credit for your tape!

Modesto Homebrew Supply is a complete homebrew shop with grains, hops, extracts and supplies that has been established since 1991.

What if you have already made some kettles but just need a stand, burner or parts? No Problem! We stock a complete line of stainless Steel fittings you need to complete your own home made system. Everything from ball valves to false bottoms.



REMEMBER PENNY PENQUAT'S MOTTO,
"RELAX, ENJOY LIFE, POP A PENQUAT!"



To order call: 1-800 CXS-BREW all other inquiries 1-209-521-9995

*less shipping and handling / Please allow 3 weeks for delivery / The term "Penquat" is a registered trademark

Beer and wine hobby



Greater Boston's oldest and most complete homebrewing supplier and mail order house.

- QUALITY SUPPLIES
 - EXCELLENT SERVICE
 - LARGEST SELECTION
 - 24 HOUR ORDERLINE AND FAST DELIVERY
 - FULLY STOCKED WAREHOUSE STORE
- (617) 933-8818

FREE CATALOG 800-523-5423

180 New Boston Street, Woburn, MA 01801.

FAX: (617) 662-0872

New nano-Brewing System



55 Gallon Steam-fired System

- (4) 55 Gallon SS Kettles
- (2) Steam Heated
- (2) with Screens & Supports
- (1) 300kbtu Steam Generator
- (1) Grain Pump
- (2) Liquid Pumps

Brew up to 3 barrel batches!

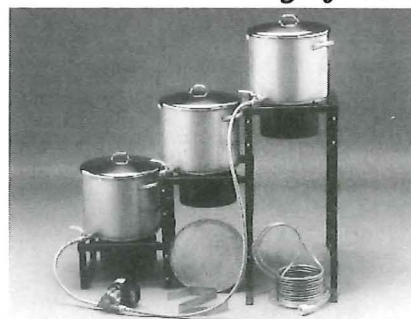
"The nano-, pico- & femto-brewing systems for individuals, clubs, pilot plants or breweries that are looking for an efficient, cost effective way to brew 5 to 100 gallon batches."

Original pico-Brewing System



**3 Kettle - 15.5 Gallon System
with 2 pumps - \$1,140 + shipping**

New femto-Brewing System



5 Gallon Stove-top System

- (3) 5 gallon Copper-clad Kettles
 - (1) Copper Screen & SS Support
 - (1) Copper Wort Chiller
- System Price \$350 + shipping**
Pumps & Burners available

pico-Brewing Systems, Inc.

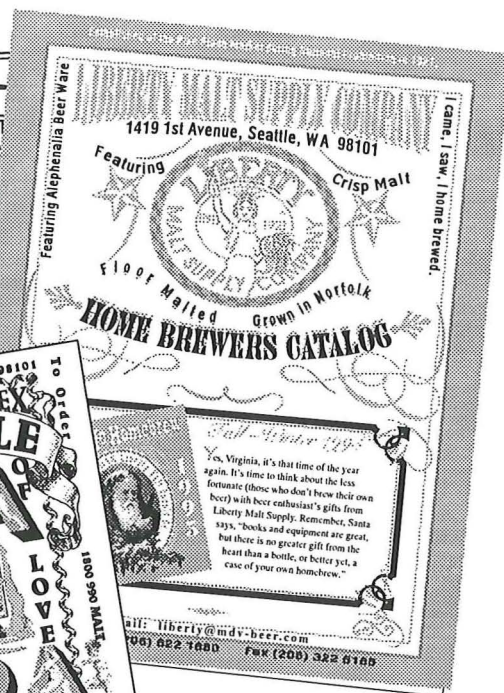
8383 Geddes Road
Ypsilanti, MI 48198-9404
Phone (313) 482-8565
FAX (313) 485-2739

"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 Kama Sutra India
Pale Ale!—*

#3055 Kama Sutra India
Pale Ale Recipe Pack-
makes five gallons of the
finest IPA -\$24.95



To order, or for a free
Liberty Malt Catalog:
1-800-990-MALT

6258

FREE CATALOG IREKS (4) 6.6#100% WHEAT LIQUID MALT ONLY \$55.80

**HOMEBREWING
DEPOT**

PREMIUM BEERS
INGREDIENTS
SUPPLIES

9509 W. GREENFIELD AVE., WEST ALLIS, WI 53214
1-800/413-BREW
PHONE 414/778-0781 * FAX 414/778-0900
E-MAIL DEPOT@EARTH.EXECPC.COM

NORTHWESTERN 12 BOXES \$58.80 KEGGING SYSTEM W/15 LBS CO₂ TANK \$149.95
STARTER KITS FROM \$39.95 5 GAL. S.S. POT W. LID ONLY \$27.90 5 GAL. CARBOY \$14.95
U.S. TWO & SIX ROW MALTS 50 LBS ONLY \$21.95 USED CORNY KEGS ONLY \$24.95

**BACCHUS
and
BARLEYCORN
Ltd**

fermentation specialists

KANSAS FIRST, KANSAS LARGEST

with over 50 years experience

We stock the finest quality products.
If we don't have what you're looking for...
Just ask. We'll get it!

Don't compromise on quality, we don't!

Fast, Friendly, Personalized Service

We ship all over the world. Why not to you?
free catalogue

Bacchus & Barleycorn, LTD.
6633 Nieman Road
Shawnee, Kansas 66203
913 962 2501

WINNERS

C I R C L E

James Spence



Presented for your summer brewing pleasure are the following winning recipes from the AHA 1995 National Homebrew Competition. If you don't feel like brewing an all-grain batch of beer, check out Mike Hahn's German Pilsener recipe for a great extract-based, heat-busting, quaffable summer homebrew. You also can convert these recipes by using an amount of extract equal to about 80 percent of the grain amounts listed. For example, you can come close to Michael Bowe's beer by using 20 pounds (9 kg) of malt extract syrup in place of the

25 pounds (11.6 kg) of two-row and Carastan malt he used for a 10-gallon (38-L) batch, and steeping the remaining grains in a grain bag until your wort reaches 170 degrees F (77 degrees C). With a little tinkering you can learn to adjust all-grain recipes for your extract brewing procedure.

Don't forget to enter the AHA 1996 National Homebrew Competition — entries are due April 1 through 12. If you don't have the entry information, contact the American Homebrewers Association or see *Zymurgy* Winter 1995 (Vol. 18, No. 5).



FRUIT MEAD

BRONZE MEDAL
AHA 1995 NATIONAL HOMEBREW COMPETITION
Dan Goulet
Atascadero, California
"Prickly Pear Cactus Fruit Mead"
Still Melomel (very sweet)



Ingredients for 6 gal (23 L)

- 14 lb sage honey (6.4 kg)
- 12 lb prickly pear fruit (5.4 kg)
- 3/10 oz organic yeast nutrient (9 g)
- 2 1/2 tsp Sparkolloid® (12.3 mL) (in secondary)
- Premier Cuvée dried yeast
- 1 oz tartaric acid (28 g) (at bottling)

- Original specific gravity: 1.110
- Final specific gravity: 1.045

- Boiling time: five min.
- Primary fermentation: 11 days at 55 degrees F (13 degrees C) in glass
- Secondary fermentation: seven weeks at 55 degrees F (13 degrees C) in glass
- Age when judged (since bottling): three months

Brewer's specifics

Boil honey for five minutes. Remove from heat and add mashed fruit. Let stand for 30 minutes at 160 degrees F (71 degrees C), chill must then pitch yeast.

Judges' comments

"Lovely pear fruity flavor. Honey sweetness behind but quite evident. Alcohol quite subdued by the sweetness."

"Nice up-front honey and pear character. Tart aftertaste. Could use a little more fruit flavor."

"Good balance of fruit and acidity. Pleasant aftertaste fades nicely. Honey flavor does not stand out."



ENGLISH & SCOTTISH STRONG ALE



SILVER MEDAL
AHA 1995 NATIONAL HOMEBREW COMPETITION
Michael Bowe
Mar Vista, California
English Strong Ale

Ingredients for 10 gal (38 L)

- 19 lb American two-row malt (8.62 kg)
- 6 lb light Carastan malt (2.72 kg)
- 1 lb Carastan malt (0.45 kg)
- 1 lb Belgian aromatic malt (0.45 kg)
- 1 lb Belgian biscuit malt (0.45 kg)
- 3 1/2 oz Northern Brewer hops, 7% alpha acid (99 g) (60 min.)
- 4 oz Goldings hops, 5% alpha acid (113 g) (20 min.)
- Wyeast London Ale No. 1028 liquid yeast
- 10 oz corn sugar (283 g) (to prime)

- Original specific gravity: 1.070
- Final specific gravity: 1.020
- Boiling time: 90 min.
- Primary fermentation: seven days at 65 degrees F (18 degrees C) in glass
- Secondary fermentation: 20 days at 65 degrees F (18 degrees C) in glass
- Age when judged (since bottling): 13 months

Brewer's specifics

Mash grains at 122 degrees F (50 degrees C) for 30 minutes. Raise temperature to 156 degrees F (69 degrees C) for two hours.

Judges' comments

"Aftertaste is a bit sour. Good malt and hop balance. Very good beer."

"Malt and hops combination appropriate. A little sour at the end. A little thin."



ENGLISH-STYLE PALE ALE



SILVER MEDAL
AHA 1995 NATIONAL HOMEBREW COMPETITION
Kelly Mower & Brent Stromness
Salt Lake City, Utah
"1492 Ale"
India Pale Ale

Ingredients for 6 gal (23 L)

- 14 lb two-row malt (6.35 kg)
- 1 3/4 lb German Pilsener malt (0.8 kg)
- 1 lb 70 to 80 °L crystal malt (0.45 kg)
- 1/2 lb wheat malt (0.23 kg)
- 1 3/4 lb CaraPils malt (0.8 kg)
- 1/2 lb Briess Special roast malt (0.23 kg)
- 1 oz Columbus hops, 13.6% alpha acid (28 g) (60 min.)
- 1/2 oz Columbus hops, 13.6% alpha acid (14 g) (10 min.)
- 1/2 oz Columbus hops, 13.6% alpha acid (14 g) (5 min.)
- 1/2 oz Columbus hops, 13.6% alpha acid (14 g) (finish)
- 1/2 oz Columbus hops, 13.6% alpha acid (14 g) (dry)
- Wyeast Special London Ale No. 1968 liquid yeast
- 4/5 cup corn sugar (189 mL) (to prime)

- Original specific gravity: 1.066
- Final specific gravity: 1.022
- Boiling time: 70 min.
- Primary fermentation: 12 days at 65 degrees F (18 degrees C) in glass
- Secondary fermentation: seven days at 65 degrees F (18 degrees C) in glass
- Age when judged (since bottling): five months

Brewers' specifics

Mash grains at 157 degrees F (69 degrees C) for 55 minutes.

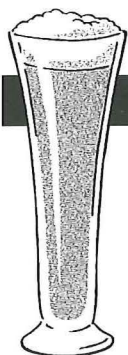
Judges' comments

"Deep copper color. Very slight haze. Low to medium malt, medium bitterness. Good balance. Needs more malt and hops."

"Malty sweetness and high fruity esters which detract from hop bitterness. Good hop bitterness, but too many competing flavors."

"Malty sweet flavor with high hop finish. Could use even more bittering hops. Still slightly sweet. More hops could add to this and put beer more into style."

"Malty with just enough hops to get it into style. Alcohol evident. No off-flavors evident. Could use a hint more hops but nice example."



CLASSIC PILSENER



BRONZE MEDAL

AHA 1995 NATIONAL HOMEBREW COMPETITION

Mike Hahn

Salt Lake City, Utah

"Hahn's German Pilsener"

German Pilsener



GERMAN-STYLE ALE



BRONZE MEDAL

AHA 1995 NATIONAL HOMEBREW COMPETITION

Carl Eidbo

Fargo, North Dakota

"Off-Peak Alt"

Düsseldorf-Style Altbier

Ingredients for 5 gal (19 L)

- 6 lb William's German Moravian Pilsener malt extract (2.72 kg)
- 3/4 oz Hallertauer Hersbrucker hop plugs, 2.9% alpha acid (21 g) (60 min.)
- 1/2 oz Saaz hop plugs, 3.1% alpha acid (14 g) (60 min.)
- 1/4 oz Hallertauer Hersbrucker hop plugs, 2.9% alpha acid (7.13 g) (30 min.)
- 1/4 oz Saaz hop plugs, 3.1% alpha acid (7 g) (30 min.)
- 1/4 oz Hallertauer Hersbrucker hop plugs, 2.9% alpha acid (7 g) (15 min.)
- 1/4 oz Saaz hop plugs, 3.1% alpha acid (7 g) (15 min.)
- 1 oz Hallertauer Hersbrucker hop plugs, 2.9% alpha acid (28 g) (2 min.)
- Wyeast Pilsener lager No. 2007 liquid yeast
- 3/4 cup corn sugar (177 mL) (to prime)

- Original specific gravity: 1.038
- Final specific gravity: 1.006
- Boiling time: 60 min.
- Primary fermentation: 12 days at 40 degrees F (4 degrees C) in plastic
- Age when judged (since bottling): six months

Brewer's specifics

Boil for 60 minutes.

Judges' comments

"Good aroma. Great beer. Keep up the good work."

"Well-balanced. Very slight drying effect (astringency) but not bad. Smooth finish. Slight grassiness in aroma. Very nice."

"Taste leaves me wanting more. Flavor is thin though the body and mouthfeel is medium to thin. A clean beer. Good effort."

Ingredients for 11 gal (42 L)

- 8 lb American two-row malt (3.63 kg)
- 6 lb American six-row malt (2.72 kg)
- 2 lb Vienna malt (0.91 kg)
- 4 lb 20 °L crystal malt (1.81 kg)
- 1/4 lb black patent malt (0.11 kg)
- 4 oz Spalt hops, 5% alpha acid (113 g) (60 min.)
- 1 oz Spalt hops, 5% alpha acid (28 g) (30 min.)
- 1 oz Spalt hops, 5% alpha acid (28 g) (15 min.)
- Wyeast German Ale No. 1007 liquid yeast
- force carbonated in keg

- Original specific gravity: 1.048
- Final specific gravity: 1.012
- Boiling time: 60 min.
- Primary fermentation: three days at 70 degrees F (21 degrees C) in glass
- Secondary fermentation: 30 days at 60 degrees F (16 degrees C) in glass
- Tertiary fermentation: 14 days at 42 degrees F (6 degrees C) in stainless steel
- Age when judged (since bottling): two months

Brewer's specifics

Mash grains at 152 degrees F (67 degrees C) for 60 minutes.

Judges' comments

"Malt flavor predominates. Good balance with hops. A good example of Alt. Very clean."

"Very nice, rich maltiness with toffee sweetness. Hop balance is quite nice with pronounced bitter finish. Very impressive effort."

SPECIALTY BEER



SILVER MEDAL
AHA 1995 NATIONAL HOMEBREW COMPETITION
Michael Lentz
College Station, Texas
"King Henry's Revenge"
Smoked Maple Barley Wine

Ingredients for 6 gal (23 L)

- 20 lb two-row malt (9.1 kg)
- 2 lb CaraPils malt (0.91 kg)
- 2 lb 20 °L Munich malt (0.91 kg)
- 2 lb smoked pale malt (0.91 kg)
- 1 lb 90 °L crystal malt (0.45 kg)
- 1/4 lb black barley (0.11 kg)
- 3 oz Eroica hops, 11.5% alpha acid (85 g) (80 min.)
- 1 oz Northern Brewer hops, 7.1% alpha acid (28 g) (10 min.)
- 2 lb maple syrup (0.91 kg) (end of boil)
- 1 1/2 oz Cascade hops, 6.4% alpha acid (42.8 g) (dry, two weeks)
- Wyeast Irish Ale No. 1084 liquid yeast
- Wyeast Pasteur Champagne No. 3021 liquid yeast

- Original specific gravity: 1.116
- Final specific gravity: 1.027
- Boiling time: 80 min.
- Primary fermentation: six days at 70 degrees F (21 degrees C) in glass
- Secondary fermentation: 14 days at 70 degrees F (21 degrees C) in glass
- Age when judged (since bottling): 12 months

Brewer's specifics

Smoke the moistened two-row pale malt over low heat with wet hickory wood in a kettle grill for one hour, stirring every 15 minutes. Dry in 250-degree-F (121-degree-C) oven for 20 minutes. Use a double step-infusion mash. Use 13 1/2 pounds (6 kg) of combined grains for each mash. Mash grains at 122 degrees F (50 degrees C) with three gallons (11.4 L) of water for 30 minutes. Raise to 152 degrees F (67 degrees C) by adding 1 1/2 gallons of 203-degree-F (95-degree-C) water and hold for 10 minutes. Raise to 160 degrees F (71 degrees C) until conversion. Sparge each mash with four gallons (15 L) 172-degree-F (78-degree-C) water. Collect first four gallons (15 L) of each runoff for a total of eight gallons (30 L). Add maple syrup at end of boil.

Judges' comments

"Smokiness sneaks in at end. Warming and nice. Maple tough to pick out. Nice job."

"Excellent. Complex, sweet and smoky with long butterscotch, smoky finish. Special ingredients represented well."

SMOKED BEER



BRONZE MEDAL
AHA 1995 NATIONAL HOMEBREW COMPETITION
Robert G. Drousth
Madison, Wisconsin
"Smoky Logger"
Bamberg-Style Rauchbier

Ingredients for 12 gal (45 L)

- 17 lb Weyermann rauch malt (7.71 kg)
- 5 lb Schreier two-row malt (2.27 kg)
- 2 lb DeWolf-Cosyns CaraPils malt (0.91 kg)
- 2 oz Hallertauer hops, 6.3% alpha acid (57 g) (60 min.)
- 2 oz Spalt Select hops, 4.7% alpha acid (57 g) (30 min.)
- Advanced Brewers Scientific-005 Czech lager liquid yeast force carbonated in keg

- Original specific gravity: 1.050
- Final specific gravity: 1.018
- Boiling time: 60 min.
- Primary fermentation: seven days at 60 degrees F (16 degrees C) in stainless steel
- Secondary fermentation: six weeks at 40 to 33 degrees F (7 to 1 degrees C) in stainless steel
- Age when judged (since bottling): two months

Brewer's specifics

Add 20 quarts (19 L) of 133-degree-F (56-degree-C) water to grain and hold temperature at 121 degrees F (49 degrees C) for 30 minutes. Raise temperature to 128 degrees F (53 degrees C) then add 6 quarts (5.7 L) of 194-degree-F (90-degree-C) water and hold temperature at 155 degrees F (68 degrees C) for 60 minutes. Mash out at 176 degrees F (80 degrees C). Sparge with 64 quarts (60.5 L) of 176-degree-F (80-degree-C) water.

Judges' comments

"Some astringency on the tongue. Good smoke flavor. Could use some hop-malt balance."

"A little low on malt. Astringent aftertaste. Very nice smoky flavor but it is a little astringent."

"A little too bitter. Nice smoke and malt balance. Some astringency. Nice effort."

Every gold-medal-winning recipe from the AHA 1995 National Homebrew Competition was printed in Zymurgy Special Issue 1995 (Vol. 18, No. 4) "Winners Circle."





RENOWNED BROWN CLUB-ONLY COMPETITION WINNER



Vince Shumski
York, Pennsylvania
"Dangerfield Mild
(It don't get no respect!)"
English Mild

Ingredients for 5 1/2 gal (21 L)

- 7 1/2 lb Hugh Baird pale ale malt (3.4 kg)
 - 1 lb Gambrinus honey malt (0.45 kg)
 - 1 lb CaraVienne malt (0.45 kg)
 - 1/4 lb black malt (0.11 kg)
 - 1/4 lb Hugh Baird chocolate malt (0.11 kg)
 - 1/4 lb Munton & Fison torrefied wheat (0.11 kg)
 - 1 oz East Kent Golding hops, 4.9% alpha acid (28 g) (70 min.)
 - 1 oz Liberty hops, 3.4 % alpha acid (14 g) (28 g) (70 min.)
- Yeast Culture Kit Co. Whitbread liquid yeast
force carbonate in keg

- Original specific gravity: 1.036
- Final specific gravity: 1.011
- Boiling time: 90 min.
- Primary fermentation: 10 days at 68 degrees F (20 degrees C) in glass
- Secondary fermentation: 14 days at 55 to 58 degrees F (13 to 14.5 degrees C) in glass
- Age when judged (since bottling): one month

Brewer's specifics

Mash grains at 154 degrees F (68 degrees C) for one hour. Raise temperature to 162 degrees F (72 degrees C) for 10 minutes. Sparge with 4 1/2 gallons (17 L) 165-degree-F (74-degree-C) water.

Judges' comments

"Very drinkable — I could drink several of these. My preference would be to back off hops to let your wonderful malt come through."

"Chocolate malt and hop flavors are evident. No off-flavors are present. Good drinkable beer."

"A touch of roastiness is nice. Good hop balance with a fairly smooth malt flavor. Maybe just a little too much hop bitterness in the aftertaste."

"Roasted malt flavor. Possibly a little too much hop in flavor. Some sweetness at end is appropriate."

"Nice malt and hop balance a roasted grain bitterness. Very good beer."

"Nice malt flavor of chocolate. Perhaps this leans more toward an English brown than a mild. Very nice beer."

"Malt evident. Some hop. Finishes sweet, fairly well-balanced. Maybe even a little big for a mild. Good job."



BEST OF FEST CLUB-ONLY COMPETITION WINNER



Tom Strand
Tacoma, Washington
"Helles Münchner
Oktoberfest"
Vienna

Ingredients for 4 1/2 gal (17 L)

- 5 lb Coopers light malt extract syrup (2.27 kg)
- 3 lb Durst Munich malt (1.36 kg)
- 1 1/2 oz Czech Saaz hops, 1.9% alpha acid (43 g) (60 min.)
- 1/2 oz Hallertauer Hersbrucker hops, 3.2% alpha acid (14 g) (60 min.)
- 1/2 oz Hallertauer Hersbrucker hops, 3.2% alpha acid (14 g) (30 min.)
- 1/2 oz Czech Saaz hops, 1.9% alpha acid (14 g) (30 min.)
- 1/2 oz Tettnanger hops, 4.5% alpha acid (14 g) (2 min.)
- 1/2 oz Hallertauer Hersbrucker hops, 3.2% alpha acid (14 g) (2 min.)

