

Vol. 18 No. 1 Spring 1995 Published by the American Homebrewers Association

ZYMURGY

FOR THE HOMEBREWER AND BEER LOVER

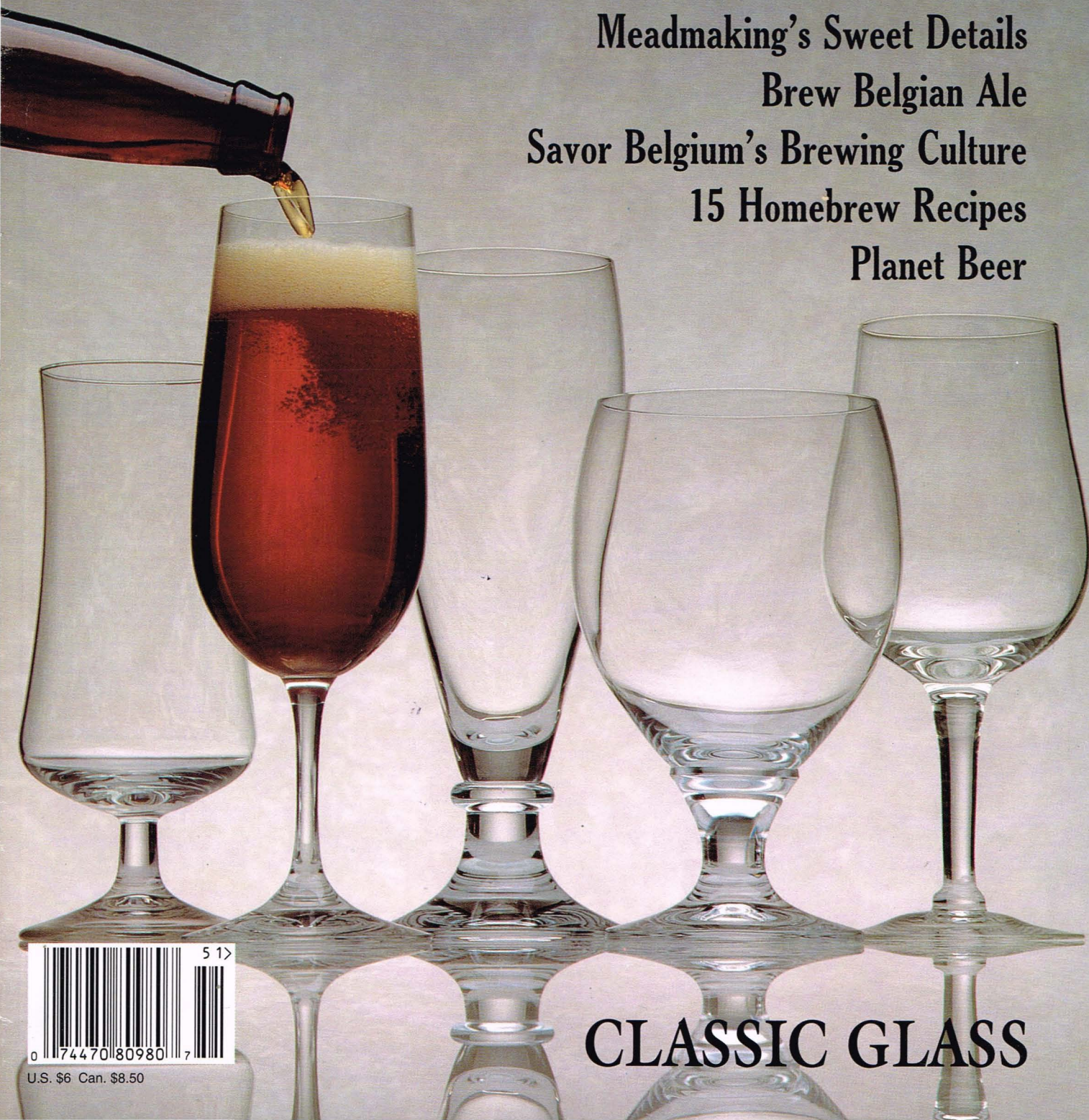
Meadmaking's Sweet Details

Brew Belgian Ale

Savor Belgium's Brewing Culture

15 Homebrew Recipes

Planet Beer



U.S. \$6 Can. \$8.50

CLASSIC GLASS

Pure New Zealand Beers

BLACK ROCK

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



EXCLUSIVE IMPORTERS, BLACKROCK BREWING COMPANY OF NORTH AMERICA
Toll Free Phone: Canada & USA 1-800-561 2039

CANADA

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

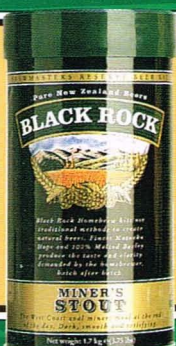
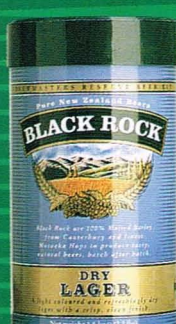
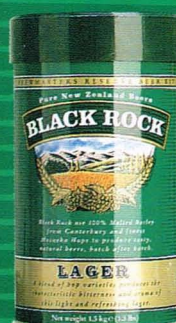
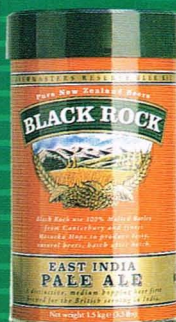
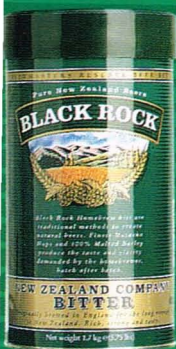
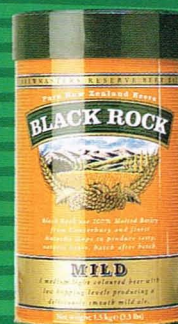
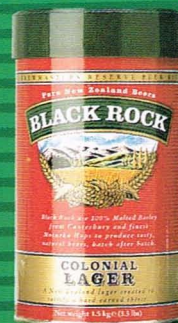
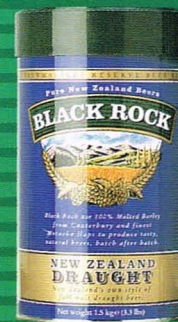
Ontario
WINEXPERT INC.
710 South Service Road,
Unit "A", Stoney Creek,
Ontario L8E5S7
Tel: 1-800-267-2016
Fax: 416-643-9161

Western Canada
BREWING INC.
1622 Kebet Way
Port Coquitlam,
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

MAYER'S CIDER
MILL INC.
3699 Five Mile Line Rd
Webster, N.Y. 14 580
Tel: 714-671-1955
Fax: 716-671-5269
Order Line: 800-543-0043



HOMEBREW ❖ SWEET ❖ HOMEBREW



Muntons

QUALITY BEERS FOR THE DISCERNING BREWER

ARMSTRONG

THE NEW BREW FROM NEW ZEALAND



Québec and Maritimes

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

Ontario

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

Western Canada

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

USA

RYECOR LTD
7542 Belair Rd
Baltimore MD 21236
Tel: 1-800-799-3353
Office: 410-668-0984
Fax: 410-668-3953

BREW THE WINNER

EDME MALT EXTRACT, THE CRITICS CHOICE,
HAS BEEN ACCLAIMED IN REVIEW AFTER
REVIEW BY AMERICAN HOME BREW EXPERTS.

EDME HAS BEEN PRODUCING MALT EXTRACT
FOR OVER 100 YEARS, USING THE FINEST
BARLEY FROM THE HEART OF THE ENGLISH
COUNTRYSIDE.

EDME MAKES A WIDE RANGE OF BEERS FOR
YOU TO BREW, SO WHETHER YOU CHOOSE A
PALE LAGER OR A DEEP STOUT, YOU CAN
BE SURE OF A WINNER EVERY TIME.



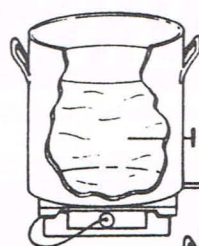


MAHOGANY COASTTM

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



GRAIN BREWERS !

10, 15 or 20 GALLON - 3 VESSEL

GRAVITY-FEED BREWING SYSTEM

- STAINLESS STEEL
- 1 & 2 VESSEL SYSTEMS ALSO AVAILABLE

System shown includes
Sparge Water Vessel,
Mash-Lauter Vessel,
and Boiling Vessel

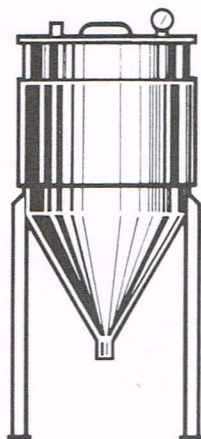
We can customize your
vessels to your
specifications



NEW!

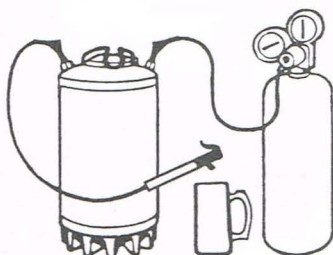
1/2 BARREL CYLINDROCONICAL FERMENTER

- Temperature Controlled
- Excellent For
- Yeast Propagation
- Test Batches



CALL 1 (206) 527-5047 For a quote

STAINLESS STEEL KEGGING SYSTEMS



3 gal. and 5 gal. kegs
available

Eliminates bottling

We sell complete systems
or parts

All parts are standard

BREWING STOVE

Portable propane stove

35,000 BTU output

12 x 12 inch cast iron grate

Rugged; well constructed

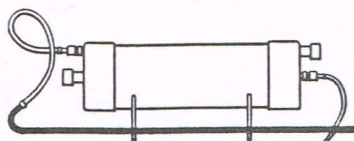
STAINLESS STEEL BREWING POTS

10, 15 and 20 gal. capacity

Heavy restaurant grade

Lid included

WORT CHILLER



High-grade copper coil
contained in waterproof shell

Wort is cooled by flowing
through copper coil while
water flows through the unit
and around the coil

Compact and efficient

Easily sterilized

Comes with all hoses and
copper siphon tube

COMPLETE BREWING SUPPLIES & EQUIPMENT - FAST MAIL ORDER SERVICE

SEND \$4.00 FOR COMPLETE CATALOG - DEDUCTIBLE FROM ORDER

BREWERS WAREHOUSE 4520 UNION BAY PL. N.E. SEATTLE, WA 98105 (206) 527-5047

Complete 30 day money-back guarantee

“The Newest, Most Innovative Processes in MicroBrewing”

GE Plastics

Made from LEXAN® polycarbonate resin, a product of GE Plastics. Chemically stable, no flavor migration, imparts no taste, lightweight, impact and shatter resistant, -20° to 270° F range. Compare this big 7.5 gallon system as an alternative to funnels, hoses, buckets and carboys. Beautifully gift boxed.

1-800-852-4263

MR. BEER PRODUCTS, INC.

Complete System with Malt.....	\$69.95	Add \$6.00 Shipping & handling
System without Malt.....	\$59.95	

LEXAN® is a registered trademark of General Electric Company

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, Phil Fleming,

Al Korzonas, Rodney Morris

Editorial Advisers—Karen Barela, Elizabeth Gold,

Charlie Papazian, James L. Spence

Art Director.....Vicki Hopewell

Graphics/Production Director.....Tim Sposato

Graphic Designers.....Sarah Chesnutt,

Wendy Rodgers

Graphics Assistant.....Melissa VanArsdale

Advertising Manager.....Linda Starck

Advertising Assistant.....Bob Stephan

Circulation Director.....Casey Koehler

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 \$29 U.S., \$34 Canadian and \$44 foreign. 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. On CompuServe contact AHA President Karen Barela at 75250.1350, AHA/BJCP Administrator James Spence at 70740.1107 and *zymurgy* Editor Dena Nishek at 73252.3571. All material ©1995, 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 EBSCO Media, Birmingham, Ala.

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



32



50



58

FEATURES

MEAD SUCCESS: INGREDIENTS, PROCESSES AND TECHNIQUES 32

DANIEL S. McCONNELL, PH.D.,
& KENNETH D. SCHRAMM

BELGIUM: A LAND OF ENDLESS RICHES 40

MARTIN LODAHL

IS BELGIUM'S BREWING CULTURE AT RISK? 46

JAN MAES

BREWING BETTER BELGIAN ALES 50

PHILLIP SEITZ

ENHANCE YOUR BEER-DRINKING PLEASURE WITH THE PROPER GLASS 58

MARK R. ANDERSON

AHA 1995 NATIONAL HOMEBREWERS CONFERENCE — PLANET BEER BETWEEN PAGES 16 & 17

DEPARTMENTS

Editorial	5
Dear <i>zymurgy</i>	7
Association News	10
Calendar	14
Brew News	17
Winners Circle	69
Dear Professor	78
New Products	83
Reviews	89
Homebrew Connection	97
Classified	103
Advertiser Index	106
Last Drop	107

COLUMNS

JACKSON ON BEER Will Euro Drinkers Have to Face a Red Barrel Threat?	21
MICHAEL JACKSON	
HOMEBREW COOKING Homebrewed Picnic Treats	25
CANDY SCHERMERHORN	
TIPS AND GADGETS Pseudo Beer Engine	29
BOB JONES	
FOR THE BEGINNER Holy Hydrometer, Batman!	65
DAVID A. WEISBERG	
WORLD OF WORDS Sure as Tootin' Pumpernickel Stout	75
CHARLIE PAPAZIAN	
BEST FROM KITS Munton & Fison Docklands Porter	85
DAN RABIN	
HOMEBREW CLUBS Not-for-Profit Status — One Club's Experience	92
CAROLINE DUNCKER	



PRICE \$23.95 S&H \$3.50 Total \$27.45

AVAILABLE FROM YOUR HOMEBREWING SUPPLIER OR DIRECT FROM
PIERRE RAJOTTE (514) 277-5456 • 5639 HUTCHISON
MONTREAL, QC, H2V 4B5

Dealers: Phone for the name of your nearest distributor

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 _____ Lori Tullberg-Kelly
 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 or FAX (303) 447-2825.

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!