Wyeast Czech Pilsener No. 2278 liquid yeast
force carbonated in keg

- Original specific gravity: 1.058
- Final specific gravity: 1.012
- Boiling time: 90 min.
- Primary fermentation: two weeks at 60 degrees F (16 degrees C) in glass
- Secondary fermentation: three weeks at 60 degrees F (16 degrees C) in glass
- Age when judged (since bottling): eight months

Brewer's specifics

Mash grains at 122 degrees F (50 degrees C) for 20 minutes (acid rest). Remove one-third of the mash and boil for 10 minutes. Return the decoction to the main mash, raise temperature to 155 degrees F (68 degrees C) for one-half hour, then raise temperature to 160 degrees F (71 degrees C) for 15 minutes or until conversion. Sparge with 2 gallons (7.6 L) of 170-degree-F (77-degree-C) water. Add malt extract to wort and boil for 90 minutes.

Judges' comments

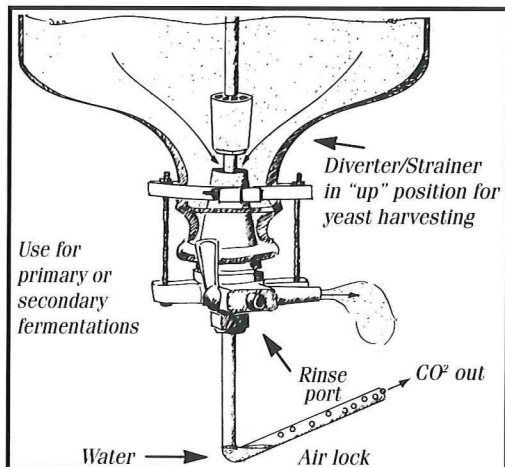
"Rich flavor with a nice balance of sweet malt, some Viennalike toasted flavor. Well-rounded and clean. Very good effort."

"Nice, clean, malty palate. Excellent example of style. Could use more complex malt profile. Outstanding example of style."

"Real nice maltiness. Hop flavor and bitterness comes through. Clean lager flavor."

Fermentap®

Innovative Brewing Techniques



- RACKS BEER WITHOUT SIPHONING.
- HARVEST YEAST SEDIMENT.
- ELIMINATE OXIDATION.
- LESS WASTED BEER.
- FITS 5 OR 6 1/2 GALLON CARBOYS.

Dealer inquiries welcome.
Contact your local supplier or call or write for name of dealer nearest you.

patent pending

P.O. Box 30175 ■ STOCKTON, CALIFORNIA 95213-0175
1-800-942-2750 ■ Mon. - Fri. ■ 9:00 - 6:00 pst
— Valve Kit Includes Stand —

Napa Fermentation Supplies

Quality Home Brewing
Equipment and Supplies
since 1983

Full line of brewing supplies
Free catalog
Mail and phone orders
Fast delivery

Napa Fermentation Supplies
P.O. Box 5839
575 Third St., Suite A
Napa, CA 94581

Retail Store Hours:
M-F 9 a.m. - 5 p.m.
Sat. 10 a.m. - 5 p.m.

Ph. (707) 255-6372
FAX (707) 255-6462
Out-of-state (800) 242-8585

Brewers Publications presents ...

NEW Brewing Lager Beer

by Gregory Noonan

Greg Noonan and Brewers Publications have revised and expanded one of the most popular and trusted technical books on brewing. *New Brewing Lager Beer* details the intricacies of world-class lagers and ales for professional and hobby brewers. With chapters detailing beer ingredients, decoction mashing and the most advanced brewing procedures, this is a book no intermediate or advanced brewer should be without. *New Brewing Lager Beer* delves into scientific brewing and lifts brewers to the next level of their craft.

5 1/2 x 8 1/2 • 384 pages • four-color soft cover • illustrations • Brewers Publications • ISBN 0-937381-46-2 • \$14.95

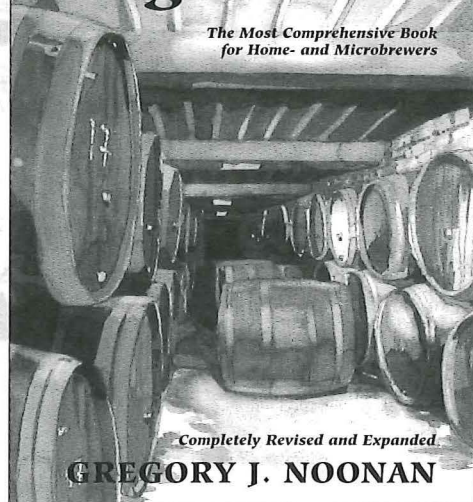


To place an order or request a free catalog contact Brewers Publications at
PO Box 1510, Boulder, CO 80306-1510, U.S.A.; (303) 546-6514; orders@aob.org;
or FAX (303) 447-2825. Information is also available on the World Wide Web at
<http://www.aob.org/aob>.

NEW and
COMPLETELY
REVISED

NEW Brewing Lager Beer

The Most Comprehensive Book
for Home- and Microbrewers



Completely Revised and Expanded

GREGORY J. NOONAN

Zym 19

WORLD OF WORTS

Charlie Papazian

Klibbety Jibbit Lager

Adjuncts — the very word brings cringes and raised hackles to many a homebrewer. In the name of purity, malt, hops, water and the whole-y ghost (yeast, known as godisgood in former times) homebrewers yearning for the full flavor of beer forsake everything for all-malt versions. But with the skill of an open-minded brewer it is possible to maintain the full flavor of malted barley while adding the character of other grain adjuncts. Grain adjuncts can add desirable character sought by most beer drinkers at one time or another — full-flavored beer with warm-weather drinkability. Now don't get me wrong, I do enjoy a cold all-malt porter on the warmest of summer days. My beer-drinking moods are as diverse as there is diversity among homebrewers.

Let's take on a fair perspective. If we tag any ingredient other than hops and malt as an adjunct, then we've got to include the red-ripe flavorful cherries and raspberries of Belgian lambics and American wheat beers, the roasted barley of stouts, the coriander and orange peel of some Belgian ales, the cinnamon in your holiday brew, the honey in your honey Pils and weizen, the chili pepper and chocolate in your Goat Scrotum Ale and all the other secret ingredients we have used to create the wonderful experience we have come to know as "homebrewed in the U.S.A."

So why is it we have such a negative reaction to rice and corn? I think I know why. We have let the large breweries define what we consider "adjunct beer." We've been

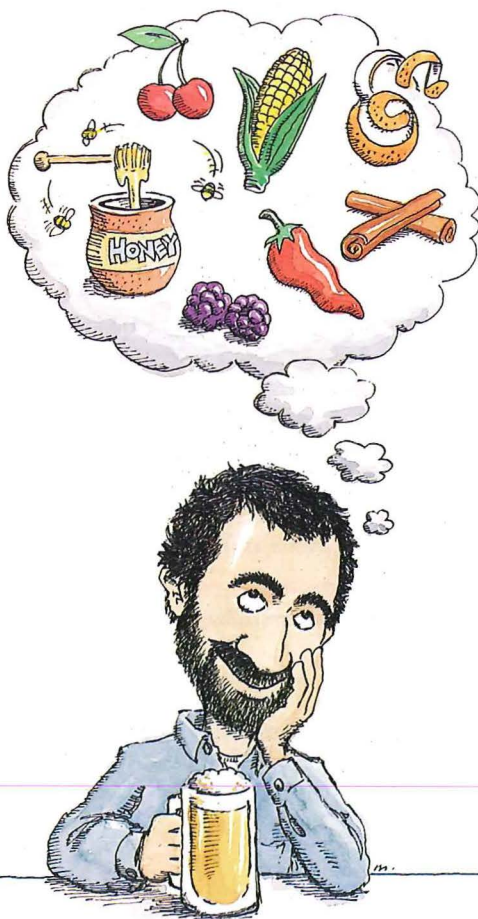
sucked into a general mind-set about these ingredients. They have manipulated these adjuncts in a way to brew beer that suits their needs. Along with their way of processing, let's not forget they have reduced the hop character and increased the carbonation to levels quite a few of us don't re-

ally care for any longer. It's a matter of taste. Their taste and ours. Let's not let their taste result in hang-ups we call our own.

Adjuncts. How many times does the word "cheap" precede this word? Wait a minute here. That flaked corn isn't any cheaper than some malts I use. And in some parts of the world corn is a lot more expensive than barley malt. So we've been duped. The word "cheap" really is a reaction to a taste many of us simply don't want any part of. I hear you! But in this day and age as homebrewers, adjuncts are only figuratively cheap. Let's focus on the qualities and the preferences we desire and what we can achieve as homebrewers. Our personal indignation shouldn't interfere with the possibilities of using ingredients to our advantage.

Have I heard small brewers and homebrewers criticize large brewers for the grain adjuncts they use? Have I heard the large brewers comically comment about the weird (say "adjuncts" please) ingredients craft-brewers use? Yes and yes. You see, it's relative, and all in what you do with the process. It's about what you like. It's about your perspective. And it's about not being a victim of someone else's mind-set.

Adjuncts. Klibbety Jibbit Lager is a full-flavored, light-bodied beer brewed with corn and flavored adequately with hops that many a homebrewer would love. Don't forget it's alive, unfiltered, unpasteurized and refermented in the bottle for conditioning. Hey, all of that does make a difference. Have you ever come across a commercial corn adjunct





beer like this? I think not, not and double not. It's the kind of a European lager with added flavor hops and fresh unfiltered character we've come to appreciate as beer enthusiasts. Don't let marketing taint your brain. If you let that happen you don't get to create your own thing anymore.

So that's the premise behind the formulation. This isn't an apology or a treatise on justification. It's about brewing it and enjoying it and realizing what naturally made, fresh, unpasteurized homebrew is always all about.

Oh, and about the bit of coriander in the mash. Coriander (and cinnamon) are powerful antioxidants, even in amounts below taste thresholds (as in this recipe). Have the benefits been analytically documented in this modern brewing age? No, not yet, to my brewing knowledge. But I bet they will be. Hold your breath and brew beer in the 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

- 5 lbs crushed two-row pale lager-type malt (2.2 kg)
- 1 1/2 lb flaked corn (0.68 kg)
- 1 tsp crushed coriander seed (4.9 mL)

Add to the mash runoff

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

And boil with hops

- 5 Homebrew Bittering Units (I used 1/2 oz or 14 g of 8.9% alpha acid German Northern Brewers whole hops)
- 4 Homebrew Bittering Units flavor hops (I used 3/4 oz or 21 g of 3% alpha acid Czech Saaz whole hops and 1/2 oz or 14 g of 3% alpha acid Hersbrucker Hallertauer whole hops) (30 min.)
- 2 Homebrew Bittering Units flavor hops (I used 1/2 oz or 14 g of 3% alpha acid Hersbrucker Hallertauer whole hops and 1/4 oz or 7 g of 3% alpha acid Czech Saaz whole hops) (15 min.)
- 1/4 tsp Irish moss (1.2 mL) (15 min.)

1/2 oz Hersbrucker Hallertauer hops for late aroma (14 g)

3/4 cup corn sugar (177 mL) (to prime) lager yeast

- Original gravity: 1.044 to 1.048 (11 to 12 °B)
- Final gravity: 1.008 to 1.012 (2 to 3 °B)
- IBUs: about 29

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

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

The total boil time will be 75 minutes. When 30 minutes remain add 4 Homebrew

Bittering Units of flavor hops. When 15 minutes remain add 2 Homebrew Bittering Units of flavor hops and Irish moss. After a total wort boil of 75 minutes turn off the heat and add aroma hops. Then strain wort 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 29 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, (3) 25 to 26 percent utilization was assumed for 75 minutes of boiling, 13 percent utilization was assumed for 30 minutes of boiling and 6 percent utilization was assumed for 15 minutes of boiling. Beginners and intermediate brewers should relax, don't worry and have a homebrew.

Primary ferment at temperatures between 50 and 60 degrees F (10 and 24 degrees C), and try to lager at about 55 degrees F (12.5 degrees C) for two months. Prime with sugar and bottle when fermentation is complete.

Relax. Don't worry. Have a homebrewed Klubbety Jibbit under the warm sunshine of your love.

Charlie Papazian is the founder of the American Homebrewers Association and president of the Association of Brewers. His books and CD-ROM have inspired thousands of homebrewers worldwide.



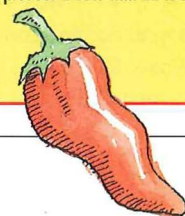
HOMEBREW BITTERING UNITS (HBUs) are a measure of the total amount of bitterness in a given volume of beer. Homebrew Bittering Units can easily be calculated by multiplying the percent of alpha acid in the hops by the number of ounces. For example, if 2 ounces of Northern Brewer hops (9 percent alpha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

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

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

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

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



DEAR

P R O F E S S O R

Plastic Prejudice?

Dear Professor,

What is the big deal behind the plastic fermenter debate? I have brewed award-winning brews and meads in plastic fermenters for years. Why does everyone else look down their noses at them? I understand the problems that harsh cleaning and sanitation can bring to these vessels, but I've never experienced a problem. Why don't more small, micro-micro-pico-type breweries use polyethylene fermenters? Wouldn't that be the most cost effective on a small scale? What's the drawback, if any, if they are properly cared for?

Luvn' my food-grade plastic,
H. Mc.
Fort Collins, Colo.

Dear H. Mc.,

You've got it right: If plastic is properly cared for then you have no reason to sing the blues. But on a commercial/industrial scale where the fermentation tanks are always in use they simply need to be cleaned more often and with more elbow grease. Beer stone deposits build up and require scrubbing to remove. If you scrub you rub and plastic can't hold up to the abuse of that kind of cleaning.

Minute scratches on the surface can harbor bacteria and wild yeast. As homebrewers we can control the handling and storage of the product until we consume it, but commercial brewers are at mercy of the beer-store

shelves and the vagaries of transportation. If the product has any amount of contamination, while not perceived when it leaves the brewery, it can blossom with heat and improper handling.

In the long run stainless steel is a good lifetime investment for commercial brewers. It saves time and money. Glass carboys and stainless-steel fermenters can go a long way toward easing the minds of anxious homebrewers, too.

*A pro's view,
The Professor, Hb.D.*

Looking for Alternatives

Dear Professor,

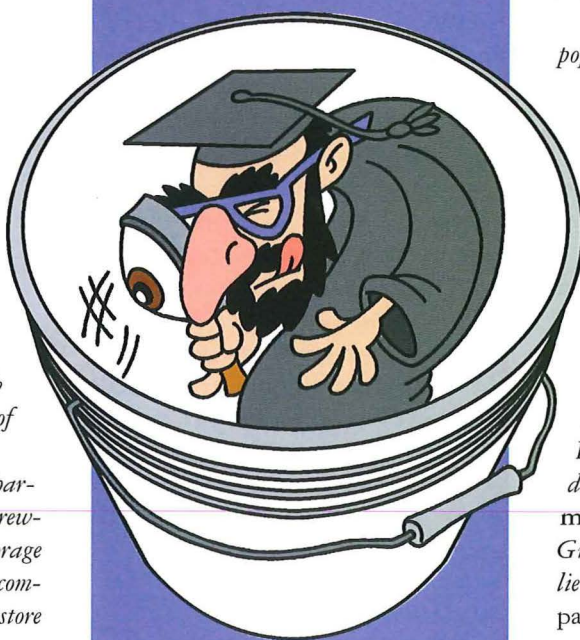
Does a way exist to produce a beer that is not made of wheat, rye, oats or barley? My wife is allergic to a constituent of these grains, gluten, and must exclude any foods or beverages derived from them, most disappointingly, beer. Can you provide me with actual recipes or references to books that may enlighten me?

I look forward to your reply.

Sincerely,
Brian Worst
Limbered, Ill.

Dear Brian,

Sorghum beer is becoming increasingly popular in Africa. Sorghum, difficult to find commercially because of droughts in Africa, is a variety of what we know more commonly as millet. By using enzymes it would be possible to mash these carbohydrates and convert them to fermentable sugars. Rice also is fermentable. Read up on the use of amylase-type enzymes and see what you can put together with regard to a mash. You could experiment with corn and triticale as well. Check Zymurgy Special Issue 1994, Special Ingredients and Indigenous Beers (Vol. 17, No. 4); Zymurgy Special Issue 1995, The Great Grain Issue (Vol. 18, No. 4); and Charlie Papazian's The Home Brewer's Companion (Avon, 1995) for starters.



Then there is saké, a kind of beer-wine beverage made from rice. Fred Eckhardt's excellent book, Sake U.S.A. (Fred Eckhardt Communications, 1992), is the best source for procedures and recipes.

*Strange brews,
The Professor*

Superhuman Extraction Rates

Dear Professor,

I can't get extracts of 35 specific gravity points per pound like Dave Miller can. I average 25 to 28. This is consistent through all types of mashes I use for the different beer styles I make. I use the iodine test to check for conversion and it is always converted. I usually raise to 156 degrees F (69 degrees C) and hold for 15 to 20 minutes, raise to 168 degrees F (76 degrees C) and then sparge with five gallons (19 L) of 168- to 170-degree-F (76- to 77-degree-C) water (with one teaspoon of gypsum). I use Phil's sparge thing and slowly run the fine spray over a floating grain bed that sits on top of a stainless grain screen (false bottom Volrath kettle). I end up with seven or so gallons of liquid and boil for 1 1/4 or 1 1/2 hours. This leaves me with five to 5 1/2 gallons of sweet wort that I run through the chiller.

I crush my grains at the local homebrew shop in their large mill and I think the grains are crushed more finely than is recommended.

So, how does Dave Miller get 35 specific gravity points from his grains?

What am I doing wrong?

Jim Hansen
Seattle, Wash.

Dear Jim,

Really? What kind of grain does Dave Miller use? The maximum extract possible from, let's say American two-row Klages, is about 37 with 100 percent efficiency. I can get about 80 percent with my own system, resulting in about 28 to 29 points of original gravity per pound of malt per gallon of wort. That is considered pretty darn good by most homebrew standards. Beats me how Dave does it. I think there might be some unintentional miscommunication here or there.

The question is: Does he really and truly mean he can get 36 points of original gravity from a pound of grain per gallon of wort from a pale malt? Let's ask.

*Waiting for the other side of the story,
The Professor, Hb.D.*

Dear Jim,

First of all, 25 to 28 points per pound per gallon is not that bad. At my brewpub I usually get about 31 with a normal gravity (OG 1.050 or so) beer. However, considering how much wort you are able to collect, I would expect you to do a bit better. The extract rates for various malts in my books (and by the way, 35 was the number for pale two-row malt only, most specialty malts are lower) are based on what I got when I was homebrewing where, like you, I was able to sparge a lot and boil off a gallon or more of the wort volume. At the pub I get very little evaporation in the kettle, so I can't sparge as much.

Points to check: First, I take it from your description that you are doing a single infusion mash. If so, 15 to 20 minutes is an awfully short mash stand. Regardless of what your iodine test says, I would mash for about an hour at 150 to 158 degrees F (66 to 70 degrees C). That's for a grist based on American pale malt. For English pale ale malt, I'd go for 90 minutes. I believe that will give you more sugar from your grain.

Second, how long are you taking to sparge? Lots of water helps, but time is even more important. One brewer's rule of thumb, which I first heard from Greg Noonan, is that if you aren't taking at least 45 minutes to sparge you aren't going to get all the sugar out of your grains. That means 45 minutes of rinsing the grain bed with hot water. The recirculation and runoff of the first wort are not included. In fact, we try to take an hour at the brewpub.

Those are the two things I would change if I encountered a low extract: lengthen the mash stand and lengthen the sparge step. If those things don't help, there may be some other problem (for example, incorrect mash pH or a poorly designed lauter tun) but most homebrewers who have low extract rates are simply not taking enough time with their wort production.

Dave Miller

Zymurgy technical editor George Fix says, "long sparging times will indeed allow one to achieve superhuman extraction rates, but such practices also have a tendency to extract astringent constituents [from the grain husks] in addition to the sugars. In brewing, efficiency and beer quality are not always in harmony."—Ed.

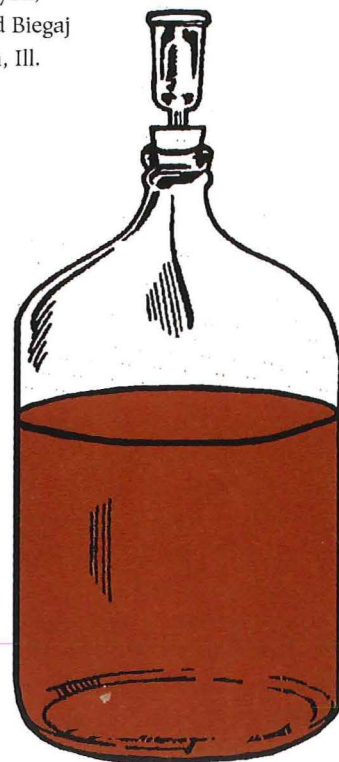
Not a Drop to Spare

Dear Professor,

When fermenting a five-gallon (19-L) batch of homebrew in a five-gallon glass carboy with a blowoff hose attached, seven pints (3.3 L) of beer are often lost in the process. Can I "top up" the fermenter or secondary fermenter with more water after the blowoff is complete to have a full five gallons of beer? If so, what kind of water should be used: boiled tap water or some type of bottled water? Would this amount to a watered-down version of the original recipe, or am I currently ending up with a more concentrated version of what I would be getting if I used a lager fermenter with no blowoff apparatus attached?

I enjoy homebrew so much I hate to lose a drop if I don't have to! Please advise.

Thank you,
Richard Biegaj
Berwyn, Ill.



Dear Richard,

Yup. Yup and more yup.

You can top off the loss with more water, but be sure to de-aerate the water. Boiling and cooling is enough, but don't agitate the cool water. Yup. You'll have a diluted version of the original recipe but it'll be the best damn beer you ever made, until the next batch.

I frequently brew a five-gallon (19-L) batch in a seven-gallon (26.5-L) carboy. No blowoff. No loss. Just good beer.

Gopher greatness,

The Professor, Hb.D.

A Steamy Story

Dear Professor,

When a beer is referred to as "steam" beer, what does that mean? I've seen recipes that say it's a "steam" beer, but I have never been able to find out what makes it "steam" beer.

All steamed up,
Kirk Groeneweg
Owatonna, Minn.

Dear Kirk,

In the world of American beer, when a beer is referred to as "Steam® Beer" you would be referring specifically to a brand produced by Anchor Brewing Co., San Francisco, Calif. The brewery has produced this beer for several years and trademarked their name so that it cannot be used by any other brewery.