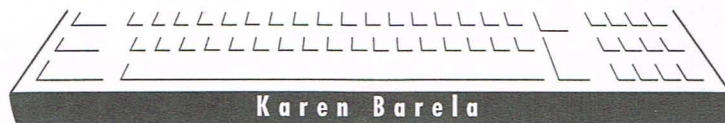
The homebrewing community is growing, so take this opportunity to get involved with other homebrewers in your area.
Your Homebrew Will Thank You!

To find the nearest AHA registered homebrew club in your area, contact the AHA, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816, FAX (303) 447-2825.



zym18

EDITORIAL



Liquid Elvis

Some friends and I brewed a Doppelbock from Charlie Papazian's recipe in "World of Worts," *zymurgy* Spring 1989 (Vol. 12, No. 1). We were aiming for a beer, according to Charlie's description, with a strong malt character but not too sweet, something really malty and satisfying with generous bittering hops for good balance. We knew it should be high in alcohol, and it was — about 1.100 original gravity. The recipe called for a true lager yeast. But you know, being homebrewers we wanted to experiment. So we split the wort and pitched one batch with a lager yeast cultured from a homebrew made by a homebrewer we know. (A famous one — wink, wink.) We sort of by accident ended up doing a *tertiary* fermentation in the keg. We were going to bottle a few bottles to enter in a competition, but when we took a gravity reading it was still too high — we were not looking for exploding bottles. So we simply kegged it and placed it in one of the refrigerators here at the AHA office to finish. (There are 35 employees at the AOB and four refrigerators. It's a true sign of what business we are in — everyone has to work their lunches in around the kegs and bottles. This *is* a fun place to work!) I don't know yet what this brew will taste like, but I like the anticipation of waiting. It's a homebrew thing.

We fermented the other half batch with a Belgian ale yeast and it finished at around 1.026. We were hoping for some nice fruity characters, a few of the "good" phenols and esters to give the Doppelbock some unique flavors. You know, homebrew — the kind of beer you just can't buy. What we ended up with is a beer that is a beautiful deep reddish brown,

very clean and clear, full-bodied with a nice hop dryness through the middle, but perhaps a tiny bit too sweet (we hope this will mellow some with age). It's a bit undercarbonated and has a very noticeable alcohol content. Someone dubbed it "headache homebrew." I like to think of it more as an after-dinner beer, like a nice port or cognac. The Belgian flavors we were after didn't quite come through as strong as we would have liked, but there is a subtle character that definitely makes it unique and pulls it out of any classic Doppelbock category.

What to do with a beer like this? We thought it was unique and wondered what judges would think, so we named it Liquid Elvis and entered it into the specialty beer category of a large regional AHA Sanctioned Competition. I don't know the final scores yet, but I like the anticipation of waiting. I look forward to reading the opinions of judges who judged my beer not knowing who the brewers were. I wonder if they will pick up on the subtle esters and phenols? I hope they comment on the high alcohol content and gorgeous color. I expect they will tell me it's undercarbonated. I expect to learn a lot from their comments.

I attended this competition and judged two categories, traditional porters and East Coast porters. I concentrated on giving good, worthwhile feedback to the brewers. Judging is hard — I'm not kidding. If you haven't tried it, I highly recommend the experience, particularly if you have ever entered a competition, which I also highly recommend. You'll gain an appreciation for how much effort the judges give your beer. I'm still working to improve my judging skills. It takes time and a lot of experience to be a great judge.



I had a little thrill because at this competition the beer I chose as the first-place East Coast porter went on to win best of show. Wow. It was strong affirmation that I am on the right track as a judge. It was also clear that the beer I had brewed with my friends and entered did not meet the standards that this winning beer did. Humbling and exhilarating all at the same time.

I still wish we had placed with our Liquid Elvis. I wish I had Liquid Elvis on the wall with a ribbon around his neck. But it doesn't really matter. I brewed it with friends, we had a good time, we made a good beer, we have something to enjoy and comfort us on a cool evening.

I'm a homebrewer — and proud of it. In the end, it doesn't really matter what the judges think of my homebrew. I know it was a good effort. I can taste the results. And because it is my homebrew, when I sit and enjoy a glass, it's the best damn beer I've ever had.

CASE LOTS:

IREKS \$13.95/CAN (4/CASE)
COOPERS \$9.00/CAN (6/CASE)
JOHN BULL \$8.25/CAN (6/CASE)
N. WESTERN \$4.90/BAG (12/CASE)

— BELGIAN GRAIN MALTS —
64 CENTS/LB. & UP
DRAFT SYSTEMS \$136.25
USED KEGS \$21.75
— STARTER KITS \$49.95 & UP —

Call for price list!
BARE BONES
BREWER'S SUPPLY
1-800-413-2739



P.O. Box 98

Eagle, WI 53119-0098



Free Grain Crushing

We Cater to the
Novice and Advanced Brewer

Beer and Wine Supplies and Equipment

- Malts
- Hops
- Wine Concentrates
- Large Selection
- Knowledgeable Staff

The Grape and Granary
1302 E. Tallmadge Ave.
Akron, Ohio 44310
Free Catalog
(216) 633-7223
1-800-695-9870

Brew Master

The Complete Home Brewer's Software Aid

Recipe Creation:

Calculate Color, Bitterness, and Original Gravity and Match with many styles of beer.

Inventory Management:

Track Grain, Hops, and Other Ingredients. Generates Shopping Lists for your recipes.

Batch Logging:

Tracks Gravity and Compensates for Temperature. Graph Temperature Curves for Mash and Fermentation.

And Much More!

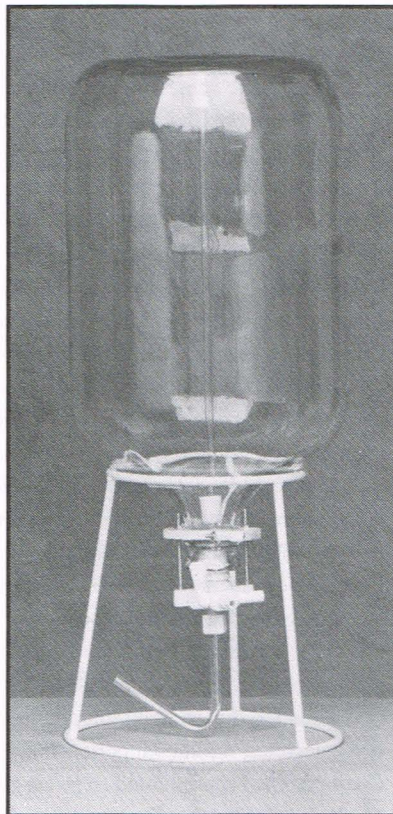
**Only
\$39**

plus \$3 shipping and
handling

Abita Software Development
P.O. Box 67402
Scotts Valley, CA 95067
CA Residents include
7 1/4% Sales Tax

For Microsoft Windows

Fermentap[®]



- RACKS BEER WITHOUT SIPHONING.
- HARVEST YEAST SEDIMENT.
- ELIMINATE OXIDATION.
- LESS WASTED BEER.

*Includes valve assembly
and stand
(fits 5 and 6 1/2 gallon
glass carboys).*

Dealer inquiries welcome.