Some would argue that steam beer is not just a brand name, but a style. I believe it does deserve to be claimed by Anchor as a brand name, because I figure back in the California pioneer days there was a lot of beer that was called steam beer. By our standards for defining a category or style, I'd bet there were all manners and varieties of steam beer, as they referred to it. And I bet that the varieties were so diverse from one part of California to another that one could never have really defined a style as such. Sure, it was called steam beer, but then no one was calling their beer steam beer in the 1960s when Anchor brewed a product in the tradition of former steam beers. There was no definitive tradition, but there was one aspect that Anchor Brewing Co. wanted to revive, which was basically brewing a well-hopped beer with lager yeast but

fermenting on the high end of the temperature scale, almost at ale fermentation temperatures. Thus Anchor produced its own unique brand.

Steam beer was a catchall name back in the old days that fell into disuse. Now Anchor "owns" the name. As beer enthusiasts, we refer to this pioneer tradition as "California Common Beer." Many competitions assume this style is defined by Anchor's Steam Beer. But I figure if one were able to discover what was being brewed you'd find recipes for all kinds of dark and light "common beers" brewed with lager yeasts at ale temperatures.

The word "steam" is said to have derived from the high carbonation of the beer that was released like steam when the kegs were tapped.

For some beer enthusiasts steam refers to getting steamed under the collar at the thought of an alleged style name being owned by a commercial brewery.

Suffice it to say I'd pay good money for a glass of Anchor Steam — it's damned good beer and it condenses nicely in my glass.

Boiler plated,

The Professor, Hb.D.



Forget the REST - Buy from the BEST!

Alternative Beverage

Beer & Wine Making Supplies

Fresh Products

Prompt Service

Quality Merchandise

Dependable Advice

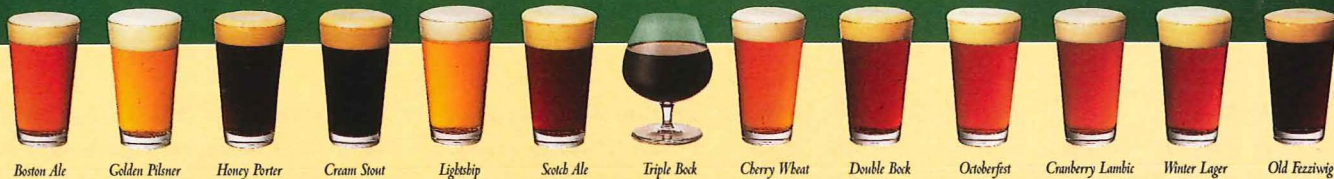
Reasonable Prices

FREE Comprehensive Product Guide for BREWERS & WINEMAKERS

2328 Distribution St.

Charlotte, NC 28203

(800) 365-BREW



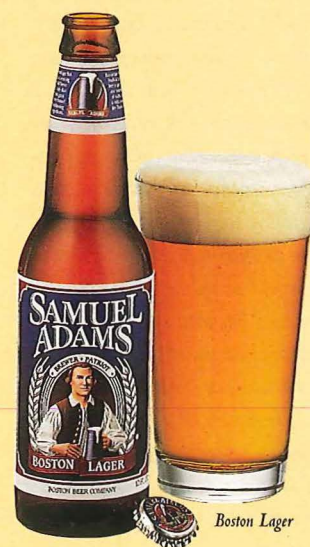
R&D.

Our nine brewers spend their time perfecting the brewing process at the traditional breweries where we brew our Samuel Adams beers.

With more than 125 different parameters to control in every batch, it's not surprising to find them tasting, testing, and talking beer deep into the night.

As they tell us all too often, a brewer's work is never done.

The Brewers of
Samuel Adams Beer



NEW PRODUCTS

New 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*. To list your product call (303) 447-0816 for Linda Starck (ext. 109) or Christopher Lowenstein (ext. 108).



Carbonating Stone

Gulfstream Brewing Products has created a carbonation method for kegs that is effective in seven to 15 minutes. The Stone is constructed of 316L porous stainless steel to create the highest efficiency obtainable in dissolving gas in liquid. With The Stone there is no need to shake or roll kegs to achieve appropriate carbonation levels. No tools are required for installation in three-, five-, and 10-gallon soda kegs. Push a 24-inch length of one-fourth-inch interior diameter tubing onto a hose barb and push the other end over a short dip tube extending into the keg under the gas-in fitting. Then set The Stone in the bottom of the keg and begin dispensing CO₂ in 2-micron-diameter bubbles for carbonation in seven to 15 minutes.

The Stone includes complete instructions and appropriate carbonation levels for 20 styles of beer. The manufacturer's suggested retail price is \$27.99. For information contact Gulfstream Brewing Products, 6331A Woodville Hwy., Tallahassee, FL 32311; (904) 421-6902.



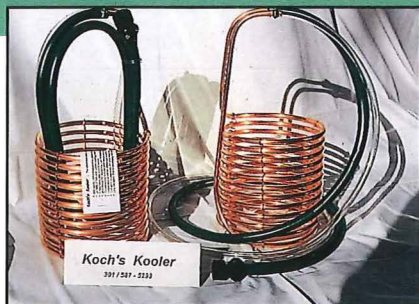
Beer Furniture

From the north woods of Maine comes a handcrafted cabinet designed to house all the equipment for chilling and dispensing kegged beer. The Brew Home is available in cherry, maple and oak. The cabinet is 36 inches tall by 28 inches wide and can dispense two kegs simultaneously from a dual-faucet column. The refrigerator unit must be purchased separately (about \$250 to \$600). The Brew Home will house two five-gallon kegs and a five-pound CO₂ canister with regulator. It is shipped flat and can be assembled in about 20 minutes. Suggested retail price is \$745 plus shipping/handling. For information contact Greg Soper, 1 Chandler Brook, North Yarmouth, ME 04097; (207) 829-2088.



Double Drafter Charging Wand

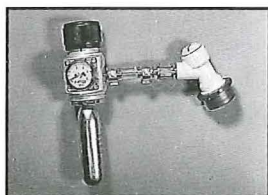
Great Lakes Brew Supply's Double Drafter uses a PET soda pop bottle as a low-pressure CO₂ tank that will supply pressure to two liquid containers of the same size. The new Charging Wand that comes with the Double Drafter is pushed into the Cornelius gas disconnect and does not lock in place. The Charging Wand comes with a safety pressure gauge and the Double Drafter comes with an adjustable regulator. This configuration allows the user a safe, convenient and economical way to charge two- or three-liter soda pop bottles to 35 psi for drafting four or six liters of beer. The packaging has been redesigned and the retail price for the complete new unit is \$49.95. Retail inquiries should be directed to your local homebrew shop or Great Lakes Brew Supply, 310 Adams Ave., Endicott, NY 13760; (607) 786-8844; FAX (607) 785-8729.



Koch's Wort Chiller

From Koch's Concepts comes Koch's Kooler, an immersion wort chiller that chills boiling wort rapidly to yeast pitching temperature. The chiller is manufactured of three-eighths-inch copper tubing. The 25-foot units are about eight inches in diameter; the 50-foot units are about 9 1/2 inches in diameter. Both units use a wire binding to maintain durability and uniform one-quarter-inch coil separation.

The manufacturer's suggested retail price is \$45. For information or retail inquiries contact Koch's Concepts, 9510 Bruce Dr., Silver Spring, MD 20901-4814; (301) 587-5293.



Mini-CO₂-Regulator

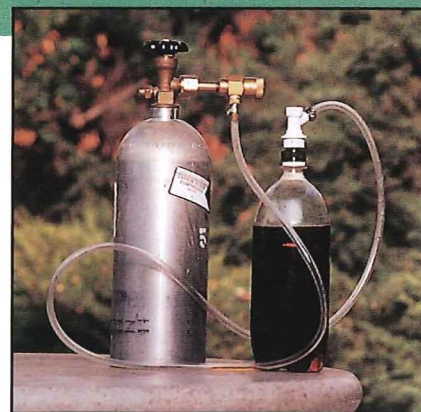
Stein Fillers Brewing Supply's Mini-CO₂-Regulator is ideal for camping, boating, travel, parties — wherever or whenever you don't want to lug a CO₂ tank and regulator. About 1 3/8 by 2 1/8 by 3 inches, the regulator will dispense precarbonated beer from your Cornelius ball- or pin-lock kegs with small disposable gas cylinders in sizes ranging from 16 and 38 grams with

three-eighths-inch threaded neck to 74 grams with five-eighths-inch threaded neck. Two models are offered: one that regulates the pressure from 1 to 58 psi and another that works from 1 to 21 psi. Each comes with a one-fourth-inch barbed outlet fitting or a short hose with a threaded swivel nut that will fit any soda keg disconnect. Manufacturer's suggested retail price is \$119. For information contact Stein Fillers Brewing Supply, 4180 Viking Way, Long Beach, CA 90808; (310) 425-0588.

Liquid Yeast — No Starter Necessary

Now available from Saccharomyces Supply Co. is a liquid brewing yeast that does not require starter cultures. RTP™ (Ready-To-Pitch) Yeast consists of freshly prepared pure cultures that combine the superior quality of liquid yeast with the ease and convenience of dry yeast. Warm and resuspend the concentrated yeast slurry and add it to the fermenter when your wort has cooled to pitching temperature. The RTP-5 for five-gallon batches contains about five billion viable cells.

Currently nine ale and three lager yeast strains are available for major beer styles. The available strains are from the yeast bank of the Boston Wort Processors homebrew club and have been used by hundreds of homebrewers for years in many award-winning recipes. RTP Yeast is available through homebrew supply shops. Manufacturer's suggested retail price is \$4.50. For information contact Saccharomyces Supply Co., 190 Vanderbilt Ave., Norwood, MA 02062; (617) 769-7980.



Homemade Soda System

The Homemade Soda System from Dixon Enterprises and a CO₂ tank enable brewers to make homemade carbonated soft drinks using syrup and water for less than half the cost of store-bought sodas, and to make wine coolers or carbonate beer. Complete instructions are included. You can customize your drinks' strength and carbonation levels to your individual taste and add carbonation to beverages that have gone flat. The Homemade Soda System comes fully assembled, ready to connect to a CO₂ tank to two-liter bottle. The manufacturer's suggested retail price is \$95. For information contact Dixon Enterprises, PO Box 1095, El Cajon, CA 92022; (619) 441-8076.

BC Labels™

BC Labels, created by Colvis Corp., are self-adhesive beer cap labels that can be used on plain and swing-top bottles. The labels are visible from the top of the bottle, an advantage when the bottles are stored in boxes.

BC Labels come in 14 standard designs ranging from ale to weizen and are available for \$1.25 per sheet of 56 labels. A personalized custom label can be created for \$2.50 per sheet. Additional sheets of custom labels are \$1.25 each. Minimum orders are \$5. For information contact Colvis Corp., 160 Beaver Pond Loop 17-d, Pawleys Island, SC 29585; (803) 237-1065.

Compiled by Christopher Lowenstein, advertising assistant.



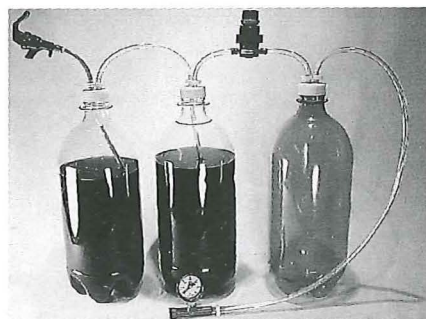
Elliott Bay Metal Fabricating, Inc.

Specializing in 2, 4, 7, 10 & 15 Barrel Systems



— Elliott Bay Metal Fabricating, Inc. —
P.O. Box 777 • Monroe, Washington 98272 • (206) 788-5297

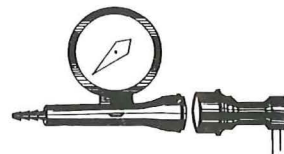
From Kegged Beer



To Portable Draft

The **Double Drafter** now includes an easy to use Charging Wand that plugs into a standard keg disconnect. The **Double Drafter** uses a PET Soda Pop Bottle with 35 PSI of CO₂ to draft two liquid containers of the same size.
(28 MM size for 2 liter bottle, 38 MM size for a 3 liter bottle. Thermal carrying case available.)

Ready -
Set -
CHARGE



Patent Pending.

The Tap-Cap and Double Drafter system is manufactured by
Great Lakes Brew Supply, 310 Adams Ave, Endicott, NY 13760
(607) 786-8844, or Fax to (607) 785-8729
Wholesale and retail pricing available. Visa/MC accepted

FREE 32 pg. Catalog

Toll Free & Info Line

1-800-762-2560

The Ultimate Fermenter Only \$29

- 6.7 U.S. Gallons
- Airtight lid w/built-in lock
- Heat belt ridge
- Only U.S. distributor

Heat Belt \$19.95
Both Only \$44



Keg It!

2.5 or 5 gal. spheres \$23
1 Pump Tap

16 oz. Pint Glasses

Set of 6 \$8.99

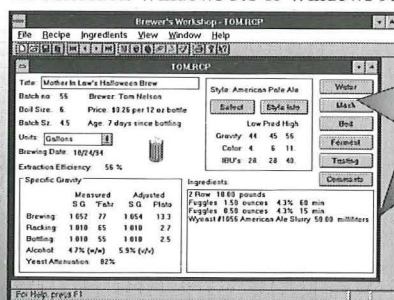


THE BREWERY

11 Market St., Potsdam, NY 315-265-0422
1-800-762-2560

BREWER'S WORKSHOP 4.0

for Microsoft Windows 3.1 & Windows 95



Only
\$34.95

plus \$3 S&H
CA residents
add \$2.53

Look at the features!!

Completely open database, All AHA styles, Label-maker, Automatic water calculations, Print preview, Full file management, Inventory, Plus much more!

Also available from these fine retailers

Brewer's Resource - CA (800) 827-3983

Chicago Homebrew Supply - IL (800) 213-2337

TKO SOFTWARE (805) 481-4900



The Brewer's Workshop has been refined with home brewer's input since 1992. This is the product you asked for!

Good... Better... Best!

Customer Service

Our open lines of communication and monthly Newsletters provide you with the **best** information. We work **with you** when a return or credit is requested. Our customer service program makes ordering easy!

Inventory

A full line of quality products is available at our fingertips! We offer the most complete line of **quality products** available within the industry and are constantly improving our packaging and expanding our product lines.

Personnel

At the **L.D. Carlson Company** our friendly and knowledgeable staff will serve you with **complete** satisfaction. ***Courtesy is our policy!***

Facility

Our **NEW** warehouse, covering twenty-eight thousand square feet, is efficiently designed to expedite your order, ensuring **quick** delivery!

Featuring Quality Products

Malt Extracts

- | | | |
|--------------|------------|------------------|
| ♦ Bierkeller | ♦ Coopers | ♦ John Bull |
| ♦ Brewferm | ♦ Edme | ♦ Laaglander |
| ♦ Brewmart | ♦ Glenbrew | ♦ Munton & Fison |

"Brewer's Best" Equipment Kits, Ingredient Kits, Crown Caps and Liquid Thermometers

"Vintner's Reserve" Wine Kits

Domestic, English and Belgian Grains

"Vintner's Best" Wine Equipment Kits

Leaf Hops, Hop Pellets and Hop Plugs

At the **L.D. Carlson Company** we always give you our **best!** Call us today...

1-800-321-0315

463 Portage Boulevard
Kent, Ohio 44240



Toll Free Fax!
1-800-848-5062

L.D. Carlson
COMPANY

(WHOLESALE ONLY PLEASE)

*Quality Products for the Discriminating
Winemaker and Beermaker*

THE BEST FROM KITS

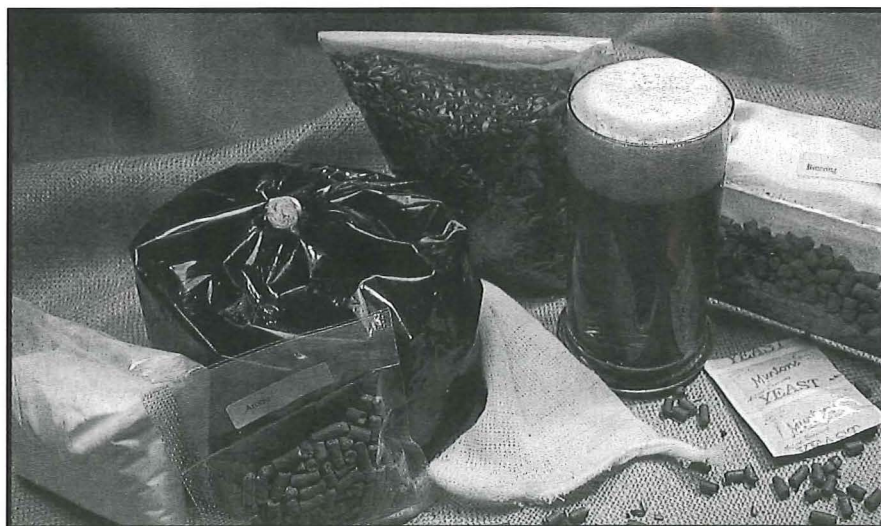
Larry Johnson

Quaffable German Ales



Germany is best known for its lagers, of course, but in the northwestern part of the country some brewers still brew beer the old-fashioned way — as ale. In Düsseldorf and surrounding towns they preserve the old ways by brewing their famous Alts (German for “old”), and in the area of Cologne (Köln) they brew the light-bodied, slightly sweet Kölsch. Not many of these lovely ales make it to the United States, and there are few American versions of these classics. Most examples of the two styles are light- to medium-bodied with a clean malt and spicy hop character and are very refreshing. Sounds like a good summer beer!

I’m seated in my favorite chair, feet up, a glass of Hannen Altbier in hand, an example of a mild Düsseldorf Altbier; and a bottle of St. Stan’s Amber, an American Alt, nearby. Contemplation mode: enabled. Plans have been set in motion for me to receive a shipment of two WindRiver Altbier kits, one Otto Hoxxiem Altbier Kit and one Otto Hoxxiem Kölsch kit, and I’ve already started the research. (Could you pass me that St. Stan’s, please?)



Arrowhead Alt — WindRiver Brewing Co.

I brewed two Altbiers with the Arrowhead Alt kits assembled by WindRiver Brewing Co. of Eden Prairie, Minn.

Ingredients for 5 gal (19 L)

- 6 lb amber liquid malt extract (2.7 kg)
- 3/4 lb 50 °L crystal malt (0.3 kg)
- 1/4 lb chocolate malt (0.1 kg)
- 2 oz Mt. Hood hop pellets, 3.1% alpha acid (57 g) (60 min.)
- 1 oz Hallertauer hop pellets, 3.7% alpha acid (28 g) (15 min.)

Wyeast German Ale No. 1007
liquid yeast culture

3/4 corn sugar (177 mL) (to prime)

- Original specific gravity: 1.048
- Final specific gravity: 1.010

The instructions from WindRiver were thorough and easy to follow. They gave good procedures for sanitation, bottling and conditioning. They even included a few tips on how to avoid mistakes like boilovers and scorching. You can tell the instructions were written by someone who has brewed beer in their kitchen. This is comforting for anyone brewing their first (or second, or third) beer and who doesn't yet have the procedures down pat.

Batch one was brewed according to the kit directions, using only the ingredients supplied. I steeped the grains, which were pre-crushed and packaged with a muslin bag, added the malt extract and Mt. Hood hops at the beginning of the 60-minute boil and the Hallertauer hops 15 minutes from the end of the boil. The volume was about three gallons (11.4 L). I chilled the wort to 77 degrees F (25 degrees C) in about 20 minutes using an immersion chiller. The wort was siphoned, with plenty of splashing and sloshing for aeration, to a standard white plastic fermenter containing two gallons (7.6 L) of cold water. Specific gravity (temperature corrected) was 1.048. Ambient temperature for fermentation was between 65 and 68 degrees F (18 and 20 degrees C).

For batch two I wanted to increase the maltiness and decrease the caramel notes I thought I might get from the crystal, so I substituted three-fourths pound (0.34 kg) of Munich and one-fourth pound (0.11 kg) of wheat for the other grains. Munich and wheat should be mashed, so I put the crushed grains into a two-quart (2-L) coffee thermos and added 156-degree-F (69-degree-C) water. After a one-hour mash, I strained the grains, rinsed them and poured the liquor into the kettle. I then added two gallons (7.6 L) of water and the malt extract. I also substituted Hallertauer Mittelfrüh pellets, 4.7% alpha acid, for the hops in the kit. I used 2 1/2 ounces (71 g) for bittering and, while not entirely appropriate for style, 1 1/2 ounces (43 g) for flavor (brewers' license). Boiling times, chilling, transferring and pitching went precisely the same as batch one. Original gravity also was 1.048, final gravity was 1.010.

The Yeast

Most homebrewers have learned the value of using pure strains of yeast, especially when attempting to reproduce a distinctive style or characteristic. The Wind-River kits offered the option of Wyeast liquid yeast instead of dry, for a few more dollars. I decided to go with the liquid. I made a 500-mL starter with a package of Wyeast No. 1007 German ale yeast then stepped



it up to two half-gallon (2-L) starters. These two starters were pitched into the first two batches of Alt. I harvested the slurries of the first two batches and pitched the second two batches with about the same amount of yeast as the first two.

Otto Hoxheim — Mayer's Cider Mill

The Kölsch and the other Altbier were Otto Hoxheim kits supplied by Mayer's Cider Mill of Webster, N.Y. Each kit consisted of a seven-pound (3.2-kg) can of extract and a packet of dry yeast under the lid. The label contained a set of instructions that covered sanitation, brewing, fermenting and bottling. The label also tells us that "In using all-malt, 100 percent of the ingredients contribute to flavor and body whilst true-to-type hops add that final authenticity." The ingredients are 100 percent malt extract, hop extract and the ubiquitous sachet of "special dried yeast."

The instructions included the statement, "You do not need to boil as this has been done during preparation of the extract." Being a little uneasy about not boiling the wort at all, and wanting to kill all the little uninvited critters, I limited the boil time to the minimum required to satisfy my needs. The Otto Hoxheim kits are designed for six-gallon (22.7-L) batches, and my equipment can only accommodate five-gallon (19-L) batches so this explains my too-high starting gravity.

For both kits I dissolved the extract in three gallons (11.4 L) of boiling water and weighed out one ounce (28 g) of Mittelfrüh hop pellets for the alt and three-fourths ounce (21 g) for the Kölsch. I added the hops just before the wort started to boil. I boiled each batch for five minutes, chilled the wort and poured it (with much splashing and sloshing) into the fermentation buckets. Water was added to give a final volume of five gallons. Specific gravity was 1.053 for each. A two-quart starter was pitched when the wort was about 77 degrees F (25 degrees C). Fermentation was very vigorous.

From this point on the data for all four batches are identical. They each spent seven to eight days in the primary, eight to 10 days in the secondary, and each five-gallon batch was primed with three-fourths cup (177 mL) of corn sugar. The final gravity for the Alt was 1.009, and 1.012 for the Kölsch. And, as is typical for Alt and Kölsch beers, these brews were aged cold.

When it came time to sample the results, I wanted the most competent and impartial evaluations I could find. My first thought was to take all four beers to a meeting of the Brew 52s, the local homebrew club, but they didn't have a scheduled meeting before the article deadline. I was, however, lucky enough to have four knowledgeable tasters volunteer their time. They were Bob Hall (1994 Southeastern Homebrewer of the Year), Owen Ogletree and Paul Eckloff (both Recognized BJCP judges) and Brent Kelley (homebrewer and homebrew store employee). It was a blind tasting with the beers identified by numbers only. Scoring was done as if for a standard beer competition, including official AHA scoring sheets.

All four beers were pronounced highly drinkable, but the highest score went to my personal favorite, the Arrowhead Alt from WindRiver Brewing Co., the one that was brewed without modification. This beer was malty and complex with the only criticism being that, for the style, it should have been more bitter. Coming in a close second was the WindRiver kit that I modified. To my surprise, replacing the crystal with mashed Munich did not increase the maltiness. Rather, it decreased it slightly. (Oh well, live and learn.) Both beers scored in the low- to mid-30s on the AHA's 50-point scale.

The Alt and Kölsch from Otto Hoxheim scored slightly lower (in the mid-20s). One problem was that the Kölsch and the Alt tasted quite similar to each other. That might be because I used the same yeast for both. Wyeast has a Kölsch yeast (No. 1565), but it needs to ferment at slightly cooler temperatures than I could accommodate. Wyeast No. 1338, an Altbier yeast, would also have been a good choice. This Alt yeast finishes malty, which is more appropriate for the Alt kits. The color of the Kölsch was a little dark for the style, while the Alt was a bit light.

The Otto Hoxheim kits had a slight acetaldehyde or green-apple aroma that is usually caused by the yeast strain (some strains produce more than others), insufficient aging (acetaldehyde is made by yeast

and then reabsorbed) or insufficient aeration — none of these the fault of the kit. Chances are these beers will improve with a little aging. The Otto Hoxheim kits had been in the bottle for two weeks at tasting time while the WindRiver kits had been bottled for three and a half weeks. The Otto Hoxheim kits also suffered from a lack of body, which could have been alleviated by the addition of a little crystal malt (not Munich, right?) All the beers were pronounced very drinkable and we saw to it that none of the samples went to waste.

My conclusion? If you like brewing with kits, have yourself a quaffable German ale. It's a good summer brew and, in my experience, a style that lends itself well to kit brewing. Cheers!

Larry Johnson, a homebrewer since 1994, lives with his wife and two children in Athens, Ga. In his spare time he's either brewing beer or surfing the Internet. He keeps himself in homebrewing supplies by working in the technical support group for Reliance Electric, a Rockwell Automation business.

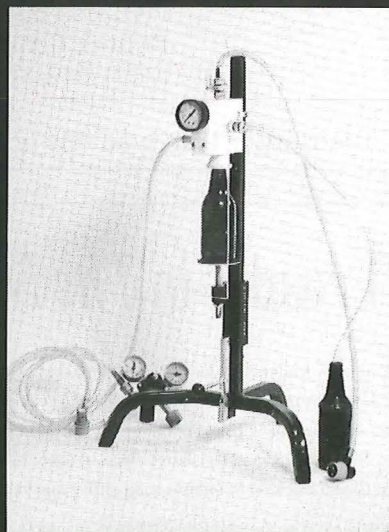
©1996 Larry Johnson



Melvico™ U.S. Pat. Pend./Can. Pat. Pend.

Pressure Bottler for Beer ♦ Sparkling Wine ♦ Soft Drinks

Latest state of the art pressure bottler to bottle crystal beer with no deposit, no sugar added no waiting time for second fermentation. Beer is ready to serve right after bottling like commercial breweries. Melvico bottler can be used to bottle sparkling wine (champagne) soda pop, soda water, or any sparkling drink. It is easy to use.



Saturate liquid with CO₂ in pop tank, connect to Melvico, fill bottle and cap. Comes with CO₂ regulator, tubing, connectors and gas flow pressure gauge. You supply your own filter pop tank and CO₂ and in minutes you will bottle your crystal clear beer. Distributed exclusively in U.S.A. and Canada, shipped via U.P.S. (U.P.S. will custom clear US shipments).

Contact Information

WindRiver Brewing Co.

7212 Washington Ave. S.
Eden Prairie, MN 55344
(800) 266-4677
<http://www.bitstream.net/windriver>

Mayer's Cider Mill

699 Five Mile Line
Webster, NY 14580
(800) 543-0043
FAX (716) 671-5269
(Call to find the retailer nearest you carrying Otto Hoxheim kits.)



Vinotheque

2142 Trans Canada Highway,
Dorval, Quebec, Canada. H9P 2N4.
Phone 800 363-1506 Fax (514) 684-4241

BREWING

QUALITY BEERS

The Home Brewer's Essential Guidebook

Byron Burch

Second Edition now available!
132 pages - New Illustrations.
List price \$5.95.

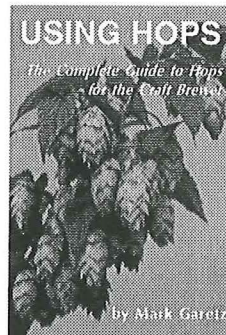
Wholesale

Inquiries: **JOBY BOOKS**
P.O. Box 512
Fulton, CA 95439
(707) 542-3001

Distributor List Available on Request

USING HOPS

The Complete Guide to Hops for the Craft Brewer
by Mark Garetz



Using Hops is the only book on hops with an emphasis on how they are used in brewing, and the only book geared to the homebrewer and microbrewer. Hops are one of the most important ingredients in beer, but most homebrewing books devote only a page or two to the subject. *Using Hops* covers the subject in detail!

- Hop Varieties
- Bitter Hopping
- Late Hopping
- Dry Hopping
- Hop Products
- Decoding Hop Names
- Buying and Storing Hops
- Growing Your Own Hops
- Comprehensive Index
- and much, much more!

Using Hops is professionally printed and is over 230 pages long. It is a must for any serious brewer's library. To get your copy, see your homebrew retailer or order direct.



Published by
HopTech
3015 Hopyard Rd. Suite E
Pleasanton, CA 94588

1-800 DRY-HOPS

1-510 426-1450
1-510 426-9191 Fax

Retailers: Contact us for the name of your nearest distributor.

"I read it in *The New Brewer*."

Industry leaders like Jerry Bailey know that only *The New Brewer* provides the inside information craft brewers from coast to coast depend on. Each issue is packed with vital statistics for business planning, the latest in brewing techniques, alternative technologies, beer recipes, legislative alerts, marketing and distribution ideas — everything you need to succeed in today's competitive market.

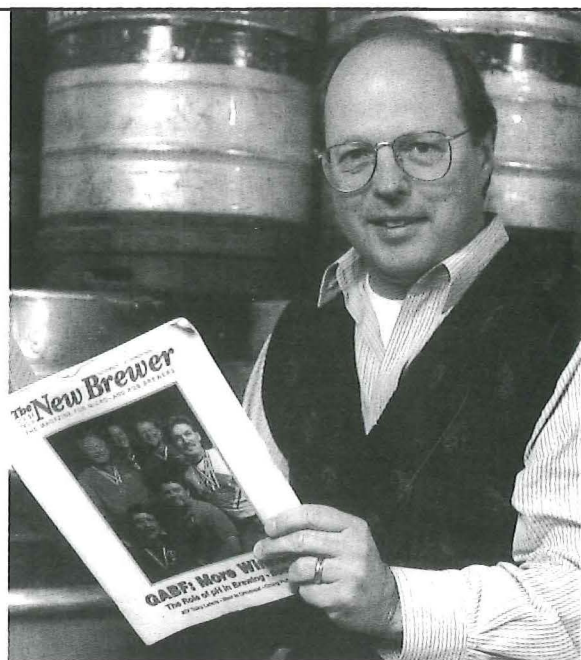
Whether you're an established brewery or just in the planning stages, our in-depth coverage will give you information you can put to work immediately. After all, your business is our business.

See for yourself. Subscribe to *The New Brewer* today!

Please complete the following information. We'll rush subscription information your way!

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____ CITY _____
STATE/PROVINCE _____ ZIP/POSTAL CODE _____
COUNTRY _____ TELEPHONE _____

Please return this coupon to: Institute for Brewing Studies, PO Box 1510, Boulder, CO 80306-1510, U.S.A. For faster service, call (303) 447-0816, ibs@aob.org or FAX (303) 447-2825. **ZY96**

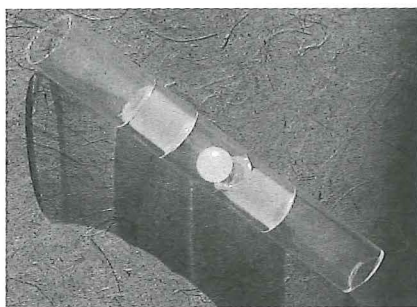


Jerry Bailey, President,
Old Dominion Brewing Co., Ashburn, Va.

The New Brewer • YOUR INSIDER'S VIEW TO THE CRAFT-BREWING INDUSTRY

REVIEWS

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



Phil's Psyphon Starter

Sanitary siphoning has always been a challenge for homebrewers and a popular topic in *Zymurgy* since the wonderful "Treatise on Siphoning" in (Spring 1979, Vol. 2, No. 1). My favorite method is Mike Fertsch's "Ultimate Siphon," where a swimming pool pump and a shop vacuum do the job (Summer 1987, Vol. 10, No. 2). However, for simplicity and low cost it has been difficult to improve on Chris Stamp's "lung power" method (Spring 1987, Vol. 10, No. 1), Tom Hamilton's squeezable rubber bulb (Special 1992, Vol. 15, No. 4), or the blue bulb-syringe sold in pharmacies to clean babies' noses — until now.

Dan Listermann already is well-known for his Phil's Philler, Philmill, Phil's Lauter Tun, Phillchill Phittings, Phil's Sparger and Phalse Bottom. Dan's latest creation, also named after his son Phil, is Phil's Psyphon Starter. The device is a plastic one-way ball valve encased in a four-inch length of three-eighths-inch inside diameter vinyl hose. The instructions call for you to cut off the bottom two inches of your standard three-

eighths-inch outside diameter racking cane, then insert the device between the remaining cane and the two-inch stub. Presto! A racking cane with a one-way valve.

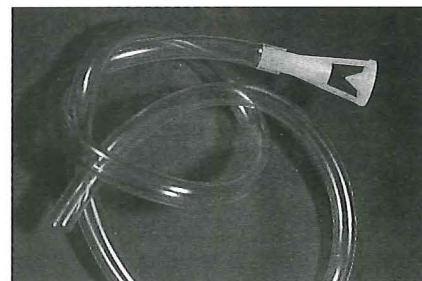
When shaken up and down (like churning butter) a spurt of beer jets up the cane with each thrust. The ball valve prevents the beer from flowing back down into the carboy. A dozen or two shakes and your siphon is started. I spent a couple of hours with the starter and some five-gallon carboys of water, siphoning from a full carboy on my kitchen counter (36 inches high) to an empty carboy on the floor. I ran into a few problems. The starter fell off the cane twice until I realized I was shaking too hard. Gentle shakes suffice. Another time, I pushed the cane too far into the starter, only to dislodge the ball-valve parts. With a thin screwdriver I was able to realign things easily. I got the siphon going, but it stopped with about two gallons remaining when an air leak at the top of my cane allowed air to break the siphon. A worm clamp fixed that problem. I got the siphon going on the next attempt but the flow was anemic — as soon as the water reached the down-limb of the cane an air bubble formed that further shakes failed to dislodge. But success was to be mine. I held the siphon hose (down-limb to the receiving carboy) up in the air and gently shook the starter until most of the hose was filled and bubble-free. The result was a strong siphon, good to the last drop, that took only two minutes longer than siphoning five gallons without the Psyphon Starter (10 vs. eight minutes). And by inserting the tip of the cane no further than 8 to 10 inch-

es into the water during shake-starting the turbulence at the bottom of the carboy seemed minimal. For about \$3 Phil's Psyphon Starter is a welcome addition to the homebrewer's arsenal and should be a popular product.

"Phil's" line of products are available at homebrew supply shops. Call (513) 731-1130 for the retailer nearest you.

—Fred Westendarp lives in Tempe, Ariz., where he brews all-grain beers. He is a member of the Arizona Society of Homebrewers and can be reached at 72145.374@compuserve.com.

©1996 Fred Westendarp



Siphon Spray Wort Aerator

Thank you to Jim Martin of Fermentap for reminding homebrewers to aerate their cooled wort prior to pitching yeast. It's an easy step to forget, and can result in long lag times and sluggish fermentations. His new product, the Siphon Spray Wort Aerator, can help. An idea from a setup he saw at a local brewery, the Siphon Spray is a small plastic device that fits snugly into the end of your siphon hose. It directs the stream of wort onto a small splash pad that looks like a witch's hat. The wort hits the top of the hat and flows down and out, off the brim and into your carboy. The rate of wort flow

determines the amount of splashing the device produces. With my system wort drains from the bottom of the kettle through a valve. A screen in the kettle holds back the whole hops. The flow rate therefore is not very fast, and the Siphon Spray doesn't create much of a splash. Most of the wort simply crawls around the brim and coalesces into a single stream underneath the device. However, when using a standard siphon the flow rate is sufficient to create a very nice spray indeed. Be sure to cool your wort prior to aerating because oxygenating hot wort can cause the negative flavor effects of hot-side aeration.

Manufacturer's suggested retail price is \$2.25. The Siphon Spray is distributed through F.H. Steinbart and Crosby and Baker. For information contact Fermentap, PO Box 30175, Stockton, CA 95213-0175; (209) 942-2750. —Fred Westendarp lives in Tempe, Ariz., where he brews all-grain beers. He is a member of the Arizona Society of Homebrewers and can be reached at 72145.374@compuserve.com. ©1996 Fred Westendarp

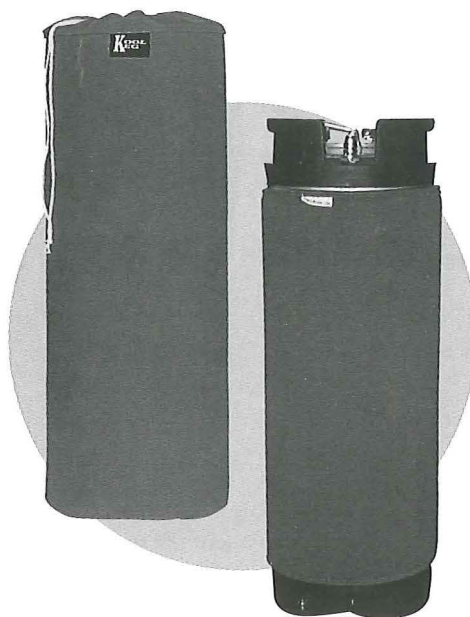
Kool Keg and Keg Parka

Have you long desired for an alternative to a messy tub of ice to keep your keg of beer cool for parties and events? Now there are several versatile and relatively economical options that will be of interest to homebrewers who keg.

The Kool Keg and the Keg Parka are thermal insulators designed to keep kegs of beer cool for hours. The units tested fit five-gallon ball-lock Cornelius kegs. Both of these products kept the beer cool, were simple to use and appeared very durable.

The Kool Keg is constructed of a PVC-coated 600 denier polyester shell. The insulation lining is by XPE (crosslink polyethylene) closed-cell one-half-inch foam. It easily slides in and out of the shell. The top drawstring closure is made of a strong but light nylon-type material called taffeta. Heavy-duty stitching is used throughout. The bottom also is insulated, providing additional thermal efficiency.

A keg with a starting temperature of 40 degrees F (4 degrees C), when placed at 80 degrees F (27 degrees C) in the sun with no wind, increased in temperature at a rate of



two degrees per hour over four hours when insulated with the Kool Keg. Tested indoors with the same starting temperature, the temperature rose one degree per hour. The temperature of an unprotected Cornelius keg under the same conditions rose an average of 7 degrees per hour in the sun and 2 degrees per hour indoors over four hours. For efficiency, kegs should be kept refrigerated before using the thermal insulators. The temperature loss can be minimized by wetting the interior of the insulator with water and then freezing.

The Kool Keg cleans up easily by removing the foam insulation and spraying it with a garden hose, then air drying. For stubborn dried stains, a little stain remover should do the trick on the outer casing. The Kool Keg is efficient in keeping kegs cold for hours. This product is ideal for travel, picnics and parties.

The manufacturer's suggested retail prices for the Kool Keg are \$9.95 for the two-liter minikeg, \$19.95 for five-liter minikeg, \$25.95 for three-gallon keg, \$27.95 for five-gallon ball-lock and pin-lock keg and \$29.95 for Pig Pens (Party Pig insulators). Standard colors are red or teal but other colors can be special ordered. The Kool Kegs are available, wholesale and retail, from The Beer Essentials Brewing Supplies, 15219 Pacific Ave. S., Tacoma, WA 98444. For information call (206) 536-8840 or (800) 685-BREW.

The Forty Below Keg Parka is constructed of one-quarter-inch elastic wet-suit material that is 90 percent neoprene and 10 percent nylon. Heavy-duty stitching promises a very durable, long-lasting keg insulator. The unit slides over the Cornelius keg and virtu-

ally eliminates the sweating experienced with uncovered kegs. Gel ice can be placed between the keg and the Keg Parka and, if rotated, keeps the keg cool indefinitely.

When a 40-degree-F (4-degree-C) keg was tested at 80 degrees F (27 degrees C) in the sun and again indoors over four hours, the Keg Parka kept the increase of temperature in the Cornelius keg to only 4.5 degrees and 1.5 degrees per hour, respectively. In Florida we are concerned about heat, but in northern states the Keg Parka will work in reverse, keeping beer from cooling down too much in cold conditions.

The Keg Parka can best be described as simple, versatile and durable. Machine washable, it cleans up easily. Manufacturer's suggested retail prices are \$24.95 for the five-gallon Cornelius keg, \$14.95 for the five-liter minikeg, and \$59.95 for the 15-gallon keg.

For information contact Forty Below, PO Box 188, Graham, WA 98338; (206) 846-7853 or FAX (206) 846-7853.

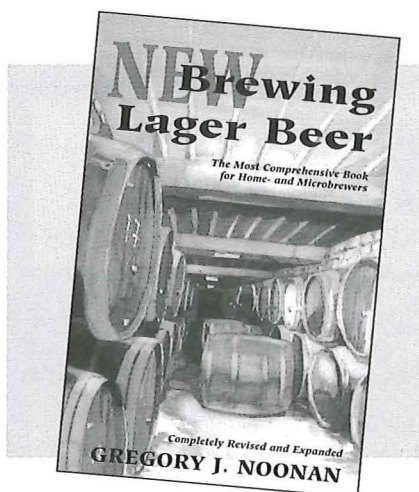
Reviewed by Ron Bach, president of the Central Florida Home Brewers of Orlando, Fla. A Certified BJCP judge, Ron has been brewing for 3 1/2 years and has won more than 50 ribbons in competitions, including two best-of-show awards.

©1996 Ron Bach

New Brewing Lager Beer

Greg Noonan is such a laid-back fellow that people who know him might be surprised to find what a wealth of brewing knowledge bubbles beneath his surface. That knowledge is quite evident on the pages of this 360-page book, *New Brewing Lager Beer* (Brewers Publications, 1996). As most craft brewers in the United States are far more familiar with ale brewing than lager brewing, this book will serve as a very valuable reference.

Make no mistake, though, this is no fun romp through the colorful world of brewing. This is a serious, no-nonsense brewing textbook, not a "companion" for hobbyists. It is written in the dry, impassive style that many brewers will recognize from classic texts such as *Malting and Brewing Science* by Hough, Briggs, Stevens and Young (Chapman and Hall 1982).



Starting with an in-depth analysis of barley malt, Noonan moves through water analysis and on to the brewing and fermentation processes with great thoroughness and detail. There is a heavy emphasis on water and organic chemistry. The section on water chemistry is, in fact, one of the best and most complete I've seen. The book is replete with graphs and charts to assist the brewer in analyzing every aspect of the process.

A few of the author's biases surface in the chapter on the brewing process, including the complete exclusion of adjuncts from any mention at all (I happen to agree) and an argument in favor of decoction mashing. Since, in real life, decoction mashing is beyond the means of almost all craft brewers, an exposition on how to derive similar results from a different mash program might have been more useful. I was disappointed by the discussion of hop oils and extracts as legitimate ingredients, but then, that is my own bias.

New Brewing Lager Beer is billed on its cover as the "most comprehensive book for home- and microbrewers." That is true, perhaps to a fault. Though I have met many advanced and technically sophisticated homebrewers, I have to imagine that there are very few who could make full use of this text, which seems more suited to someone in the quality control laboratory of Anheuser-Busch. For example, the book gives in-depth descriptions of bacteria that only can be seen under microscopes with powers of at least 400X. Levels of temperature control and sophisticated analysis that are all too rare even in microbreweries are discussed here as if they were routine for homebrewers.

Despite the fact that the author is an accomplished brewer, the text seems to assume

perfect laboratory conditions rather than real-life ones. For example, Noonan says "hops should be added to the kettle by being scattered over the surface of violently boiling wort." In most breweries I've seen, this procedure would result in an almost instant boilover. As a veteran of craft brewing, the author could have shed a great deal of light on brewhouse realities, which rarely dovetail perfectly with lab results.

Most distracting is a constant shift of emphasis from a homebrewer perspective to a microbrewer perspective and back again. Professional brewers have no use for digressions about "homebrew bittering units," and homebrewers are unlikely to have an interest in the intricacies of the metabolic pathways of anaerobic fermentation. While many aspects of homebrewing are applicable in the professional brewhouse, many are not; certainly the environments and purposes of endeavor are not so interchangeable as they are made to seem here.