\$29.95

+\$4.00 shipping & handling

*Visa & Mastercard gladly
accepted or send check or
money order to:*

Fermentap[®] ■ P.O. Box 30175

STOCKTON, CALIFORNIA 95213-0175

1-800-942-2750 ■ Mon. - Fri. ■ 9:00 - 6:00 pst

By inverting the glass carboy and installing the Fermentap[®] valve the same procedures of sampling, yeast harvesting, and transferring of beer can be copied at home. The conical shaped neck concentrates sediment at the lowest point facilitating separation and minimizing waste.

patent pending

DEAR ZYMURGY

Our Readers

Corrections

The Door County White Beer recipe on page 87 of *zymurgy* Special Issue 1994 (Vol. 17, No. 4) should have also called for 1 pound of oats.

The mash temperature in the Bière de Garde recipe on page 14 of the same issue should be 156 to 157 degrees F (69 degrees C).

We Keep You Brewing

Dear *zymurgy*,

Just a quick note to say thanks for the best issue yet — 1994 Special Issue (Vol. 17, No. 4). It's incredibly informative and innovative both historically and technically. (And, of course, I enjoyed the global point of view.) Keep them coming! I can't wait to try out the variety you've presented me with. I am still contemplating a batch of garlic beer to boot. We'll see.

Sincerely,
Edward T. Schmid
Stanwood, Washington

Three Cheers

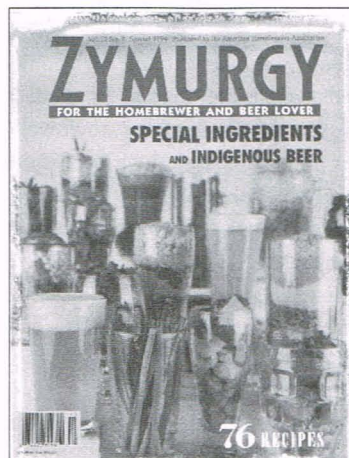
Dear *zymurgy*,

Here's the feedback on the plastic bag — I love it! I love not having to peel off the stupid paper cover, which never came off cleanly. I also like the catalog as a separate

entity. Good move. Three cheers and another round for the cover shot by Zachary Epps — very nice, use him some more. The little logos on the edge of the pages are cute. I like the 1994 Special Issue (Vol. 17, No. 4). Keep up the good work.

Bob Carlson
Salem, Oregon

Special Issue Inspires



Dear *zymurgy*

As you know, I'm not a brewer. When I joined the U.S. Brewers Association in 1962, I was specifically instructed not to try to become a brewmaster but to concentrate on the economic, social and political issues that impacted the industry. With some pride, I can say I did pretty well, both then and now.

With that as preface, I'm writing about the *zymurgy* Special Issue 1994 (Vol. 17, No. 4). Normally, I keep *zymurgy* for browsing after reading the *Congres-*

sional Quarterly, the business press and other brewing journals. Like a good beer, *zymurgy* needs to be savored, uninterrupted by telephone calls and other pressing matters.

The Special Issue is fascinating and informative. I was impressed by Charlie Papazian's "Let Yourself Fly" editorial. I found it inspiring, particularly:

“This 1994 Special Issue of *zymurgy* is about visiting the human spirit that expresses itself as beer. It is a spirit that embraces the world. Let yourself partake of the freedom to wrap yourself in your own homebrewed version of German-style Oktoberfest or Ethiopian t'ella knowing you have unbounded brew freedom.

“It's all about freedom to observe and consider the *real* world of beer. It's not simply about scientific and brewing techniques, ingredients and processes or only Western traditions but about world people, cultures, tradition, mysticism, ingredients, processes, feelings, experiences and how the human spirit has combined all of these to manifest itself as unique expressions — beer in all its languages.”

Keep up the good work.

Cordially,
Henry B. King
Executive Director,
Brewers' Association of America
Belmar, New Jersey

Competition How-tos



Dear *zymurgy*,

Our club, the Foam Blowers of Indiana, along with the Bull and Stump Brew Club, recently organized the AHA 1994 Best of Fest Club-Only Competition. I thought I'd pass along a few "lessons learned" to clubs contemplating such an endeavor and to clubs that submit entries.

(1) Make sure you have adequate help to unpack and log entries. We had 42 boxes to unpack, which took two people about eight hours.

(2) Boxes from entrants come in all shapes and sizes. Make sure you have a big enough refrigerated space. Fortunately, our receiving point was a microbrewery with a big walk-in cooler.

(3) Get more judges committed than you think you'll need. We had six BJCP judges plus apprentices. Fortunately, everybody showed up and things went smoothly. Ten BJCP judges would have been better. We would have finished in about half the time.

(4) This was a great opportunity for our club members to gain experience by being apprentice judges. BJCP judges are excellent teachers.

If you're shipping beer to a competition:

(5) The entry deadline is the date the entries are to be received, not the last day you can ship. We had 12 entries (28 percent) come in after the deadline, but we accepted them anyway so everyone got a fair shake at getting their beer evaluated. Ship your beer in time to be received by the deadline. We had to make a couple of extra trips to the receiving point to pick up late arrivals.

(6) Pack your entries well. The best boxes are those that Beers Across America and other beer-of-the-month clubs use. Bubble wrap around each bottle is good. Styrofoam peanuts and other loose packing are a real hassle when opening boxes. They fly everywhere.

(7) Nearly all our damaged entries were boxes that came via the U.S. Postal Service. Not only is it illegal to ship beer this way, the U.S. Postal Service doesn't seem to be too gentle in handling parcels. The best shipping choices are Federal Express or United Parcel Service.

(8) Black out preprinted bottle caps *completely* with an indelible marker. We blacked them out for you this time.

(9) Double check that you've enclosed all the necessary paper work and entry fees before you seal the box.

(10) If you want your box shipped back, enclose a few bucks for shipping costs. Otherwise, we give them to people locally for shipping their beer, or send them to the recycler.

Special kudos go to the entrants who not only used a BAA shipping box, but enclosed an extra bottle or two for us to drink!

Finally, I'd like to thank our sponsors, the Indianapolis Brewing Co., for use of their address as a receiving point, their walk-in cooler for storage and their dumpster for trash. Also, thanks to Broad Ripple Brewing Co. for allowing us use of their restaurant for the judging venue.

Sincerely,
Paul Edwards,
Foam Blowers of Indiana (FBI)
"We tap kegs, not phones"
Indianapolis, Indiana

Helpful information like this is available in the AHA's Sanctioned Competition Program guidelines sent with each SCP application. —Ed.

Like a Good Neighbor

Dear *zymurgy*,

I am writing this letter to applaud the professionalism and courtesy shown to me by a prominent member of the brewing community. Here's the story.

After reading *Belgian Ale* (Brewers Publications, 1992) from the Classic Beer Style Series, I decided to brew a recipe titled "Santa Claus' Magic Potion." I have a real interest in high-gravity brews and this one's a monster. I easily gathered all the ingredients except one — a spice called sweet gale. My search started at

the local homebrew store, went on to grocery stores and then to spice suppliers with no luck. What was worse, no one had even heard of sweet gale. Considering that I had already made a starter for my yeast, I had to either find sweet gale quick or brew without it.