This is an excellent book for both aspiring professional brewers and veterans. The breadth of information here is awe-inspiring. Most microbrewers, including the reviewer, have at least a few large holes in their web of brewing knowledge. Noonan's book fills many of those holes, bringing us the sort of in-depth view of lager brewing that rarely appears in the English language. And at \$14.95, this is also the bargain of the century; books on this level usually cost at least \$50.

It would be terrific if Charlie Papazian and Noonan were to co-author a true homebrewer's edition of this book; a blend of Noonan's knowledge and Papazian's sympathetic and accessible style would be truly incredible. Then Noonan could turn to writing benchmark works for professional craft brewers, the task which he is apparently best suited to. Noonan is a master brewer in the true sense of the word, and I hope he turns his pen to the subject of ale brewing in the near future. We could all use his wisdom.

New Brewing Lager Beer by Gregory J. Noonan, Brewers Publications 1996, 360 pages, publisher's suggested retail price is \$14.95.

Reviewed by Garrett Oliver, brewmaster for the Brooklyn Brewery, who will be firing up a new brewhouse in Brooklyn this spring. He is an internationally recognized authority on traditional brewing.

The Brewer's Planner

The Computer Aid For Home Brewers
For Apple Macintosh® Computers

Recipe Formulation!
Calculation of Water Treatment, Beer O.G. & Color, and Hop Bitterness

Batch Logging!
Handles the Simplest to the Most Complex Processes, Prints Logs & Contest Forms, Mash & Fermentation Graphs

Many More Features!
Send SASE for Brochure & Sample Recipe

Only \$50

(WA residents add 8.2% sales tax)
Check or Money Order (US Funds)
Sorry, No Credit Cards

From Darryl Richman
(Author of *Bock*)
And The Crafty Fox
15600 NE 8th St. • Suite B1-327b
Bellevue, WA 98008 • (206) 641-5535

American Homebrewers Association®

Bock Is Best!

Grab the billy goat by the horns and enter your club's best bock in the Bock Is Best Club-Only Competition. Entries are due May 13, 1996. Three bottles per entry, one entry per club. Please use the AHA Sanctioned Competition entry forms and include the \$5 entry fee.

All clubs registered with the AHA are eligible and are encouraged to participate.

Send all entries to:
New York Notorious Brewers
144-A Clinton St.
Montgomery, NY 12549



Questions? Contact James Spence at (303) 447-0816, ext. 121; james@aab.org; 70740, 1107; or FAX (303) 447-2825.

Zym 19

CLUB-ONLY COMPETITION

Authentic English Pubware

Glassware

20 OZ. Imperial Pints w / Royal Seal

Set of 4-\$21.95, 6-\$29.95, 12-\$52.95

10 OZ. Ladies Half Pints

Set of 4-\$19.95, 6-\$26.95, 12-\$47.95

Pint Pots / Dimple Mugs

Set of 4-\$26.95, 6-\$36.95, 12-\$64.95

Bar Towels

BASS, JOHN BULL, WHIT BREAD, WHITE HORSE

\$5.95 each 4 for \$22

Optics / Spirit Dispensers (25 ml, 35 ml, 50 ml)

\$41.95 each

PLUS SHIPPING

CHECK, MO, VISA, MASTERCARD ACCEPTED

McDonald Wagg Pub Supply

978 Lindsay Lane

Lancaster, Pa. 17601

(717)-721-Wagg (9244)

AHWD

AT HOME WAREHOUSE DISTRIBUTORS

BEER & WINE MAKING SUPPLIES

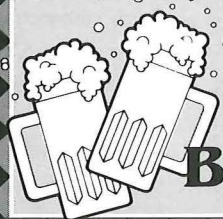
- Warehouse Prices
- Over 120 Beer Kits and Malt Extracts
- Personalized Service

M&F
3.30 lb.
JUST \$6.95

CONTACT US FOR YOUR **FREE CATALOG**

P.O. Box 185 Clarence, NY 14031

(800) 210-8585 FAX (716) 681-0284

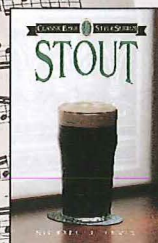
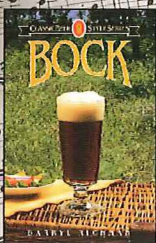
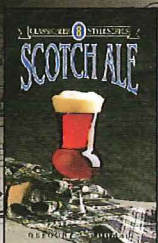
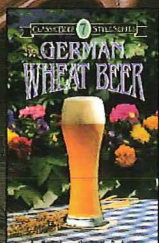
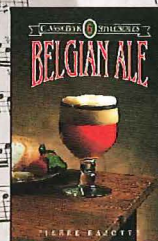
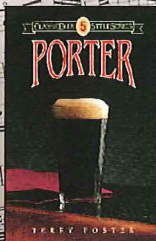
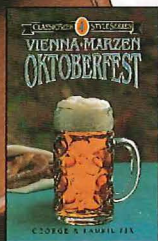
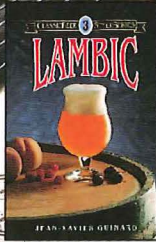
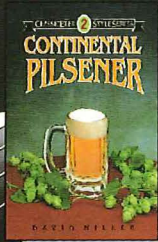
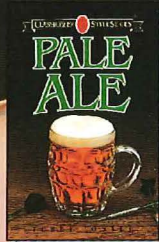


GREAT
HOMEBREW IS THE
BOTTOM LINE

Enjoy
the Classics

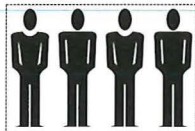
Brewers Publications presents masterpieces for your brewing library — the *Classic Beer Style Series*. Each volume of the Series details the history, flavor profiles and recipes of the world's most popular beer styles. This timeless collection raises beer to a new level of sophistication.

For more information or a catalog of titles, contact Brewers Publications at (303) 447-0816, orders@aob.org or FAX (303) 447-2825.

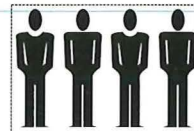


Either staple sheets or make copies on oversized paper and fold.

Headlines, borders and banners should be fun.



HOMEBREW CLUBS



Caroline Duncker

Include photos and illustrations so that your newsletter is not too text heavy.

Place a table of contents on first page to guide readers.

Keep template simple and adaptable to new information and art.



The Write Stuff: How to Publish a Club Newsletter

Any homebrew club regardless of size and age can publish a newsletter. Newsletters provide insight into a club's philosophy and goals, update members on events and meetings, educate about beer and brewing and attract new members. A newsletter editor maintains the club's image through the newsletter and conveys important information to members, a vital job within any club. In this article five experienced newsletter editors share their wisdom on how to publish quality newsletters.

The Budget

Before writing a newsletter and compiling contents, calculate your budget for production, printing and postage. The budget will determine the number of pages, size and format options, weight limitations and whether it will be mailed first or third class. Membership dues typically cover the cost of printing, copying and mailing newsletters to members, but many mailing lists include complimentary subscriptions for other homebrew clubs,

local supply shops, breweries and other interested parties. Budget carefully for printing, copying and postage for the entire list.

Hop, Barley and the Alers of Boulder, Colo., decided to cut its mailing list after years of mailing copies to nonpaying members. "We were mailing 250 copies each month and only 100 people were active members," says Rex Clingan, 1995 secretary and current president. As with most clubs, the newsletter is Hop Barley's biggest expense. "We saved roughly \$400 for the year by taking a good look at the newsletter mailing list," says Clingan.

J.D. Baucom, former newsletter editor of the Brew Crew News in Portland, Ore., reports their six-page, 8 1/2- x 11-inch newsletter costs about \$60 for printing and \$45 per month to mail to 185 people. Membership dues cover the cost of the newsletter but additional funding is raised through summer beer festivals such as the Oregon Brewers Festival for a healthier balance sheet.

Bruce Feist of Brewers United for Real Potables BURP News in the Washington, D.C., area says he has never had to cut an

article down in size to meet the postage budget, but the December 1995 issue came close. "I had to work hard to format all the articles for inclusion. Usually our newsletter is 10 pages, but this one was 20 pages. I think 20 pages is now our limit," says Feist.

A newsletter can be financed by selling advertising space or by getting sponsors for club events. If clubs are able to secure sponsors for meetings and special events more dues money can be dedicated to the newsletter. However, clubs have mixed philosophies about bringing in advertising. Feist of BURP is adamantly opposed to advertising, saying, "the club doesn't want to get dependent on advertiser money nor does it want to be swayed in its opinions by advertisers." BURP News does give free publicity to some homebrew shops in the area.

Renie Yeh of Crown of the Valley Brewing Society in Pasadena, Calif., says they have an official sponsor, the Crown City Brewery, and are not looking for potential advertisers.

Steve Keppler of the Maltose Falcons in Woodland Hills, Calif., is in favor of bringing in advertisers. "We would have more money

Indicate issue.

ZYMURGY Summer 1996

There should be continuity in your newsletter's image.

for the newsletter's appearance, spot color pages and more articles if we brought in advertisers," says Keppler. "There are mixed feelings on the board, though; they don't want the newsletter to get too commercial."

The Image

When a newsletter editor takes the job he or she is typically in charge of editorial and design decisions for at least one year. Every newsletter editor I spoke to agreed that the newsletter should maintain a certain continuity over the years and be identifiable to the individual club.

Choosing software is the first item of business. Many of the newsletter editors use Aldus or Adobe PageMaker™, Newsletter Wizard™ templates or Microsoft Publisher™ for PCs or Macintosh. Once software is selected, design can begin.

Keppler of the Maltose Falcons Brews and News changed the format from 8 1/2 by 11, stapled, to legal-size paper folded horizontally and stapled in the middle to form a small book. "I looked at the old newsletter

and thought, this is boring," says Keppler. The changes have met a warm reception and the format sets the newsletter apart from other mailings. He adds it is important to be creative with the newsletter's appearance.

Spice up a club newsletter and attract attention by including photos of club activities and members at meetings, homebrew labels, clip art and original artwork produced by members or the editor. Two popular drawing programs for producing original artwork on computer are Adobe Illustrator™ and Macromedia Freehand™. Service bureaus (see "desktop publishing" in the Yellow Pages) can scan original photos, labels or hand-drawn artwork on to disk for placement in your newsletter if you don't have a scanner. Art and hobby stores carry books of clip art that can be used to spice up long blocks of text. These books contain borders, shapes and numerous other images you can put to creative use in your newsletter. Computer and design magazines typically advertise clip art sources and font catalogs, which are another good source for art. Designing an inviting newsletter can be another creative outlet for your homebrewing hobby.

Feist advises keeping the newsletter simple at first with little variation in type. "This helps keep the newsletter readable," he says.

It is a good idea to include a masthead listing key club officials with contact information so new members know who to contact when they want to join, and authors can send their article proposals to the appropriate person.

Clingan made a few changes to the Wort Alert newsletter. "I decided to place a table of contents on the front page to let members know what to expect inside, and I added a recipe column. Just these simple changes were noticed and appreciated by club members," he says.

Securing and Submitting Articles

By using computer e-mail, securing articles for newsletters has become easier. Most submissions are received via e-mail, on-line bulletin boards or computer disk. Some contributors don't have access to com-

 AHA SANCTIONED COMPETITION <i>Kudos</i>			
<p>April 22, 1995 ST. PAUL BREWING CELEBRATION St. Paul, Minn., 152 entries Ray Taylor of Fargo, N.D., won the competition.</p>	<p>Sept. 23, 1995 COMMON GROUND COUNTRY FAIR Windsor, Maine, 253 entries David Thibodeau of Augusta, Maine, won best of show.</p>	<p>Sept. 30, 1995 ROCK, RHYTHM AND BREWS HOMEBREW COMPETITION Portland, Ore., 51 entries Martin Wilde and Ken Rea of Aloha, Ore., won best of show.</p>	<p>Oct. 14, 1995 DIXIE CUP Houston, Texas, 544 entries Darrell Simon of Rowlett, Texas, won best of show.</p>
<p>Aug. 20, 1995 BENTON-FRANKLIN COUNTY FAIR Kennewick, Wash., 58 entries Jim Durham of Richland, Wash., won best of show.</p>	<p>Sept. 23, 1995 BREWFEST '95 Fort Walton, Fla., 78 entries Bryan E. Schwab of Panama City, Fla., won best of show.</p>	<p>Oct. 1, 1995 EIGHTH EVANSTON FIRST HOMEBREW CHALLENGE Evanston, Ill., 55 entries Martin Stokes of Old Town, Maine; Judson Weaver of Evanston, Ill.; Tom Barta and Robin Hawthorn of Evanston, Ill.; and Bob Ward of Orland Park, Ill., won best of show.</p>	<p>Oct. 20, 1995 FOURTH ANNUAL UNFERMENTABLES HOMEBREW SHOOTOUT Denver, Colo., 104 entries Jim Jacobson of Broomfield, Colo., won best of show.</p>
<p>Aug. 27, 1995 WESTERN WASHINGTON FAIR BEER COMPETITION Puyallup, Wash., 215 entries David Uhrbom of Seattle, Wash., won best of show.</p>	<p>Sept. 24, 1995 ELIZABETHAN HOMEBREWING COMPETITION Novato, Calif., 97 entries Kelly Dunham of Pacifica, Calif., won best of show.</p>	<p>Oct. 7, 1995 SECOND ANNUAL TENNESSEE VALLEY HOMEBREW COMPETITION Knoxville, Tenn., 78 entries Martin Bates of Knoxville, Tenn., won best of show.</p>	<p>Oct. 21, 1995 FAMOUS URBAN KNAVES OF GRAIN HOMEBREW COMPETITION Lombard, Ill., 77 entries Jay Kash of Downers Grove, Ill., won best of show.</p>
<p>Sept. 23, 1995 MINNESOTA BREWFEST '95 Minneapolis, Minn., 303 entries Mickey and Vi Walker of Fargo, N.D., won best of show.</p>	<p>Sept. 30, 1995 SECOND ANNUAL SIN CITY SUDZER HOMEBREW COMPETITION Sheboygan, Wis., 51 entries Rick Woods of Sheboygan, Wis., won best of show.</p>	<p>Oct. 8, 1995 STATE FAIR OF TEXAS Dallas, Texas, 250 entries Mark Baggesen of Richardson, Texas, won best of show.</p>	<p>Oct. 21, 1995 ARIZONA SOCIETY OF HOMEBREWERS' OKTOBERFEST HOMEBREWING COMPETITION Phoenix, Ariz., 80 entries Ron Kloth of Scottsdale, Ariz., won best of show.</p>
			<p>Oct. 28, 1995 HARVEST MOON BEER FESTIVAL Regina, Saskatchewan, Canada, 82 entries Brant Ross of Regina, Saskatchewan, Canada, won best of show.</p>
			<p>Oct. 28, 1995 SPOOKY BREW REVIEW Chicago, Ill., 171 entries Mike Rivard of Chicago, Ill., won best of show.</p>
			<p>Oct. 30, 1995 SOCIETY OF AMERICAN FORESTERS HOMEBREW COMPETITION Portland, Maine, 21 entries Mary Ann Fajvan and Rob Lynn of Independence, W.Va., won best of show.</p>
			<p>Nov. 4, 1995 VIRTUAL VILLAGE HOMEBREW COMPETITION: NETWORK 1 Multiple sites connected via CompuServe, 36 entries Kerry Hauptli of Carrollton, Texas, won best of show.</p>
			<p>Nov. 12, 1995 HOPS-BOPS HOMEBREWERS OF PHILADELPHIA & SUBURBS — BEST OF PHILADELPHIA AND SUBURBS Philadelphia, Pa., 182 entries Joe Mezo of Doylestown, Pa., won best of show.</p>
			<p>Nov. 18, 1995 SECOND ANNUAL NAKED PUEBLO HOMEBREW COMPETITION Tucson, Ariz., 84 entries Uwe Boer of San Diego, Calif., won best of show.</p>

AHA CLUB-ONLY COMPETITION WINNERS

1995 BEST OF FEST

- 1st TOM STRAND** of Tacoma, Wash., representing the Homebrewers of Puget Sound
- 2nd VINCE SHUMSKI** of York, Pa., representing the York Area Homebrewers Association
- 3rd STAN HOLDER** of Wichita, Kan., representing the Derby Brew Club

The 1995 Best of Fest Club-Only Competition received 36 entries for the Oct. 28, 1995, judging organized by Illinois' Club Wort.

1995 RENOWNED BROWN

- 1st VINCE SHUMSKI** of York, Pa., representing the Harrisburg Area Homebrewers Association
- 2nd MIKE AND LAVON RIDDLE** of San Rafael, Calif., representing the Marin Society of Homebrewers
- 3rd MARK SCHMITT** of Huber Heights, Ohio, representing Dayton Regional Amateur Fermentation Technologists (DRAFT)

The 1995 Renowned Brown Club-Only Competition received 64 entries for the December judging organized by the Prairie Homebrewing Companions of Fargo, N.D.

puters, so most clubs accept typed documents and even hand written text. Baucom says, "I want to encourage members to write, so I'll accept just about anything — just like the newsletter advertises."

The Internet also has provided access to discussions on homebrew-related subjects, information for newsletter articles and leads for new authors. Feist participates in on-line discussions and asks permission to publish interesting topics in his newsletter.

Yeh says she's never had to solicit writers. "Tom Estudillo writes a regular column and other folks fill in. We've never been lacking for information."

Feist says, "We have regular columns from our officers and there's a group I can always count on for contributions. I also seek out others who are doing interesting work."

For some clubs it isn't always that easy. Baucom says he's had to take on some story writing on occasion even though it isn't the newsletter editor's job. Clingan and the other officers write most of the articles for the Wort Alert. "It's a lot of work to be putting it together and writing it," says Clingan. "I hope

to have more time to write articles now that I am no longer the club secretary," he says.

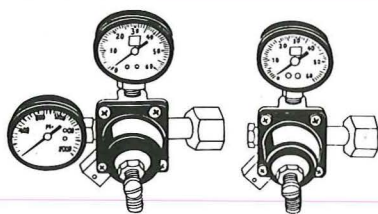
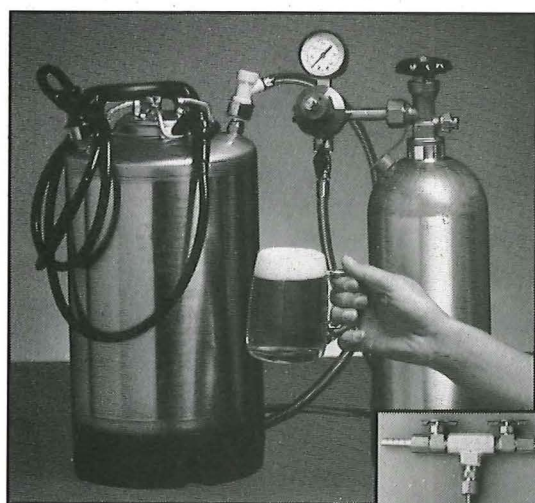
Appropriate articles can be reprinted from magazines and news or newspapers if permission is secured from the publisher. Most publications and authors are willing to let clubs reprint their material as long as proper credit is given. And occasionally this works in reverse with publication editors spotting potential authors and articles from club newsletters.

All the newsletter editors stressed the importance of allowing enough time to put the newsletter together. Keppler says, "It is a two-week process between article deadlines and mailing the newsletter." Feist recommends a three-week time frame so members have their newsletter seven days prior to the next meeting.

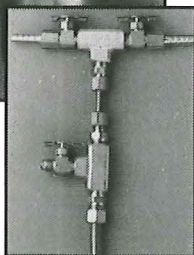
Newsletters are a large part of membership benefits. As Keppler says, "It is a way of keeping in touch with the club and the homebrewing community at large."

All of these aspects play a part in the overall vision of the newsletter. So get designing, delegating and writing — you will see the results!

Caroline Duncker is the AHA assistant and has been homebrewing since 1992.



CO₂ Pressure Regulators designed especially for home brewing



- COUNTER PRESSURE
- BOTTLE FILLER: Saves Time & Money
- WHOLESALE ONLY
Dealer Inquiries Invited

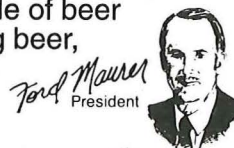
WE MAKE IT EASY FOR YOU!

Home Brew Kegs (3 or 5 gallons)

The Foxx Home Brew Keg allows you to dispense, store and cleanup with bulk efficiency. All components are heavy-duty, but simple to use.

The Foxx Bottle Filter can be your easy way to bottle filling. By following simple instructions you can produce a sediment free bottle of beer with the same carbonation as keg beer, with no foaming!

P.S. We also specialize in soda keg parts, e.g. disconnects, fittings, faucets, taps and tubing.

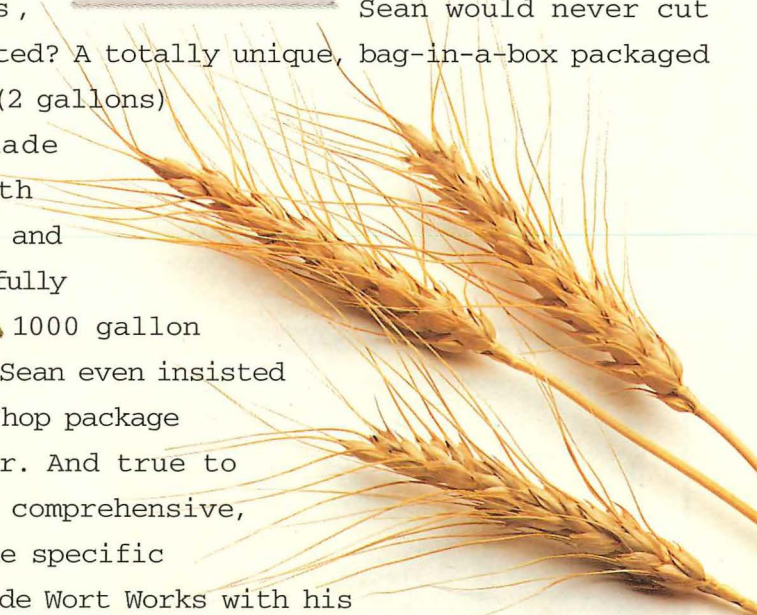
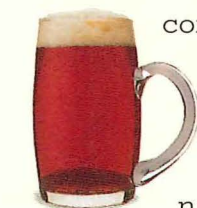
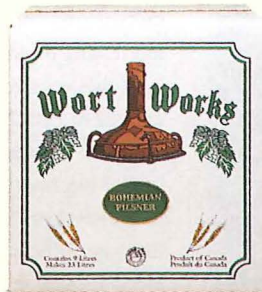


421 Southwest Blvd., Kansas City, MO 64108
(816) 421-3600
K.C. (800) 821-2254 FAX (816) 421-5671
Denver (800) 525-2484 FAX (303) 893-3028



This is Sean. He's our beer guy.