As a last resort I found a FAX number for Pierre Rajotte, author of *Belgian Ale*. Mr. Rajotte telephoned me two hours after I FAXed him and informed me of a U.S. company that he had shipped a quantity of sweet gale to recently. He even offered to get me some himself if I was unsuccessful with the supplier. The supplier, F.H. Steinbart, shipped the sweet gale out to me and I was able to brew with no complications.

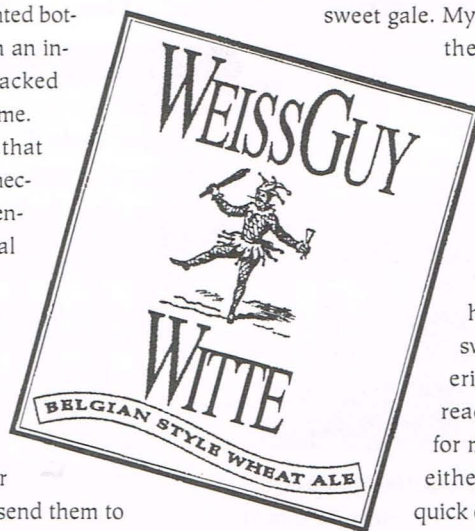
Mr. Rajotte responded to the needs of a total stranger and fellow brewer with a sense of genuine concern that reminds me just how nice it is to be a part of the brewing community. I hope to hoist a pint or two of this special brew with Mr. Rajotte someday.

Cheers,
Ray Ballard
Nashport, Ohio

Gravity Grievance

Dear *zymurgy*,

While looking at the "Winners Circle" from *zymurgy* Special Issue 1994 (Vol. 17, No. 4) after this year's National Homebrew Competition, I was shocked to find the winning beer in the Scottish ale category had a



starting gravity more than twice that of the category guideline. It was entered as a Scottish heavy (category 8b), which should have a gravity in the 1.035 to 1.040 range. According to the recipe, its actual original gravity was 1.086! It looks as if it would have been more appropriately entered as a strong Scotch ale (category 10b), with an original gravity in the 1.072 to 1.085 range.

As a Certified BJCP judge, I am shocked and disappointed that none of the judges in either round apparently found this beer out of style. To quote one of the judges, "Recipe formulation, alcohol, sweetness, balance all fine." How can the alcohol be "fine" at about 7.5 percent, when it should be 3.5 to 4 percent? How can the sweetness be "fine" with a final gravity of 1.030? Once you take into account specific gravity depression from the alcohol, this beer has as much sugar in it after fermentation as it should have had before fermentation.

As a judge who sat on the Scottish ale flight at the Chicago first round, I know that there were some very good Scottish heavy ales in that round. Although I don't know the numbers for those beers, I am confident that they were much closer to the style definition than the winner can possibly be.

As a brewer who endeavors to make these lighter styles true to style, I know that it is not necessary to "pump up" the gravity to get good flavor. I am upset that, had I entered this category, my efforts would have been in vain, as the judges chose the biggest beer in the category.

As a contest entrant I try to make sure my beers are at least close to the style in which I'm entering them. I am surprised that the brewer would enter a beer that is so far out of the style definition, especially when there is a style that would fit it much better.

Finally, I don't want anybody to get the impression that I am implying that the beer was not a good beer. I am just saying that it is not a Scottish heavy. I hope that the judges who placed it first will consider some "remedial" beer tasting before their next competition so they don't make the same mistake again.

Sincerely,
Spencer W. Thomas
Ann Arbor, Michigan



BREW YOUR OWN GROW YOUR OWN

**GRANDPA ALWAYS TOLD YOU
THAT HOMEGROWN
IS THE BEST.
NOT ONLY IS
HOMEGROWN
THE BEST,
BUT SO IS
HOMEBREWED
BEER. NOW
YOU CAN
HAVE BOTH
YEAR-ROUND
WITH OUR
HELP.**



**HID LIGHTS. ORGANICS. HYDROPONICS,
BEER BREWING SUPPLIES**

RETAIL OUTLET STORES:

CHICAGO SUBURBAN AREA:

CHICAGO INDOOR GARDEN SUPPLY
297 N. BARRINGTON RD.
STREAMWOOD, IL 60107
(708) 885-8282

DETROIT AREA:

BREW & GROW
33523 W. 8 MILE RD., #F5
LIVONIA, MI 48152
(313) 442-7939

MILWAUKEE AREA:

BREW & GROW
19555 W. BLUEMOUND RD., #36
WAUKESHA, WI 53186
(414) 789-0555

MINNEAPOLIS AREA:

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

CITY OF CHICAGO:

CHICAGO INDOOR GARDEN SUPPLY
CALL FOR DETAILS
(800) 444-2837

MAIL ORDER SALES:

ALTERNATIVE GARDEN SUPPLY
CALL NOW FOR A FREE CATALOG
(800) 444-2837

SPECIAL DISCOUNT
FOR HOME BREW CLUB MEMBERS
CALL FOR DETAILS

ASSOCIATION NEWS

Karen Barela

zymurgy Update



We hope you've been enjoying the series of articles from the AHA Research Department. This is a new membership service designed to provide original homebrewing research with results published in *zymurgy*. The debut of the series appeared in *zymurgy* Fall 1994 (Vol. 17, No. 3) featuring a malt mill analysis and report. We featured a malt extract analysis in *zymurgy* Winter 1994 (Vol. 17, No. 5) and in this issue we are proud to bring you the mead and honey experiments completed for the AHA 1994 National Homebrewers Conference. We are looking for proposals, ideas and topics for future research projects and teams of homebrew researchers to carry out the projects. Nothing is too weird, outrageous or off-the-wall for us to consider. Let your imagination soar and tell us what you've always wondered about. We're also interested in hearing your ideas about any of our other columns. Contact Dena Nishek, *zymurgy* editor, at the AHA.

Also, take note of the additional listings on the calendar pages. We've added the dates

the next issues of *zymurgy* are scheduled to mail so you can anticipate when your next issue will arrive. *zymurgy* Summer 1995 (Vol. 18, No. 2) is scheduled to mail April 21, 1994. Please allow four to six weeks for delivery.

Planet Beers



Never before has there been a chance to sample the best homebrews on this planet, brewed by the best homebrewers in the world, all in one room, all at one time, all kegged, all "planet" beers. We've invited the gold, silver and bronze medalists from the AHA 1994 National Homebrew Competition to brew a batch of "planet" beer (brewer's choice), keg it and send it to **Planet Beer**, the AHA 1995 National Homebrewers Conference in Baltimore, Md., June 14 through 17. The beer will be showcased during Saturday's all-day event, the Jambeery. Recipes will be provided by these award-winning brewers so you can brew your own "planet" beers after the Conference. "Planet" beers is just one of the reasons to make sure you attend this year's Conference. For details about the 100 other out-of-this-world reasons to attend, see the Conference insert in this issue.



The 17th AHA National Homebrew Competition is just around the corner with entries due April 3 through 14. First-round judging takes place April 28 through 30 and May 5 through 7. Complete details are available in the AHA 1995 National Homebrew Competition Rules and Regulations brochure in *zymurgy* Winter Issue 1994 (Vol. 17, No. 5). We thought you might be interested in knowing how we come up with the beer style descriptions and guidelines.

To define beer styles we use sources from the commercial brewing industry including *Brauindustrie*, an international brewing industry magazine; beer analyses from various resources; consultations with beer industry experts; and Michael Jackson's *The New World Guide to Beer* (Running Press, 1988). We also consider the effects the number of categories and subcategories will have on the organization of the world's largest homebrew competition. One source or opinion is not enough to add or change a style definition — we try to consider as many sources of information as we can.

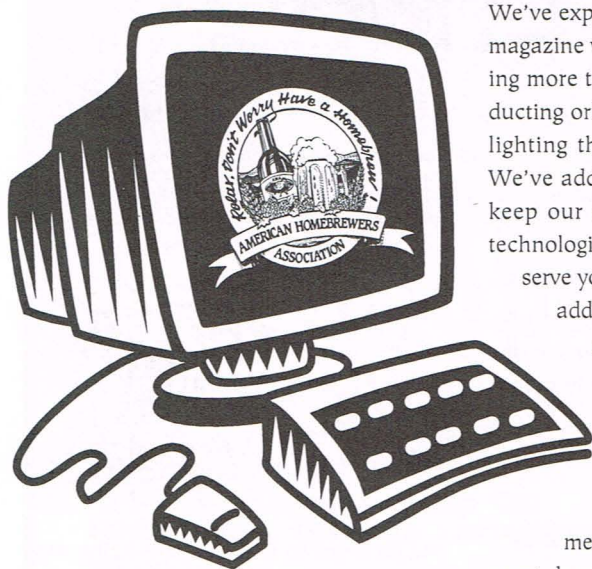
A recognized beer style should have historical significance. Each beer style in the guidelines is part of the tradition of beer formulation and brewing technology through the ages. Sometimes current commercial examples do not fit well into the historical record, and instead represent a modern reincarnation of the style or a new style altogether. A beer style must be considered a

legitimate, renowned and valuable preservation of the world's brewing traditions. The more a beer style has withstood the test of time, the more likely it is to be included in the AHA style guidelines.

The availability of commercial examples play a large role in a beer style making the list, and analyses of commercial beers play a large role in defining a style. It is important to remember, however, that not every historical or commercial beer style can be included, nor is every commercial beer representative of the historical tradition. (The fact that the brewery labels a brand a particular style does not mean it is a classic representative of that style.) Our goal is to keep things as simple as possible for the brewers and judges, and to maintain a good cross-section of the world's brewing traditions.

If you have suggestions for adding or changing a style guideline, write to us. Make sure to include your reasons and documentation for why you think the style should be included or a description changed. We adjust the style guidelines a little every year as new information becomes available.

On-Line Access



The Association of Brewers' new computer system (which we've been installing and telling you about for the past year) has provided us with access to Internet e-mail. AHA free information is available from

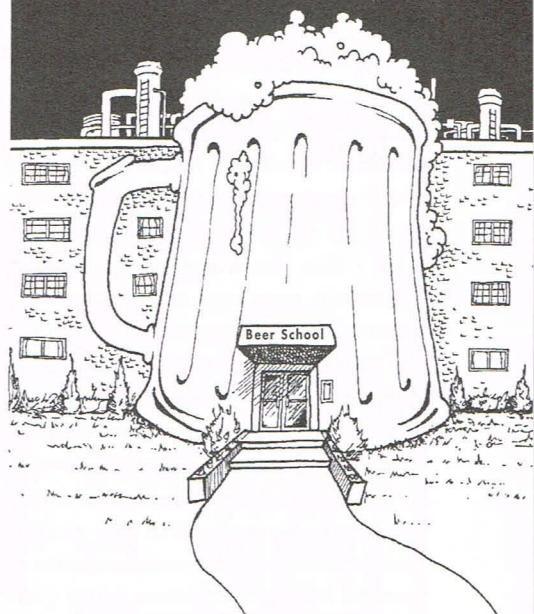
info@aob.org, and we hope to have order processing on-line soon.

Also, several AHA and Brewers Publications staff members are available on CompuServe. For *zymurgy* editorial comments and/or proposals, contact Dena Nishek, *zymurgy* editor, at 73252,3571. For information on the BJCP, Sanctioned Competition Program or AHA National Homebrew Competition contact James Spence, AHA administrator, at 70740,1107. For information on the AHA National Homebrewers Conference or for general AHA comments contact Karen Barela, AHA president, at 75250,1350. For information about Brewers Publications and/or book proposals contact Elizabeth Gold, Brewers Publications publisher, at 75250,1351.

New AHA Membership Rates

On March 1, 1996, the annual AHA membership dues will increase from \$29 to \$33 per year. The last membership increase was June 1, 1993. We hope you'll agree that there have been significant improvements in the quality of our services, all supported by your membership dollars. We've expanded and improved *zymurgy* magazine with our members in mind, giving more technical information and conducting original research while still highlighting the fun of our favorite hobby. We've added a new computer system to keep our customer service department technologically advanced, allowing us to serve you faster and better. We've hired additional staff members to help us stay at the forefront of the homebrewing hobby and we're dedicated to continuing to serve you through all of our programs. Our commitment to you, our members, and to our mission statement, has never been stronger. We are here to provide you with the best, most current and cutting-edge information on beer and brewing.

Anyone wishing to extend their membership at the current rate must do so before March 1, 1996.



Beer School

The AHA introduced a new membership service during the Great American Beer Festival® Members-Only Tasting. It is a service that any beer festival or tasting can also adapt to fit a local beer event. We invited eight BJCP judges to act as beer tasting tour guides for groups of 10 tasters. Sign-up sheets provided a brief biography of the tour guide/BJCP judge, including what the judge planned to taste on his or her tour. The AHA provided a simplified score sheet and pencils to allow the student tasters to take notes along the way. Beer School was a huge success at this inaugural event and was a great way to teach, and learn, a few tasting tips in a festival atmosphere. Each tour lasted about an hour and a half with both the tour guides and students learning a little bit more about beer tasting and terminology, and tasting beers they might not have tried on their own. For more information, contact the AHA.

News From Brewers Publications

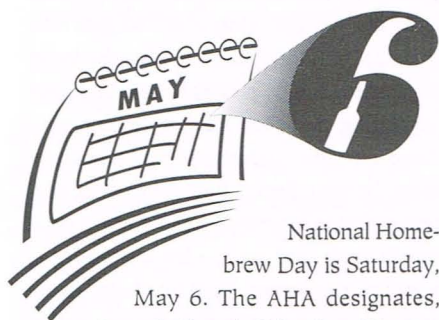


Brewers Publications, one of four divisions of the Association of Brewers, has several new titles in the works. *The Art of Cidermaking*, by Paul Correnty, is scheduled to be published in late spring. *The New Brewing Lager Beer*, by Greg Noonan, is due out this fall. It will

be completely updated and contain 40 pages of new information. Also this fall, look for the 10th book in the Classic Beer Style Series, *Stout* by Michael J. Lewis, Ph.D. The 11th book, *American Lager* by Finn Knudsen, is due in early 1996.

Any clubs, shops or other organizations interested in event ideas and potential fund raisers may wish to consider hosting an author to speak at an event. Book signings along with beer dinners and cooking demonstrations are a great way to bring interested brewers to your events. Contact Brewers Publications for more information about author events, and to pass on your ideas, queries and comments on current or potential Brewers Publications books. Contact Elizabeth Gold, Brewers Publications publisher, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816, Ext. 124, FAX (303) 447-2825, CompuServe 75250,1351.