Matter of fact, around Brew King, we call him "The Beer Guy". After all, he knows a thing or two about beer. And as you can see, he's pretty happy right now. Why? Because after months of self-imposed exile in Brew King's (windowless) brewing lab, Sean has emerged with Wort Works, an all-malt brewing kit even by Sean's standards. You see, Sean belongs to that elite group of homebrewing purists - commercial brews and the ones that scoff at most insist on choice natural ingredients masterpieces. With Wort Works, Sean would never cut



corners. So what has Sean created? A totally unique, bag-in-a-box packaged product offering 9 litres (2 gallons) of concentrated wort made from 100% barley malt with naturally processed hops and filtered Canadian water, fully boiled in our 1000 gallon brew kettle. Sean even insisted on including a special dry hop package for extra aroma and flavour. And true to form, his instructions are comprehensive, even with information on the specific ingredients used. Sean's no dummy. He made Wort Works with his fellow homebrewers in mind, but he also made sure that its user friendly, no-boil method would be perfect for beginners too. Keep Sean happy. Make his Mom proud. Try Wort Works. The results will make you (and your friends) happy too.



**YOUR GUARANTEE
OF QUALITY.**

Available at specialty home brewing stores throughout the United States and Canada. For the dealer nearest you, contact:

Western Canada
Brew King
1622 Kebet Way,
Port Coquitlam, B.C.
V3C 5W9
(604) 941-5588

Western U.S.A.
E.H. Steinbart Co.
234 S.E. 12th Ave.,
Portland, Oregon
97214
(503) 232-8793

Ontario
Winexpert Inc.
710 South Service Rd.,
Stoney Creek, Ontario
L8E 5S7
1-800-267-2016

Eastern U.S.A.
L.D. Carlson Co.
463 Portage Blvd.,
Kent, Ohio
44240
1-800-321-0315

Quebec
Distrivin Ltée.
950 Place Trans Canada
Longueuil, Quebec
J4G 2M1
(514) 442-4487

HOMEBREW CONNECTION

THESE FINE RETAIL SHOPS ACROSS NORTH AMERICA OFFER HOMEBREWING INGREDIENTS AND SUPPLIES. PLAN TO VISIT THEM WHEN YOU ARE IN THE AREA.

ARIZONA

GunnBrew Supply Co.
16627 N. Cave Creek Rd.
Phoenix, AZ 85032
(602) 788-8811

The Home Brewery
4641 S. Hwy. 92
Sierra Vista, AZ 85635
(520) 378-4240; (800) 572-4290

Homebrewers Outpost
823 N. Humphreys
Flagstaff, AZ 86001
(520) 774-2499; (800) 450-9535

Mile High Home Brew Supply
PO BOX 27973
Prescott Valley, AZ 86312-7973
(800) 636-4945; FAX (520) 775-0300

ARKANSAS

C.J.'s "Old Time Depot"
373 CC 607
Rt. 3, Box 712
Jonesboro, AR 72410
(501) 935-3857

Simple Pleasures Home Wine & Beer
maker's Supply
115 N. 10th St., Suite C103
Fort Smith, AR 72901
(501) 783-2500

CALIFORNIA

Barley and Wine
Home Fermentation Supply
1907 Central Ave.
Ceres, CA 95307
(209) 538-BREW; (800) 500-BREW

Bencomo's Homebrew Supply
1544 N. Palm
Fresno, CA 93728
(209) 237-5823

The Beverage People
840 Piner Rd. #14
Santa Rosa, CA 95403
(707) 544-2520; (800) 544-1867

Brew Buddys
1509 Aviation Blvd.
Redondo Beach, CA 90278
(310) 798-BREW

Brew Mart
1630 F St.
Eureka, CA 95501
(707) 445-4677 (HOPS);
(800) 286-2739 (BREW)

Bucket of Suds
317-A Old County Rd.
Belmont, CA 94002
(415) 637-9844

Culver City Home Brewing Supply
4358 1/2 Sepulveda Blvd.
Culver City, CA 90230
(310) 397-3453

Doc's Cellar
470 Price St.
Pismo Beach, CA 93449
(805) 773-3151

Fermentation Settlement
1530 Saratoga-Sunnyvale Rd.
San Jose, CA 95129
(408) 973-8970

Fermentation Frenzy
991 N. San Antonio Rd.
Los Altos, CA 94022
(415) 941-9289

Fremont Homebrew Supply
37918 Stenhammer Dr.
Fremont, CA 94536
(800) 655-6060; (510) 794-8694;
FAX (510) 794-8072

Great Fermentations of Marin
87M Larkspur
San Rafael, CA 94901
(415) 459-2520; (800) 570-BEER

The Home Brewery
24723 Redlands Blvd. #F
San Bernardino, CA 92408
(909) 796-6099; (800) 622-7393

HopTech
3015 Hopyard Rd. Suite E
Pleasanton, CA 94588
(510) 426-1450; (800) DRY-HOPS;
FAX (510) 736-7950

Napa Fermentation Supplies
PO Box 5839
575 Third St., Suite A
Napa, CA 94581
(707) 255-6372; (800) 242-8585

Oak Barrel Winecraft Inc.
1443 San Pablo Ave.
Berkeley, CA 94702
(510) 849-0400

Orange County Homebrew Supply
18017 Skypark Circle, Suite K
Irvine, CA 92714
(714) 851-0798

Portable Potables
1011 41st Ave.
Santa Cruz, CA 95062
(408) 476-5444

R & R Home Fermentation Supplies
8385 Jackson Rd.
Sacramento, CA 95826
(916) 383-7702

Ruud-Rick's Homebrew Supply
7273 Murray Dr. #17
Stockton, CA 95210
(209) 957-4549

San Francisco Brewcraft
1555 Clement St.
San Francisco, CA 94118
(415) 751-9338

South Bay Homebrew Supply
PO Box 3798
Torrance, CA 90510
(310) 517-1841; (800) 608-BREW

Stein Fillers
4180 Viking Way
Long Beach, CA 90808
(310) 425-0588

COLORADO

The Brew Hut
16883 E. Iliff Ave.
Aurora, CO 80013
(303) 752-9336; (800) 730-9336

The BREW-IT Co.
120 W. Olive St.
Fort Collins, CO 80524
(800) 748-2226; (303) 484-9813

Doc's Brew Shop
3150-B1 S. Peoria
Aurora, CO 80014
(303) 750-6382

Front Range Bierhaus
3025A North Hancock Ave
Colorado Springs, CO 80907
(719) 473-3776

Highlander Home Brew Inc.
151 W. Mineral Ave., Suite 113
Littleton, CO 80120
(303) 794-3923; (800) 388-3923

The Homebrew Hut
555 I Hwy. 287
Broomfield, CO 80020
(303) 460-1776

Liquor Mart Inc.
1750 15th St.
Boulder, CO 80302
(303) 449-3374; (800) 597-4440

Old West Homebrew Supply
301 B E. Pikes Peak Ave.
Colorado Springs, CO 80903
(719) 635-2443; (800) ILV-BREW

Pearl Street Brew Works
1540A S. Pearl St.
Denver, CO 80210
(303) 722-9050
swroger@csn.net

Poppy's Hop Shop
3333 North County Rd 54G
Laporte, CO 80535
303-224-4420

Rocky Mountain Homebrew
7292 N. Federal Blvd.
Westminster, CO 80030
(303) 427-5076

What's Brewin'
2886 Bluff St.
Boulder, CO 80301
(303) 444-9433

Wine & Hop Shop
705 E. 6th Ave.
Denver, CO 80203
(303) 831-7229

The Wine Works
5175 W. Alameda Ave.
Denver, CO 80219
(303) 936-4422

CONNECTICUT

Great American Home Brew Supplies at Geremia Gardens
1720 West St.
Southington, CT 06489
(203) 620-0332; (800) 94-UBREW

The Mad Capper
PO Box 161
Glastonbury, CT 06033
(203) 659-8588

S.E.C.T. Brewing Supply
c/o SIMTAC
20 Attawan Rd.
Niantic, CT 06357
(860) 739-3609

Wine and Beer Art of Smith Tompkins
1501 E. Main St., Route 202
Torrington, CT 06790
(203) 489-4560

DELAWARE

Delmaria Brewing Craft
Rt. 3, Box 190, County Rd. 411
Millsboro, DE 19966
(302) 934-8588

Wine Hobby USA
2306 W. Newport Pike
Stanton, DE 19804
(302) 998-8303; (800) 847-HOPS

FLORIDA

Brew Shack
4025 W. Waters Ave.
(Waterside Plaza)
Tampa, FL 33614
(813) 889-9495; (800) 646-BREW

Brew Yourself
724 St. Clair St.
Melbourne, FL 32935
(407) 752-1105;
(800) 224-3002 ext. 0080

BrewCrafters
6621 Gateway Ave.
Sarasota, FL 34231
(813) 925-9499; (800) HOT-WORT

The Home Brewery
416 S. Broad St.
PO Box 575
Brooksville, FL 34601
(904) 799-3004; (800) 245-BREW

Worm's Way Florida
4402 N. 56th St.
Tampa, FL 33610
(813) 621-1792; (800) 283-9676

GEORGIA

Brew Your Own Beverages Inc.
20 E. Andrews Dr. N.W.
Atlanta, GA 30305
(404) 365-0420; (800) 477-BYOB

Wine Craft of Atlanta
5920 Roswell Rd.
Parkside Shopping Center
Atlanta, GA 30328
(404) 252-5606

ILLINOIS

Beer In A Box
27W460 Beecher St.
Winfield, IL 60190
(708) 690-8150; (800) 506-BREW

Bev Art Homebrew & Wine Making Supply
10035 S. Western Ave.
Chicago, IL 60643
(312) 233-7579; (312) BEER579

Brew & Grow
1824 N. Besly Ct.,
Chicago, IL 60622
(312) 395-1500;
FAX (312) 395-2204

Brew & Grow
2379 Bode Rd.,
Schaumburg, IL 60194
(847) 885-8282;
FAX (847) 885-8634

The Brewer's Coop
1010 N. Washington St.
Naperville, IL 60563
(800) 451-6348

Chicago Homebrew Supplies
1444 W. Chicago Ave.
Chicago, IL 60622
(800) 213-BEER

Chicagoland Winemakers Inc.
689 W. North Ave.
Elmhurst, IL 60126-2132
(708) 834-0507; (800) 226-BREW

Crystal Lake Health Food Store
25 E. Crystal Lake Ave.
Crystal Lake, IL 60014
(815) 459-7942

CZ Tech
333 S. Cross St.
Wheaton, IL 60187-5405
(708) 688-7886

Evanston First Liquors Homebrewing
1019 W. Davis St.
Evanston, IL 60201
(708) 328-9651

Home Brew Shop
307 W. Main St.
St. Charles, IL 60174
(708) 377-1338

Lil' Olde Winemaking Shoppe
5 N. 245 Wiltshire Lane
Sugar Grove, IL 60554
(708) 557-2523

MALT-N-HOP STOP
2019 E. Euclid Ave. (At River Rd.)
Mt. Prospect, IL 60056
(847) 827-BREW

Old Town Liquors
514 S. Illinois Ave.
Carbondale, IL 62901
(618) 457-3513

River City Homebrewers
802 State St
Quincy, IL 62301
217-222-9813

Rock River Brewing Supply
129 S. Phelps Ave. #209
Rockford, IL 61108
(815) 227-HOPS;
FAX (815) 227-4820

Sheaf & Vine Brewing Supply
Inside Mainstreet Deli & Liquors
5424 S. LaGrange Rd.
Countryside, IL 60525
(708) 430-HOPS

South Bay Brewing Supply
11405 Main St.
Roscoe, IL 61073
(815) 623-9599

You-Brew Country Food & Liquor
19454 S. Route 45
Mokena, IL 60448
(708) 479-2900

INDIANA

Worm's Way Indiana
3151 South Hwy. 446
Bloomington, IN 47401
(812) 331-0300; (800) 274-9676

KANSAS

Bacchus & Barleycorn Ltd.
6633 Nieman Rd
Shawnee, KS 66203
(913) 962-2501

KENTUCKY

Nuts N Stuff Inc., Bulk Foods
2022 Preston St.
Louisville, KY 40217
(502) 634-0508; (800) 867-NUTS

Winemakers Supply & Pipe Shop
9477 Westport Rd.
Westport Plaza
Louisville, KY 40241
(502) 425-1692; (800) 641-1692

MAINE

The Purple Foot Downeast
116 Main St., Dept. Z
Waldoboro, ME 04572
(207) 832-6286

MARYLAND

Brew Masters Ltd.
12266 Wilkins Ave.
Rockville, MD 20852
(301) 984-9557; (800) 466-9557

Cellar Works
at Fullerton Liquors
7542 Belair Rd.
Baltimore, MD 21236
(410) 665-2900

Chesapeake Homebrew
14 Aventura Ct.
Randallstown, MD 21133
(800) 948-9776

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

The Flying Barrel
111 S. Carroll St.
Fredrick, MD 21701
(301) 663-4491

Happy Homebrewing Supply Co.
Old Salisbury Mall
351 Civic Ave.
Salisbury, MD 21801
(410) 543-9616

Maryland Homebrew
6770 Oak Hall Lane, Suite 115
Columbia, MD 21045
(410) 290-FROTH;
FAX (410) 290-6795;
http://WWW.FROTH.COM

Midnight Homebrew Supply
229 E. Main St.
Westminster, MD 21157
(410)-876-6999; FAX (410) 876-7954

Olde Towne Homebrew Supply
302 B E. Diamond Ave.
Gaithersburg, MD 20877
(301) 330-8881 oths@soho.ios.com
http://www.custom-web.com/oths/

MASSACHUSETTS

Barleymalt and Vine
26 Elliot St.
Newton, MA 02161
(800) 666-7026

Barnstable Brewers Supply
Windmill Square, Route 28
PO BOX 1555
Marstons Mills, MA 02648
(508) 428-5267

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 Hoppy Brewer Supply Co.
493 Central Ave.
Seekonk, MA 02771
(508) 761-6615

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) 868-5580; 800-Send-Ale

Stella Brew Homebrew Supply
16 State Rd., Route 20
Charlton City, MA 01508
(508) 248-6823; (800) 248-6823

Stella Brew Homebrew Supply
197 Main St.
Marlboro, MA 01752
(508) 460-5050; (800) 248-6823

Stella Brew @ Grovers
104 Highland St.
Worcester, MA 01609
(508) 797-9626; (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

Michigan Homebrew Supply
PO Box 8244
Roseville, MI 48066-8244
(810) 774-5619; (800) 278-1311

Plum Creek Spirits
PO Box 414
Vernon, MI 48476
(517) 288-6778; (800) 405-4-ALE

Red Wagon Wine Shoppe
2940 S. Rochester Rd.
Rochester Hills, MI 48307
(810) 852-9307

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

The Home Brewery

S. Old Highway 65
PO Box 730
Ozark, MO 65721
(417) 485-0963; (800) 321-BREW

Johnny Brew-Meister's

Crossroads West Shopping Center
2101 W. Broadway
Columbia, MO 65203
(314) 446-8030; FAX (314) 446-8031

St. Louis Wine & Beermaking

251 Lamp & Lantern Village
St. Louis, MO 63017
(314) 230-8277; FAX (314) 527-5413

Stout Marketing Custom Signage

6425 W. Florissant
St. Louis, MO 63136
(800) 325-8530

Third Fork

690 Walnut
Union Star, MO 64494
(816) 593-2357

Winemaker's Market

4349 N. Essex Ave.
Springfield, MO 65803
(417) 833-4145

Witt Wort Works

1032 S. Bishop Ave.
Rolla, MO 65401
(314) 341-3311

Worm's Way Missouri

2063 Concourse
St. Louis, MO 63146
(314) 994-3900; (800) 285-9676

NEBRASKA

Kirk's Do-It-Yourself Brew

1150 Cornhusker Highway
Lincoln, NE 68521
(402) 476-7414

NEVADA

Mr. Radz

Homebrew Supply Shop

4972 S. Maryland Pkwy. #12
Las Vegas, NV 89119
(702) 736-8504; Outside NV; (800)
465-4723; FAX (702) 736-7942

NEW HAMPSHIRE

Beer Essentials

611 Front St.
Manchester, NH 03102
(603) 624-1080; (800) 608-BEER

Brewer, Cook & Baker

104 Congress St. (PO BOX 6555)
Portsmouth, NH 03801
(603) 436-5918; FAX (603) 430-7532

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 Brewer's & Vintner's Supply Co.

290 Cassville Rd.
Jackson, NJ 08527
(908) 928-4045

The Brewmeister

115 N. Union Ave.
Cranford, NJ 07016
(908) 709-9295; (800) 322-3020

The Home Brewery

56 W. Main St.
Bogota, NJ 07603
(201) 525-1833; (800) 426-BREW

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

Hunterdon Homebrew Shoppe

10 Bridge St.
Frenchtown, NJ 08825
(908) 996-6008

Red Bank Brewing Supply

67 Monmouth St.
Red Bank, NJ 07701
(908) 842-7507; (800) 779-7507

Richland General Store

Route 40, PO Box 185
Richland, NJ 08350
(609) 697-1720

Tully's Brew-N-Barrel

476B Bloomfield Ave.
Verona, NJ 07044
(201) 857-5199

U-Brew Co.

319 1/2 Millburn Ave.
Millburn, NJ 07041
(201) 376-0973

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

NEW YORK

Arbor Wine & Beermaking Supplies Inc.

74 W. Main St.
East Islip, NY 11730
(516) 277-3004; FAX (516) 277-3027

At Home Warehouse Distributors

PO Box 185
Clarence NY 14031
(800) 210-8585; FAX (716) 681-0284
AHWD@ag.net
<http://WWW.WHWD.COM>

The Brew Shop @ Cornell's

310 White Plains Rd.
Eastchester, NY 10707
(800) 961-BREW;
FAX (914) 961-8443

Brew By You Inc.

119 Rockland Center, Suite 293
Nanuet, NY 10954
(800) 9-TO-BREW;
FAX (914) 732-8213

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; (800) 762-2560

Brewfellow's

Home Brewing Supplies

2075 S. Park Ave.
Buffalo, NY 14220
(716) 824-5253; (800) 840-BREW

The Brews Brothers at KEDCO - Beer & Wine Supply Store

564 Smith St.
Farmingdale, L.I., NY 11735-1168
(516) 454-7800;
(800) 654-9988 (outside N.Y. only);
FAX (516) 454-4876

D.P. Homebrew Supply

1998 E. Main St., Route 6
Mohegan Lake, NY 10547
(914) 528-6219

E.J. Wren Homebrewer Inc.

Ponderosa Plaza (behind Heids)
209 Oswego St.
Liverpool, NY 13088
(315) 457-2282

East Coast Brewing Supply

124 Jacques Ave.
PO Box 060904
Staten Island, NY 10306
(718) 667-4459; FAX (718) 987-3942
<http://virtumall.com/EastCoastBrewing/ECBrian.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; (800) BREW666
(outside 315 area code)

The Home Brewery

c/o Smith Restaurant Supply
500 Erie Blvd. E.
Syracuse, NY 13201
(315) 474-8731; FAX (315) 478-7004;
Order Line (800) 346-2556

Hop, Skip & A Brew

58-07 Metropolitan Ave.
Ridgewood, NY 11385
(718) 821-6022

New York Homebrew

221 Old Country Rd.
Carle Place, NY 11514
(800) YOO-BREW;
FAX (516) 294-1872

Niagara Tradition

Homebrewing 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

NORTH CAROLINA

Alternative Beverage

114-0 Freeland Lane
Charlotte, NC 28217
(704) 527-9643; (800) 365-BREW

American Brewmaster

3021-5 Stoneybrook Dr.
Raleigh, NC 27604
(919) 850-0095

Assembly Required

142 E. Third Ave.
Hendersonville, NC 28739
(704) 692-9677; (800) 486-2592

Brew Better Supply

10207 C Chapel Hill Rd.
Morrisville, NC 27560
(919) 467-8934; (800) 915-BREW
BREW BETTER @AOL.COM

Carolina Home Brewing

578 Griffith Rd.
Charlotte, NC 28217
(704) 527-0803

OHIO

The Grape and Granary

1302 E. Tallmadge Ave.
Akron, OH 44310
(216) 633-7223

Portage Hills Vineyards

1420 Martin Rd.
Suffield, OH 44260
(800) 418-6493

OKLAHOMA

Professional Brewers LLC

10902 N. Pennsylvania
Oklahoma City, OK 73120
(405) 752-7380

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
(503) 485-6238

Homebrew Heaven

1292 12th St. S.E.
Salem, OR 97302
(503) 375-3521

PENNSYLVANIA

Beer Unlimited

515 Fayette St.
Conshohocken, PA 19428
(610) 397-0666

Beer Unlimited

Routes 30 and 401,
Great Valley Shopping Center
Malvern, PA 19355
(610) 889-0905

BREW by YOU

3504 Cottman Ave.
Philadelphia, PA 19149
(215) 335-BREW

Country Wines

3333 Babcock Blvd.
Pittsburgh, PA 15237-2421
(412) 366-0151

Home Sweet Homebrew

2008 Sansom St.
Philadelphia, PA 19103
(215) 569-9469; FAX (215) 569-4633

Homebrewer's Outlet

10 Lincoln Circle
Fairless Hills, PA 19030
(215) 943-8569

Keystone Homebrew Supply

779 Bethlehem Pike
Montgomeryville, PA 18936
(215) 855-0100; FAX (215) 855-4567

Mr. Steve's Homebrew Supplies

4342 N. George St.
Manchester, PA 17345
(717) 266-5954; (800) 815-9599;
FAX (717) 266-5954

Neibert's Spielgrund

Wine & Gift Shop
3528 E. Market St.
York, PA 17402
(717) 755-3384

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

SOUTH CAROLINA**Carolina Wine and Cheese**

54 1/2 Wentworth St.
Charleston, SC 29401
(803) 577-6144

U-BREW

1207 Hwy. 17 S.
North 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

The Winery & Brew Shoppe

60 S. Cooper St.
Memphis, TN 38104
(901) 278-2682

TEXAS**Bulldog Brewing Supply**

2217 Babalos
Dallas, TX 75228
(214) 324-4480; (800) 267-2993

C & E Discount Supply

PO Box 30660
Paris, TX 75462
(903) 785-7232

DeFalco's Home**Wine & Beer Supplies**

5611 Morningside Dr., Dept. Z
Houston, TX 77005
(713) 523-8154; FAX (713) 523-5284

Homebrew Supply of Dallas

777 South Central Expwy.
Richardson, TX 75080
(214) 234-5922

Homebrew Headquarters

2810 Greenville
Dallas, TX 75206
(214) 821-7444;
Order lines: (800) 966-4144,
(800) 862-7474

Homebrew**Headquarters — North**

1335 Promenade, Suite 1335
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

Southwest Brewwcenter

2412 Broadway St.
Lubbock, TX 79401
(806) 744-6808

St. Patrick's of**Texas Brewers Supply**

12922 Staton Dr.
Austin, TX 78727
(512) 832-9045; (800) 448-4224

St. Patrick's at Waterloo Brewing

401A Guadalupe St.
Austin, TX 78701
(512) 499-8544; FAX (512) 499-8621

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; (800) 626-2739

Brew-Yers

1879 S. Main St., Suite 160
Salt Lake City, UT 84115
(801) 484-8809

VERMONT**Something's Brewing**

196 Battery St.
Burlington, VT 05401
(802) 660-9007;
Somebrew@aol.com

VIRGINIA**The Barley House**

2780 Metro Plaza
Woodbridge, VA 22192
(703) 494-7929; (800) 760-4062
Barleyhouse@aol.com

Beverage Equipment Companies

4205 B. W. Hundred Rd.
Chester, VA 23831
(804) 796-9760

Brew America

138 Church St. N.E., Suite F
Vienna, VA 22180
(703) 938-4805

The Brewmeister

1215G George Washington
Memorial Hwy.
Yorktown, VA 23693
(804) 595-HOPS

Vintage Cellar

1313 S. Main St.
Blacksburg, VA 24060
(540) 953-CORK; (800) 672-WINE

WASHINGTON**The Beer Essentials**

15219 Pacific Ave. S.
Spanaway, WA 98444
(206) 536-8840

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

The Cellar Homebrew

14411 Greenwood N.
Seattle, WA 98133
(206) 365-7660; (800) 342-1871
homebrew@aa.net

**Jim's 5¢ Home Brew Supply
& Traditional Beer Emporium**

N. 2619 Division St.
Spokane, WA 99207
(509) 328-4850; (800) 326-7769

Kim's Place

Smokey Point Plaza
3405 172 St. N.E.
Arlington, WA 98223
(360) 658-9577

Larry's Brewing Supply

7405 S. 212th St. #103
Kent, WA 98032
(206) 872-6846; (800) 441-BREW

Liberty Malt Supply Co.