Celebrate Homebrewing – May 6!



National Homebrew Day is Saturday, May 6. The AHA designates, through Chase's Calendar of Events, the first Saturday in May to honor homebrewers and the art and science of homebrewing across the country. The AHA has prepared press releases and other packets of information hoping to capture the media's attention about our homebrewing hobby. Interested homebrew supply shops, brewpubs, microbreweries and clubs should contact the AHA for more information on how to participate.

We'd love to hear from you about how you plan to celebrate National Homebrew Day. Judging at the first round of the AHA National Homebrew Competition? Inviting your neighbors over to help them brew their first batch? Taking a bottle of homebrew to your office and sharing a taste with virgin

Pumpnickel Stout

Besides the tangible benefits of AHA membership – such as *zymurgy*, the Members-Only Tasting at the GABFSM, the AHA Sanctioned Competition Program and our free information services, just to name a few, we also provide "intangible benefits" of membership. These include but are not limited to:

- compiling statistics on the homebrewing industry and providing this information to the media, which results in greater exposure for the entire homebrewing and craft-brewing industry;
- maintaining links with clubs, shops, wholesalers, manufacturers and retailers to keep our fingers on the pulse of the homebrewing hobby and to keep the industry united and supportive;
- providing the impetus for the community of active homebrewers in this country and around the world to have a voice and a place to exchange information about homebrewing;
- to a limited extent, writing letters, making phone calls and supporting positive positions to ensure that state and local government agencies and economies understand the importance of the freedom to homebrew. The Association of Brewers is a 501(c)(3) non-profit association. The IRS strictly limits the amounts and types of lobbying efforts permitted by 501(c)(3) organizations. Therefore, we must be cautious to stay within the parameters set by the IRS.

Karen Barela, on behalf of the AHA and its membership, worked with the vice president of public relations and the advertising department for Bud Light at Anheuser-Busch and was able to remove what many AHA members believed were derogatory radio commercials about homebrewing. (For another point of view, see Charlie's "World of Worts" column in this issue.)

While it is difficult to assign a specific dollar value to these "intangible" benefits, their importance should not be underestimated. Your AHA membership provides strong support to the homebrewing hobby.

homebrew drinkers? Shopping at your local homebrew supply shop? Calling your local newspaper's features editor and asking them to write a story on homebrewing? Brewing your soon-to-be favorite batch? Let us know!

We're Here For You

Let us know how we're doing. The AHA, as a membership organization, relies on your feedback, comments and input to help us shape the AHA to meet your homebrewing hobby needs. Write, FAX, phone or stop by the office if you are in Boulder, Colo. Send



media items to Lori Tullberg-Kelly, AOB marketing director; *zymurgy* proposals to Dena Nishek, *zymurgy* editor; and send AHA comments to Karen Barela, AHA president, at the American Homebrewers Association, PO Box 1679, Boulder, CO 80306-1679; 736 Pearl St., Boulder, CO 80302; (303) 447-0816, FAX (303) 447-2825. ☺

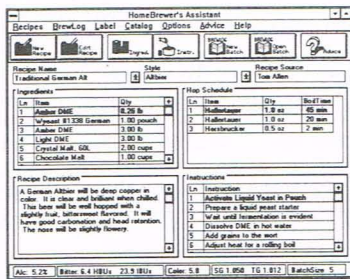
HomeBrewer's Assistant

A multimedia tool for home brewers

HomeBrewer's Assistant is the perfect tool for the new and experienced home brewer. It combines recipe formulation and batch logging with a multimedia reference guide that actually illustrates the steps to great home brewing.

Includes:

- ✓ Recipe Formulation
- ✓ Batch Logging
- ✓ Multimedia Reference Guide
- ✓ WYSIWYG Label Designer with clipart
- ✓ Brewshop listings on disk for easy pricing and ordering



Recipes in HomeBrewer's Assistant provide all the details you need to make a great batch of beer.

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

HomeBrewer's Software
1-800-BRWSOFT

(1-800-279-7638)
e-mail: brewsoft@cybernetics.net

Order Today!
Only \$29⁹⁵
plus \$3 S&H

Requires MS-Windows™ 3.1

Designer Shirts and Glassware!



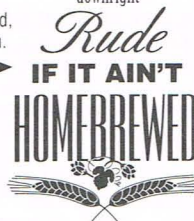
"HAND MADE" - Red, yellow, & green on black background.



BOTTLE CAPS - Bag of 200 \$3.95+1.00 S+H

IT'S
downright

"RUDE" - Red, yellow, green.



Specialty glassware also available. Call for free product sheet.

1-800-55BREW

Send check or money order to:

Brew Dudes NW

15127 NE 24th, Suite 260
Redmond, WA 98052-5547

T-Shirts - (White, 100% cotton)
\$14.50 + 2.00 S+H

Set of 4 pint glasses - \$16.50 + 3.50 S+H

Please specify logo design and shirt size (L or XL) when ordering.

WA state residents add 8.2% tax

All designs © 1994 Greg Welsh Design

Please allow 2-3 weeks for delivery

The Pacific Northwest's Finest Raw Hops

Gathering the Hoppe



• Cascade • Centennial • Chinook • Hallertau • Mt Hood
• Northern Brewer • Perle • Saaz • Tettnanger • Willamette
• Pride Of Ringwood (Certified Organic)

**Whole Hops - Hop Oil
Rhizomes (March thru May)**

Freshops is the world's smallest hop grower & broker. Specializing in partial bale quantities of whole raw hop cones. We select the cream of the crop, alpha analyze & cold store each lot until shipped. Serving homebrewers, shops and microbreweries since 1983. Write or call to receive a price list or the name of your closest dealer.

1 (503) 929-2736

36180 Kings Valley Hwy., Philomath, OR 97370

Tired of cleaning bottles?

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

Do you have a yeast taste in your beer?

Call Now to Order 1-800-898-MALT
Ask for Free Catalog of Quality, Low Priced Products



Complete Kegging Kit \$139.95

New 5 lb. CO2 Tank, Reg., Air Line, Beer Line, Tap, Connectors, Reconditioned 5 Gal. Pop Keg.

Reconditioned Pop Kegs \$29.95

Cleaned, Boots R&R if needed, Seals Checked, Pressure Checked, Dents Removed, Buffed Shiny.

CALENDAR



1995

FEBRUARY

- 18 Febfest '95, AHA SCP, Lake Bluff, Ill. Entries due Feb. 17. Contact Steve Howard at (708) 234-4150.
- 18 Commander Saaz's Interplanetary Homebrew Blastoff, AHA SCP, Cape Canaveral, Fla. Entries due Feb. 14. Contact Carl Saxer at (407) 649-6717.
- 19 BJCP Exam, Lenexa, Kan. Contact Alberta Rager at (913) 894-9131.
- 20 Third Annual President's Day Homebrew Competition, AHA SCP, Philadelphia, Pa. Entries due Feb. 13. Contact Tom Peters at (215) 735-8475.
- 27 America's Finest City Homebrew Competition, AHA SCP, San Diego, Calif. Entries due Feb. 27. Contact Skip Virgilio at (619) 566-7061.