1419 First Ave.
Seattle, WA 98101
(206) 622-1880; FAX (206) 622-6648

Lil' Brown Jug

1319 S. 38th St.
Tacoma, WA 98408
(206) 473-1771

Northwest Brewers Supply

915 6th St.
Anacortes, WA 98221
(800) 460-7095; FAX (360) 293-4904

Wee Bairn Home Brew Supply

16510 State Route 9, Suite E
Snohomish, WA 98290
(360) 668-8026; (800) 609-BREW;
FAX (360) 668-0452

Wine & Brew By You

1912 Olympic Hwy. N.
Shelton, WA 98584
(800) 298-BREW; (360) 427-5129

WEST VIRGINIA**The Brewing Station**

314 Lee St. West
Charleston, WV 25302
(304) 343-0350; (304) 343-0439;
(800) 550-0350
BREWFREE@AOL.COM

**Hofburg Homebrewers
and Vintners Supply**

Rt. 1, Box 39 BB
Cairo, WV 26337
(800) 718-2718; (304) 628-3172

Tent Church Vineyard

RD 1, Box 218
Colliers, WV 26035
(304) 527-3916; (800) 336-2915

WISCONSIN**Bristol Brewhouse**

818 E. Chambers St.
Milwaukee, WI 53212
(414) 264-BEER

Life Tools Adventure Outfitter

1035 Main St.
Green Bay, WI 54301
(414) 432-7399

Main Street Marketplace

103 N. Main St.
Waupaca, WI 54981
(715) 258-9160

The Market Basket

Homebrew & Wine Supplies
14835 W. Lisbon Rd.
Brookfield, WI 53005-1510
(414) 783-5233; FAX (414) 783-5203

North's Worts

7625 Sheridan Rd.
Kenosha, WI 53143
(414) 654-2211

North Brewery Supplies

9009 S. 29th St.
Franklin, WI 53132
(414) 761-1018;
(800) 4UDRAFT;
FAX (414) 761-7360

WYOMING**Brew's Brothers****Home Brew Supply**

2214 A Upland St.
Rock Springs, WY 82901
(800) 216-2502

CANADA**MANITOBA****Wine Line and Beer Gear**

433 Academy Rd.
Winnipeg, MB R3N 0C2
(204) 489-7256

ONTARIO**Marcon Filters**

120 Woodstream Blvd., Unit 1
Woodbridge, ONT L4L 7Z1
(905) 264-1494; FAX (905) 264-1495

**To have your shop listed,
please call Linda Starck at
(303) 447-0816 ext. 109.**

The 15th Annual Great American Beer Festival®

This is one anniversary party you don't want to miss!

Make plans now to be in Denver on Sept. 26, 27 and 28, 1996, for the biggest beer tasting this side of Munich. More than 1,350 beers from some 350 American breweries make this an event unlike any other. Members of the American Homebrewers Association® can also attend the private Members-Only Tasting* — just members, media personnel, brewers and the biggest beer menu you'll ever see.

For more information contact the Association of Brewers at (303) 447-0816, info@aob.org; FAX (303) 447-2825; or check the AOB web site at <http://www.aob.org/aob>.

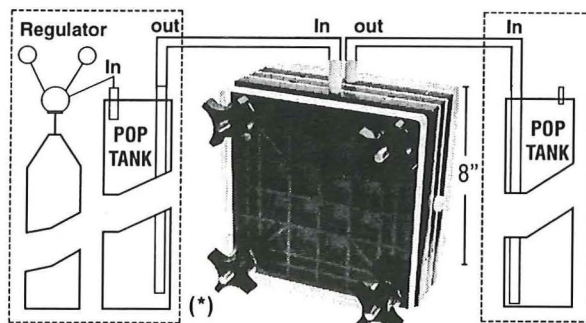
*Some restrictions apply.

Zym 19

MARCON FILTERS

produces Filters for homebrewers, pilot breweries, microbreweries, winemakers, wineries & laboratories.

All models can use pads or reusable membranes
D.E. plates available



(*) "Carosello Pressurized Filter" for Draft Beer
3 Plates Reinforced - Size 8"x 8"

NEW
ADDRESS

Try our "4 WEEK WINE KITS" AT WAREHOUSE PRICES
MANY TYPES AVAILABLE

Marcon Wines & Filters - 1428 Speers Rd. Unit 9,
Oakville, Ont., L6L 5M1

Tel: (905) 825-8847 Fax: (905) 825-8404

BREW LIKE A CHAMPION!

In the never-ending quest to brew the ultimate beer, stop by your local homebrew supply store's AHA Recipe Stand and pick up free award-winning homebrew recipes from AHA National Homebrew Competitions.*

If you don't find an AHA Recipe Stand at your local shop, ask them to call us, and we'll send one at no charge.



American Homebrewers Association®,
PO Box 1679, Boulder, CO 80306-1679, USA;
(303) 546-6514; orders@aob.org; or FAX (303) 447-2825.

*Published in *Victory Beer Recipes* (Brewers Publications, 1994)

Zym 19



The Association of Brewers reminds homebrewers and beer enthusiasts everywhere to "Savor the Flavor Responsibly."

If you have questions or want more information regarding the Association of Brewers' Individual Responsibility Policy, please write to us at PO Box 1679, Boulder, CO 80306-1679, U.S.A.; (303) 447-0816; media@aob.org; or FAX (303) 447-2825.

Zym 19



The Beverage People!

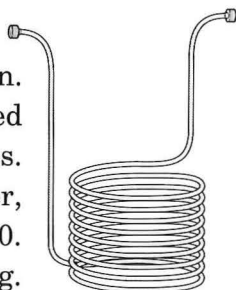
* MEAD * BEER * CIDER * SODA * WINE

Your brewing source.

Save money. Have fun.
Beginning to advanced
supplies.

Precision Wort Chiller,
The Original, only \$30.

Fast, fast shipping.



840 Piner Road, #14 Santa Rosa, CA 95403

Free catalog 800 544-1867

The Art of Cidermaking

With more than 300 years of tradition and spellbinding lore, hard cider is experiencing a resurgence in America.

The Art of Cidermaking presents:

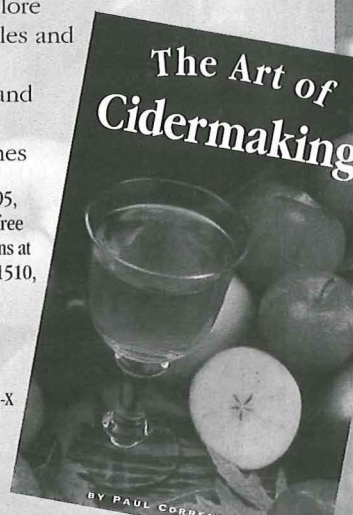
- Cider history and folklore
- Tips for selecting apples and juices
- Cidermaking recipes and instructions
- Cider judging guidelines

Order your copy today for only \$9.95, plus \$4 P&H. To order books or a free catalog, contact Brewers Publications at PO Box 1510, Boulder, CO 80306-1510, U.S.A.; (303) 546-6514; orders@aoob.org; or FAX (303) 447-2825.

7 x 10 • 86 pp. • four-color soft cover • illustrations • b&w photos • Brewers Publications • 1995 • ISBN 0-937381-42-X



Satisfaction Guaranteed
Zym 19



VICTORY BEER RECIPES

America's Best Homebrew
Published by Brewers Publications

Enjoy 128 award-winning recipes for lagers, ales, meads and mixed-style beers, plus judges' tasting notes.

- Brew extract, grain and extract, and all-grain recipes.
- Explore 24 categories of lager, ale, mead and mixed-style beers.

- Read judges' tasting notes.
- Foreword written by Pete Slosberg, founder of Pete's Brewing Co.

8 1/2 x 5 1/2 • 228 pp. • four-color soft cover • b&w photos • Brewers Publications • 1994 • ISBN 0-937381-41-1

To order your copy today for only \$11.95 (\$10.15 for AHA members) plus \$4 P&H contact Brewers Publications at PO Box 1510, Boulder, CO 80306-1679, U.S.A.; (303) 546-6514; FAX (303) 447-2825.



Satisfaction Guaranteed.

zym 19

WE HAVE WHAT YOUR COMPETITION NEEDS!



The **AHA Sanctioned Competition Kit** has everything you need to know about organizing and running a successful homebrew competition. With more than 16 years of experience running competitions all around the country, we've taken the guesswork out of homebrew competitions.

Call Caroline Duncker for an application and information at (303) 447-0816, ext. 116; caroline@aoob.org; or FAX (303) 447-2825.

\$40 for AHA members
\$70 for non-members
Two-month minimum notice is required.

Zym 19



CLASSIFIED

CALL LINDA STARCK AT (303) 447-0816 EXT. 109 FOR OPTIONS, RATES AND DEADLINES.

EQUIPMENT

THE HOMEBREWERS STORE

(800) TAP-BREW

COLLAPSIBLE FERMENTOR

Accordian Brew Boy collapses 5 to 2.5 gallons. Lighter than glass and shatter proof, stopper included \$10 exclusively at Generations Brewing Co. (800) 715-8422.

WORT WORKS

Improve wort extraction efficiency! All stainless-steel equipment includes: false bottom \$69; 1/2 bbl hot liquor tank/boil kettle \$129; Mash tun \$179; mounted temperature probe \$69. Bret at (913) 677-4277 or BAHEDEN@wcc.com.

THE AULD SCOTSMEN

Homebrew supplies. PO Box 179, Paola, KS 66071; (913) 849-3697.

HOMEBREW FILTER KIT

Filter will economically remove sediment, chill haze and most yeast. Other filters are also available. Call Aftak Inc. (800) 240-5366.

INGREDIENTS

IMPORTED WHOLE HOPS!

Free catalog. Just Hops, 335 N. Main, Mt. Zion, IL 62549; (217) 864-4216.

THE BELGIAN SAMPLER

25 lbs of assorted Dewolf-Cosyns two-row malted barley for only \$15.95. Bristol Brewhouse, 818 E. Chambers, Milwaukee, WI 53212; (414) 264-BEER. MC-Visa-AMEX accepted.

We love to talk beer (and wine) and we know what we're talking about! Fast reliable friendly: The Purple Foot. Complete selection. Never out of stock. Free catalog: 3167 S. 92 St. Dept. Z, Milwaukee, WI 53227; (414) 327-2130, FAX (414) 327-6682.

MAKE QUALITY BEERS!

Free catalog and guidebook. Low prices, fastest service guaranteed. Reliable. Freshest hops, grains, yeast, extracts. Full-line equipment. The Celler, Dept. AZ, PO Box 33525, Seattle, WA 98133; (206) 365-7660, (800) 342-1871.

RIVER CITY HOMEBREW

"Domestic Zymurgyological Paraphernalia," PO Box 171, Richmond, UT 84333; (801) 258-5118.

WIT FANS

Authentic sweet and bitter (curaçao) orange peels. Free catalog. Frozen Wort, PO Box 1047, Greenfield, MA 01302; (413) 773-5920.

TRUE BELGIAN CANDI SUGAR

Genuine bitter and sweet orange peel, paradise seeds and other hard-to-find additives available at NJ's most complete homebrew supplier. U-Brew, 319 1/2 Millburn Ave., Millburn, NJ 07041; (201) 376-0973, FAX (201) 376-0493.

THE HOMEBREWERS STORE

(800) TAP-BREW

Head Start Brewing Cultures

The best source for authentic yeast; 8 lambic, 11 Belgians, 15 ales, 17 lagers, 5 weizens and 5 lactic bacteria from only \$2.75. New location, 256 Cherokee Ridge, Athens, GA 30606. Call for a free catalog (706) 548-7051. Absolutely the most interesting yeast catalog available.

Specialty beers, peat and ranch malts, bitter orange, Belgian candi sugar. Free catalog. Carolina Home Brewing, 578 Griffith Rd., Charlotte, NC 28215; (704) 527-0803.

Irish Moss Flakes

Provide your customers with the best. 25 lbs minimum order. Sample upon request. Since 1936. Sea Moss Inc., 30 Prospect St., Kingston, MA 02364. (617) 585-2050, Fax (617) 585-2255. Available through better suppliers.

The incredible \$89 Fermentation Temperature control.

This is the only unit ever designed & built for home brewers! Features: Solid state circuitry, durable metal box, Warms to 85° F & Cools to 32° F, Heavy-duty 15amp design, immersible thermocouple sensor, Easy to set dial with Digital readout, made in the U.S.A.



Brewers Resource
1-800-827-3983

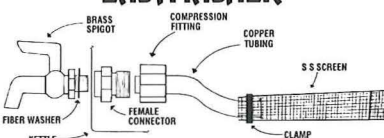
409 Calle San Pablo #104 Camarillo, CA 93012

THE MALT MILL®

for the serious homebrewer or the small brewery. Don't be fooled by pint sized imitations.



EASYMASHER®



- The simplest and least expensive all-grain system.
- Even the novice can achieve extraction of 30+ pts.
- So efficient, it can make beer from flour.
- Easy to install in any brew kettle.
- Nothing else needed for the first all-grain batch.

Jack Schmidling Productions, Inc.

18016 Church Rd. • Marengo, IL 60152 • (815) 923-0031 • FAX (815) 923-0032

CLASSIFIED

A Perfect Place to Buy or Sell!

For options rates and deadlines, call Linda Starck at (303) 447-0816 ext.109, or Chris Lowenstein ext.108.

MEAD

Making Mead? 2 gal. mesquite honey \$20.50 plus UPS Chaparral Honey Corp., 1655 W. Ajo #154-Z, Tucson, AZ 85713.

MISCELLANEOUS

FRANKENBREW

86 min video. Build a brewery for under \$20,000. See in detail how to piece these award-winning systems together. \$49.95 Toko Mas Productions, 136 E. 2nd St., Salida, CO 81201; (800) 795-1877.

YARD GLASSES

American handcrafted hardwood stands with foot, 1/2 yard and yard glasses. Available in single and competition sets from NJ's most complete homebrew supplier. U-Brew, 319 1/2 Millburn Ave., Millburn, NJ 07041; (201) 376-0973, FAX (201) 376-0493.

DISPLAY SIGNAGE

Stout Marketing, America's foremost screenprinter on aluminum, has served the brewing industry with custom metal signage for over 100 years. FAX us sketches of your label and neck art. We will be glad to discuss your advertising and display needs! Voice (800) 325-8530, FAX (314) 385-9412.

THE HOMEBREWER'S STORE

(800) TAP-BREW

ZYMURGY CLASSIFIEDS

The perfect place to buy or sell. Call Linda Starck at (303)447-0816 ext.109.



KEG PARKAS™

by Forty Below™

- * Helps keep your brew cool for hours
- * Most sizes available
- * Durable, machine washable
- * Prices start at \$24⁹⁵
- * Made in U.S.A.

Call for your free catalog

206-846-2081

Graham, WA USA

Brewing Equipment for the Extremes™

PHOTOS ON BEER LABELS

Full-color graphics with your personal photo make great beer labels for any occasion. Prices start at 12/\$8. Sizes start at 3" x 4". B.K Enterprises (770) 971-4648, Marietta, GA 30062.

NEON

Indoor neon signs personalized for your brew. Self-contained, affordably priced, ready to hang and plug in. Arrow Neon (800) 451-6366.

SUPPLIES

HOPS, YEAST, GRAINS

Malt extracts, adjuncts, Yeast Bank™ Super Ferment™ (a complete yeast nutrient), large inventory brewing and dispensing equipment. Free catalog. Country Wines, 3333y Babcock Blvd., Pittsburgh, PA 15237; (412) 366-0151.

Beermakers and Winemakers

Free catalog. Since 1967. Call (816) 254-0242, or write Kraus, Box 7850-Z, Independence, MO 64054.

STELLA BREW

We treat you kind! Three great locations: 16 St. Rd., Charlton City, MA; 197 Main St., Marlboro, MA; and Highland St., Worcester, MA; (800) 248-6823. Free catalog/info!

THE HOMEBREWER'S STORE

(800) TAP BREW

BREWING SUPPLIES ONLINE

<http://www.brewguys.com> or call for color catalog: (914) 339-0966 or (800) 366-8340.

St. Patrick's of Texas

12922 Staton Dr • Austin • Texas • 78727

800-448-4224
FREE CATALOG

- wort chiller \$26
- 8 gallon pot \$36
- 7 gallon carboy \$17
- Wyeast \$1.50 limit 1 w/purchase

**Rauch Malt & complete line
of German malts**

- Refrigerator controller
- Mesquite & Guajillo Honey
- 5 gallon kegs 6/\$100
- Counter Pressure Filler \$49
- Briess & Alexander's Extract \$1.80/lb
- 3-Level Brewing System
- complete kegging system \$141



OPENING A BREWPUB?

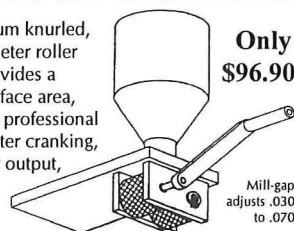
The **GUIDE TO OPENING A BREWPUB OR MICROBREWERY** is everything you need to know to successfully open your brewery, in one easy-to-follow book. The Guide takes you from feasibility analysis to the business plan; through financing to brewery operations (grain to glass) and brewhouse design, regulatory compliance and marketing to achieve success. An exclusive American Brewers Guild publication. Send \$129 to 1107 Kennedy Pl., Ste. 3, Davis

CA, 95616 or
MC/VISA orders to
800-636-1331.
Call for a FREE
'95-'96 course
catalog.



Introducing, The BrewTek GrainMill

Our medium knurled, large diameter roller design provides a greater surface area, for a more professional crush, lighter cranking, & superior output, with no gears or pulleys to wear out if you motorize your unit. Add full mill-gap adjustability, include a hopper that holds up to 5 pounds of malt, then combine stainless steel axles, hardened roller surfaces, bronze bushings with precision CNC machining and you've got a serious mill that's going to last you a lifetime!



Only
\$96.90!

Mill-gap
adjusts .030
to .070

Brewers Resource

1-800-827-3983

409 Calle San Pablo #104 Camarillo, CA 93012

GRAND OPENING

MUNTON & FISON DRIED MALT EXTRACT
\$5.95 (+S/H)

PLAIN 3 LBS. UNHOPPED

EXTRA LIGHT • LIGHT • AMBER • DARK
★ ~ EXTRA DARK • WHEAT ~ ★



BEER COMPANY
HOMEBREWING
SUPPLIES & SUNDRIES

1-800-261-2739

CALL FOR FREE COLOR CATALOG • MC • VISA • DISC • AMEX.

DEFALCO'S — SINCE 1971

Homebrew supplies. One of the country's widest selections of beer-, mead- and winemaking supplies. Try us for those hard-to-find items. 5611-Z Morningside Dr., Houston, TX 77005. Call (800) 216-BREW for a free catalog or to order.

WORTH A POSTCARD

Extensive stock of grains, hops, yeast and supplies at the right price. Free catalog. Frozen Wort, PO Box 1047 Greenfield, MA 01302-0947; (413) 773-5920.

Beer on the Web. Buy your genuine English mash kits by mail order through your P.C. See web site <http://www.dmmatters.co.uk/Blades/blades.html> These kits are not available in any shop outside the U.K.

CLASSIFIED

A Perfect Place to Buy or Sell!

For options rates and deadlines, call Linda Starck at (303) 447-0816 ext.109, or Chris Lowenstein ext.108.



The Yellow Pages for the brewing industry — designed for home brewers as well as professional brewers.

Only \$9⁹⁵

Call or write to: *Brewing Techniques*
P.O. Box 3222, Eugene, OR 97403
Visa/Mastercard accepted.

1-800-427-2993

THE NEW BREWS FROM NEW ZEALAND



ARMSTRONG AVAILABLE IN 3.75 lb. HOPPED KITS

- Lager • Pilsner Blonde
- Draught • Bitter
- Dark Ale • Canadian Ale

3.3 lb. UNHOPPED MALT

- Light • Amber • Dark

BLACK ROCK AVAILABLE IN 3.75 lb. HOPPED KITS

- Export Pilsiner • Bock
- Miner's Stout • NZ Colonial Bitter

3.3 lb. HOPPED MALT

- Dry Lager • Lager
- Mild • East India Pale Ale
- Colonial Lager • NZ Draught

3.3 lb. UNHOPPED MALT

- Light • Amber • Dark



Distributed by **RYECOR Ltd.**, Baltimore, MD (800) 799-3353
Call NOW to Order (Wholesale only) or Call (410) 668-0984
Us For Your Closest Homebrew Retailer FAX (410) 668-3953

NOW AVAILABLE AT YOUR LOCAL HOMEBREW SHOP

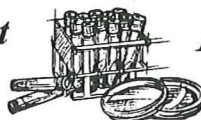
Get The New...

Brewers Resource Catalog.

It's Not Just a pretty catalog on the outside...

It's got the good stuff inside!!

Yeast Culturing



For Home Brewers.



AND Hard to find Products.

BrewTek's Techno-Stuff.

The World's Finest Beer Ingredient Kits.



IF YOU WANT TO MAKE THE BEST BEER POSSIBLE....

...We've got 48 Pages You Can't Live Without!

So Call, Write or fax the good folks at **Brewers Resource.**

409 Calle San Pablo #104 / Call 800-827-3983
Camarillo, CA 93012 / or fax: 805-445-4150

LAST DROP

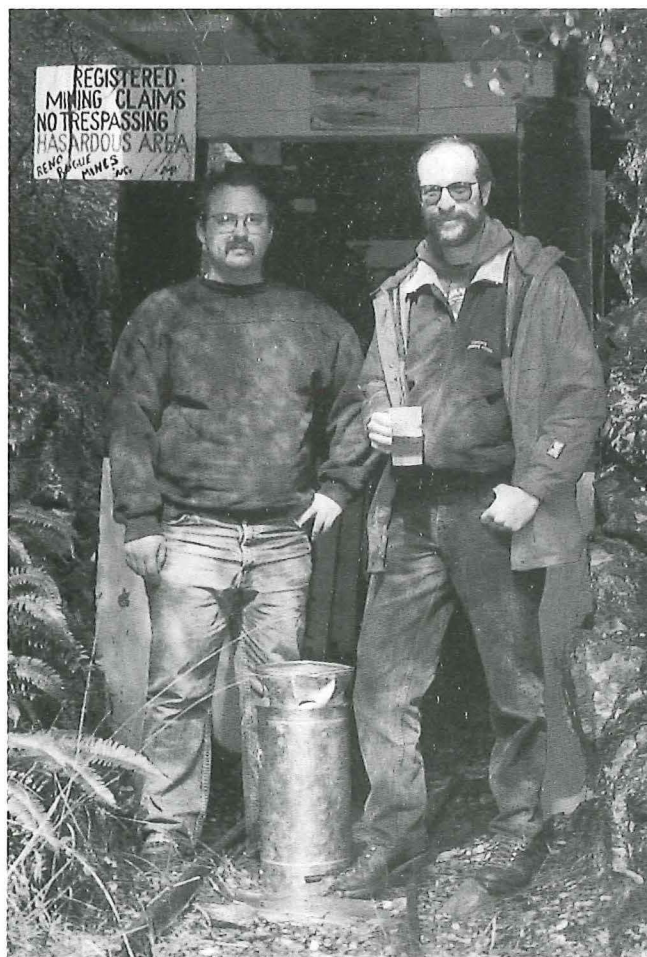
Todd Steele

Prospector Doppelbock

The Cascade Brewers Society of Eugene, Ore., wanted to brew a traditional bock to be served at its May meeting. Chris Studach suggested we brew a first-rate doppelbock emulating the German tradition of lagering in caves. Taking the idea a step further I offered the use of a gold mine near the Rogue River in which I have part ownership. Response to the idea was positive and a plan quickly evolved. Chris and I were elected to brew the doppelbock and lager it deep in the mine.

We researched a recipe looking at past homebrew batches and *extensive* taste testing of commercial examples for inspiration. We settled on a recipe we hoped would be worthy of the effort.

Brew day came and we set up our equipment on Chris' back porch. Everything was progressing without a hitch — we hit all of our mash rest temperatures during the double decoction mash — it was smooth sailing until we got to the sparging. Then we realized we didn't have a lauter tun large enough to hold 32 pounds of grain. Thinking quickly, we decided to perform a



Todd Steele and Chris Studach of the Cascade Brewers Society in Eugene, Ore., lagered their doppelbock in a gold mine near the Rogue River.

“doppel-sparge,” using two buckets modified with false bottoms. We place one six-gallon bucket of mash on cinder blocks and firewood, and gravity fed the wort through a second six-gallon bucket of mash, stacked

slightly lower than the first on cinder blocks, and then into the boiling kettle. After a 60-minute boil the hot wort was cooled with a homemade immersion chiller, transferred to carboys, aerated and then pitched with a fresh starter culture. Chris monitored the primary fermentation during the next couple of weeks until the beer was kegged.

During the three- to four-hour drive to the mine I did my best to relay to Chris the history of the now defunct mining operation. All that is left of the small community that supported the mine is an old rundown cabin where we would spend the weekend.

The next morning we prepared to haul the kegs down into the abandoned mine. After finding a suitable spot we positioned the kegs, affixed airlocks and headed back to daylight.

Three months later we went back to pick up one of the kegs; the other we decided would remain in the mine until fall when we would turn it into an eisbock. Heavy rain had flooded the mine and water was ankle deep at the entrance



and got deeper as we descended the shaft. At one point we saw water cascading down a vertical shaft. Very concerned about being able to get to the kegs without scuba gear, we waded in hoping for the best. We finally found the kegs, wet but no worse for wear. After repositioning the keg we planned to leave behind, we hauled the other to the truck.

Back home I transferred the doppelbock into a fresh keg and primed it with dry malt extract so it would be ready for our May club meeting. Then I stashed the keg in my large chest freezer set at 40 degrees F (4 degrees C). After a long wait, Bock Night was finally here! Because of the uniqueness of the project and the level of anticipation, it was one of the largest club turnouts of the year. In less than an hour the keg was dry! Everyone seemed pleased with our efforts, a rich malty doppelbock any German would be proud to drink.

Prospector Doppelbock

Ingredients for 10 gal (38 L)

- 25 lb two-row malt (11.3 kg)
- 5 1/2 lb Munich malt (2.5 kg)
- 1/2 lb 20 °L crystal malt (0.23 kg)
- 1/2 lb CaraVienne malt (0.23 kg)
- 1/2 lb CaraMunich malt (0.23 kg)
- 1/8 lb Belgian Special "B" malt (57 g)
- 2 1/2 oz Mt. Hood hops, 4.3% alpha acid (71 g) (60 min.)
- 1 oz Perle hops, 7.6% alpha acid (28 g) (60 min.)
- Wyeast Bavarian lager No. 2206 liquid yeast culture

- Original specific gravity: 1.078
- Final specific gravity: 1.032



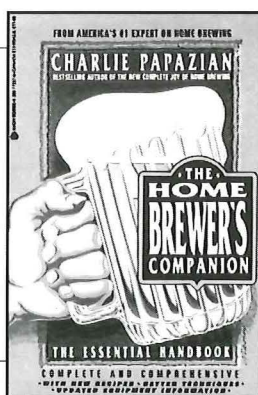
Use a double decoction mash with temperature steps at 123 degrees F (51 degrees C) for 25 minutes, 156 degrees F (69 degrees

C) for 75 minutes and mash-out at 173 degrees F (78 degrees C). Primary ferment in glass at 60 degrees F (16 degrees C) for two weeks. Secondary ferment in stainless steel in a mine at 48 degrees F (9 degrees C) for 14 weeks. Tertiary ferment in stainless steel at 40 degrees F (5 degrees C) for two weeks.

Todd Steele, a CNC machine programmer and supervisor, has been homebrewing for seven years. He has been a member of the Cascade Brewers Society for four years and has taught homebrewing at a local community college.

BREW YOUR OWN — WITH HELP FROM THE EXPERT!

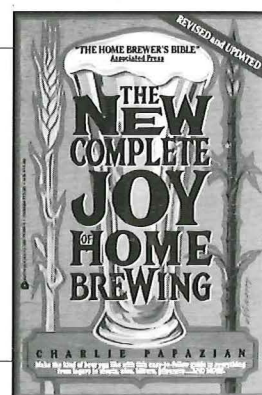
Charlie Papazian, America's leading authority on home brewing, offers readers two comprehensive, in-depth guides to brewing everything from the lightest lager to the darkest stout.



THE HOME BREWER'S COMPANION takes readers to the next level of home brewing expertise. It includes sections on:

- The effects of the water used (the amount of calcium, minerals, chlorine and salts present can completely change the taste and style of the beer being brewed)
- Hops varieties, mashes and grains
- Typical problems encountered during the brewing process and how to go about solving them
- Dozens of delicious new recipes and tips on how to create your own recipes
- Information on beer evaluation, handling and storage

THE HOME BREWER'S COMPANION
#0-380-77287-6
\$11.00 464 pages



THE NEW COMPLETE JOY OF HOME BREWING is the original home brewing bible. Perfect for the beginner, intermediate or advanced home brewer. It includes:

- Getting your home brewery together: the basics —hops, malt yeast and water
- Ten easy lessons to making your first bubbling batch of beer
- Brewing exciting world class styles of beer
- A fully illustrated guide including simple, easy-to-follow explanations of each step of the home brewing process
- And much more!

THE NEW COMPLETE JOY OF HOME BREWING
#0-380-76366-4
\$11.00 416 pages

*DEALER INQUIRIES INVITED: Room 286RB
1350 Avenue of the Americas, New York, NY 10019 Tel: 212-261-6882

AVON BOOKS
The Hearst Corporation

Above the Rest Homebrewing Supplies.....	12
Alternative Beverage	85
American Brewers Guild	60
At Home Warehouse Distribution	98
Avon Books	113
Bacchus and Barleycorn Ltd.	74
Bavaria South Inc.	45
Beer and Wine Hobby.....	73
Beverage People, The	108
Black Rock Brewing Co.	IFC
Boston Beer Co.	86
Braukunst.....	4
Brew By You	114
Brew City Supplies.....	24
Brew & Grow	67
Brew King	61 & 102
Brewers Resource.....	111
Brewers Warehouse.....	8
Brewery, The	89
Brewmaster	11
BrewStuff	29
Briess Malting Co.	12
California Concentrate Co.	6
California Glass Co.....	33
Cellar, The	60
Chateau Distributors	3
Chicago Beer Co.	3
Coopers Brewery	OBC
Crafty Fox, The	97
Crosby & Baker Ltd.....	16
Custom Brew Beer Systems.....	IBC
Cymba Inc.	34
E.Z. Cap Bottle Distributors	45
East Coast Brewing Supply	53
Edme Malt Ltd.	20
Elliott Bay Metal Fabricating.....	89
F.H. Steinbart Co.	42
Fermentap	80
Foxx Equipment Co.	101
Grape and Granary, The	67
Great Fermentations of Marin.....	27
Great Lakes Brew Supply	89
G.W. Kent Inc.	2
Heart's Home Brew Supply.....	23
Heartland Hydroponics.....	53
HomeBrewer's Software	19
HomeBrewer's Market.....	3
Homebrewing Depot	74
HopTech	34 & 94
Jet Carboy and Bottle Washer.....	4
Joby Books	94
L.D. Carlson Co.	90
Liberty Malt Supply Co.....	74
Listermann Mfg. Co.	52
Malt Products Corp.....	45
Malt Shop, The	45
Marcon Filters	107
Market Basket, The	29
McDonald Wagg Pub Supply	98
Mile High Home Brew Supply	72
Modesto Homebrew Supply	73
Morgan's	115
Munton's plc.....	1
Napa Fermentation Supplies	80
No. Yarmouth Woodworking	24
Oregon Specialty Co.	29
Paine's Malt	17
Party Pak	12
pico-Brewing Systems Inc.	73
Premier Malt Products Inc.	116
Quoin	60
Renaissance Pleasure Faire.....	67
Ryecor Ltd.	111
Sabco Save-A-Barrel	8
Siebel Institute of Technology.....	59
SkilCraft	12
TKO Software.....	89
Tucker Brewing Co., Inc.	19
Valley Brewing	60
Vineyard Home Brewers and Vintners Supply, The.....	3
Vinotheque.....	93
William's Brewing	6
WindRiver	24
Wine Hobby USA	114
Zymurtech	34

WINE HOBBY USA



We have everything you need to create your own beer and wines at a price that's easy to swallow. With 22 years in the "Home Brewing" business, we stand as one of the largest suppliers of quality products and ingredients on the east coast, offering over 200 malts, a wide variety of fresh hops, and a large selection of liquid and dry yeast.

For our free catalog, call:

1-302-998-8303 or
1-800-847-HOPS

or write:

WINE HOBBY USA

2306 West Newport Pike
Stanton, Delaware 19804



"The bitterness of poor quality is remembered long after the sweetness of low price is forgotten"

BREW BY YOU HOME BREWING SUPPLY CO.

Offering the largest selection of ingredients and equipment to the Homebrewer

- 50 Imported & Domestic Grains & Adjuncts
- Huge Selection of Yeast
- 35 Different Hops

- Beginners Equipment Kits start at \$25.95.
- Harrington 2-Row Brewers Malt 65¢ per lb. or \$25.00 for 55 lbs.
- Belgian De Wolf-Cosyns Malts 89¢ per lb.
- English Hugh Baird Malts 79¢ per lb.
- Crisp Marris-Otter Pale Malt 89¢ per lb. or \$42.50 for 55 lbs.
- Whole & Pellet Hops from 60¢ - 90¢ per oz.
- Munton & Fison Bulk Malt Extract at Excellent Prices.

(800) 9 TO BREW

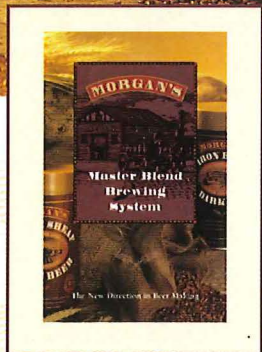
PLEASE CALL OR WRITE FOR OUR FREE CATALOGUE
2 Greycourt Ave., Chester, NY 10918

Handcraft Your Beers with Morgan's Unique Brewing System



A new tradition in brewing has arrived after centuries in the making. You can now combine all that is traditional in brewing with your own creativity.

Morgan's produces a range of concentrated specialty malts which, when used in a recipe, create any type or style of beer imaginable. For very little extra effort you can now make extraordinary beers that are truly individual with ageless style and quality. The Morgan's Master Blend Brewing System is unique and sets a new standard in beer-making. Enjoy a return to the standards of the past and a future of brewing choices!



The definitive guide to brewing with Morgan's. Available from your local stockist.

MORGAN'S

The New Tradition in Beer Making

DISTRIBUTED BY

USA LD CARLSON CO (216) 678 7733 CROSBY & BAKER LTD (508) 636 5154 F.H. STEINBART (503) 232 8793
CANADA ABC CORK CO (519) 668 6160 CANUCK BREWING PRODUCTS 1 800 661 6633

PREMIER

Reserve Gold Label®



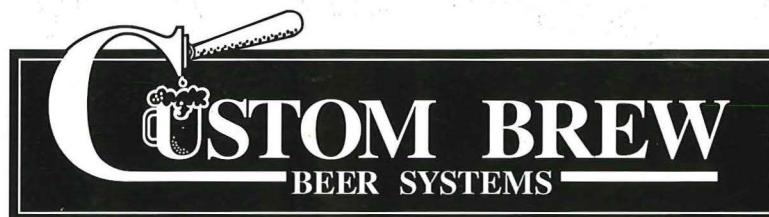
*For CONSISTENT QUALITY BEER,
try the easy all malt recipes in our booklet.*

BREW OUR:

HOPPED KITS *American Rice *Brewers Wheat *Brown Ale *Continental Lager *Mild Ale
UNHOPPED *Light *Amber *Dark *Wheat

For information or recipes please call: Premier Malt Products, Inc.
1-800-521-1057 or 1-313-822-2200

BRING HOME THE GOLD



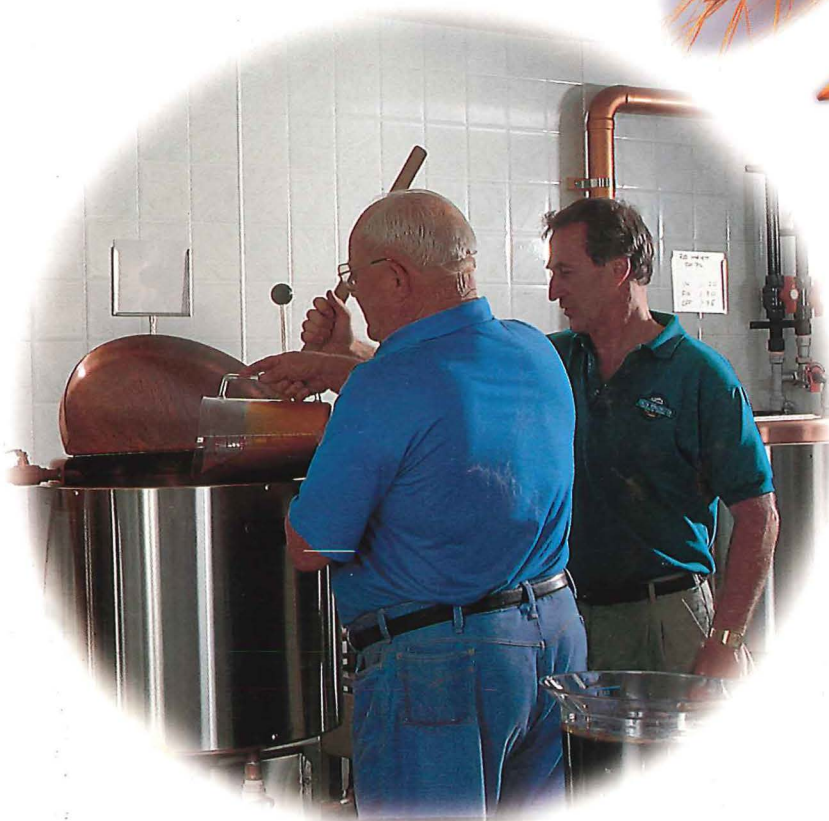
THE BREW ON-PREMISES PEOPLE



Custom Brew Beer Systems is the leading provider of advanced brew on-premises systems, supplies and service.

Contact us for assistance with:

- ▶ Site selection
- ▶ Installation
- ▶ Training
- ▶ Operations
- ▶ Raw Materials
- ▶ BOP Equipment



◀ A brew on-premises (BOP) is a place where ordinary people make extraordinary beer. A BOP is not a brewpub where someone else does the brewing. At a BOP, your customers make great beer for themselves.

It takes more than the world's best BOP equipment to make a brew on-premises work. At CBBS we provide comprehensive training and support to help ensure your success. ▶



OP began in Canada in 1987. Since that time nearly 300 brew on-premises have opened for business. This exciting, high-growth industry is now expanding to the United States. At CBBS we have developed the most advanced BOP technology available. With our systems, world-class support and quality ingredients we've helped our clients open more on-premise breweries than any other supplier in the industry. If you're an entrepreneur seeking a unique business opportunity, we can help you.

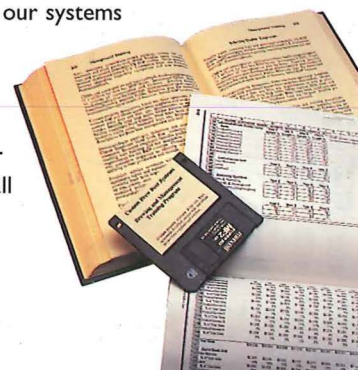
We offer a full range of advanced equipment, supplies and training designed to assist you with site selection,



installation, operations, quality assurance and on-going technical support. Each of the more than 50

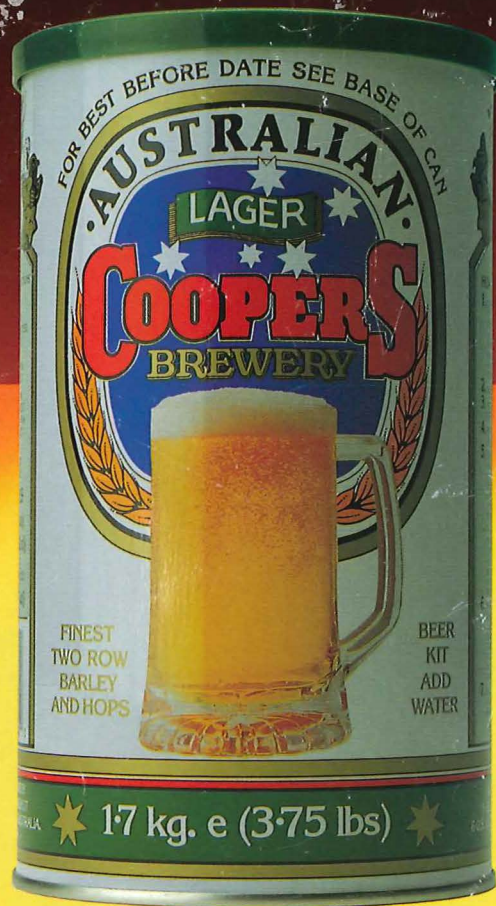
CBBS system installations is a testament to the quality, reliability and support we provide.

With your entrepreneurial ambition and our systems and support you can start your own small business where individuals brew, ferment, filter, carbonate and bottle all natural, hand crafted beer. For information about this business opportunity call Custom Brew Beer Systems at 1-800-363-4119.



Coopers Home Brew

Hop into it!



Imported for
Canada and the U.S.A. by
CONSOLIDATED BEVERAGES
1-800-368-9363 • FAX (206) 635-9364
conbev@halcyon.com <http://www.halcyon.com/conbev/coopers.htm>

Kangaroos in the Australian Outback.

Association of Brewers
American Homebrewers Association
P.O. Box 1679
Boulder, CO 80306-1679 USA

Address Correction Requested

NONPROFIT ORG.
US POSTAGE PAID
Association of
Brewers