MARCH

- 4 Fourth Annual Central Illinois Homebrew Competition, AHA SCP, Normal, Ill. Entries due Feb. 18. Contact Tony McCauley at (309) 664-6284.
- 11 Second Annual Queen of Beer Womens Competition, AHA SCP, Placerville, Calif. Entries due Feb. 24. March 3. Contact Elizabeth Zangari at (916) 626-7733.
- 11 America's Finest City Homebrew Competition, AHA SCP, San Diego, Calif. Entries due March 8. Contact Skip Virgilio at (619) 566-7061.
- 11 Back to Basics, AHA SCP, Rolling Meadows, Ill. Entries due March 4. Contact Jim Thommes at (708) 397-0203.
- 17-18 1995 March Mashfest, AHA SCP, Fort Collins, Colo. Entries due March 10. Contact Brian Walter at (303) 493-2586.
- 17-18 Beast of the East, Troy, N.Y. Call (518) 274-3210.
- 18 Winter Carnival Brewers Assay, AHA SCP, Fairbanks, Alaska. Entries due March 17. Contact Roger Penrod at (907) 479-8795.
- 18 CRAZY Homebrewers' Hop Into Spring, AHA SCP, Cedar Rapids, Iowa. Entries due March 14. Contact Mike Snyder at (319) 393-1219.
- 18 Maple Syrup Home Brewing Competition, AHA SCP, Chicago, Ill. Entries due March 11. Contact Andy Patrick at (708) 705-6923.
- 19 BJCP Exam, Troy, N.Y. Contact Gregg Smith at (208) 533-4879.
- 19 BJCP Exam, Vancouver, B.C. Contact Betty Ann Sather at (603) 355-3359.
- 24-26 Oldenberg's Beer Camp, Fort Mitchell, Ky. Call (800) 426-3841.
- 25 Brewers of South Suburbia 1995 Regional Homebrew Competition, AHA SCP, Lockport, Ill. Entries due March 17. Contact Al Korzonas at (708) 430-HOPS.
- 25 March in Montreal, AHA SCP, Montreal, Quebec. Entries due March 11. Contact Graham Bigland at (514) 855-2681.
- 25 Hudson Valley Homebrewers Annual Club Competition, AHA SCP, Poughkeepsie, N.Y. Entries due March 18. Contact Robert Carter at (914) 565-3921.
- 26 World Cup of Beer, AHA SCP, Oakland, Calif. Entries due March 15. Contact David Klein at (510) 530-0648.
- 27 Bock is Best Club-Only Competition, AHA SCP, Nashua, N.H. Entries due March 20. Contact James Spence at (303) 447-0816, Ext. 121.
- 31 Fifth Annual Dukes of Ale Spring Thing, AHA SCP, Albuquerque, N.M. Entries due March 25. Contact Guy Ruth at (505) 294-0302.

APRIL

- 1 Ninth Annual Bluebonnet Brew-Off, AHA SCP, Irving, Texas. Entries due March 18. Contact Pat Morrison at (817) 383-4399.
- 1 Borderline Yeast Infectioners First Annual, AHA SCP, Binghamton, N.Y. Entries due March 18. Contact Bob Talkiewicz at (607) 772-8442.

- 2 BJCP Exam, Dallas/Fort Worth, Texas. Contact A.L. Kinchen at (214) 241-4986.

- 8 Green Mountain Homebrew Competition, AHA SCP, Burlington, Vt. Entries due March 31. Contact Tom Ayres at (802) 660-9007.

- 9 Evanston First Seventh Homebrew Competition, AHA SCP, Evanston, Ill. Entries due April 2. Contact Chris Nemeth at (708) 869-3621 or Internet: idnemeth@gate.id.iit.edu.

- 21 zymurgy Summer Issue (Vol. 18, No. 2) mails. Please allow 4 to 6 weeks for delivery.

- 22 Bidal Society of Kenosha, AHA SCP, Kenosha, Wis. Entries due April 15. Contact Carol DeBell at (414) 654-2211.

- 22 Chili Cookoff and Beer Brewoff, AHA SCP, Grand Junction, Colo. Entries due April 18. Contact Jana Stevens at (303) 241-0070.

- 22 Crescent City Competition, AHA SCP, New Orleans, La. Entries due April 18. Contact Steve Clark at (504) 834-8020.

- 22 1995 Maltose Falcon's Mayfaire, AHA SCP, Woodland Hills, Calif. Entries due April 8. Contact Russell Reece at (310) 379-2921.

- 23 BJCP Exam, Naperville, Ill. Contact Frank Dobner at (708) 892-3629.

- 23-26 Institute for Brewing Studies' Microbrewers and Pub-
brewers Conference and Trade Show, Austin, Texas. Contact Nancy Johnson at (303) 447-0816, Ext. 131.

- 27-30 Home Wine and Beer Trade Association Conference, Atlanta, Ga. Contact Dee Roberson at (813) 685-4261.

- 29 BJCP Exam, in conjunction with the HWBTA Conference. Contact Pat Baker at (603) 355-3359.

- 28-30 & May 5-7 AHA 1994 National Homebrew Competition First-Round Judging. Entries due April 3-4. Call the AHA at (303) 447-0816.

- 29 U.S. Open Competition, AHA SCP, Charlotte, N.C. Entries due April 21. Contact Bruno Wichnoski at (704) 597-5782.

- 29 California Beer Festival at the San Diego Sports Arena. Contact John Thomas at (909) 676-2337.

MAY

- 6 BJCP Exam, Orlando, Fla. Contact Ronald Bach at (407) 696-2738.

- 6 National Homebrew Day. Contact Lori Tullberg-Kelly at (303) 447-0816, Ext. 106.

- 7 Sixth Annual Central Florida Sunshine Challenge, AHA SCP, Orlando, Fla. Entries due May 1. Contact Tom Moench at (407) 952-4658.

- 10 Seventh Annual Homebrewers' Extravaganza, AHA SCP, Memphis, Tenn. Entries due May 5. Contact Michael Lee at (901) 682-1293.

- 13 Oregon Homebrew Festival, AHA SCP, Corvallis, Ore. Entries due May 12. Contact Lee Smith at (503) 926-2286.

- 13 Ninth Annual Big and Huge Homebrew Competition, AHA SCP, Madison, Wis. Entries due May 6. Contact MHTG, Box 1365, Madison, WI 53701.

- 20 Great Canadian Homebrew Competition, AHA SCP, Toronto, Ontario. Entries due May 19. Contact Dennis Kinvig at (416) 536-1016.

- 20 Great Alaska Third Annual Craft-beer & Homebrew Festival, AHA SCP, Haines, Alaska. Entries due May 18. Contact Jack Dillree at (907) 766-3131.

- 20 Fourth Annual Moon Madness Competition, AHA SCP, Douglassville, Pa. Entries due May 15. Contact Randy Martin at (610) 944-0500.

- 26-28 Fourth Annual Mazer Mead Competition, AHA SCP, Ann Arbor, Mich. Entries due May 8-19. Contact Dan McConnell at (313) 663-4845.

- 29 Rauchbier Roundup Club-Only Competition, AHA SCP, Ithaca, N.Y. Entries due May 22. Contact James Spence at (303) 447-0816, Ext. 121.

JUNE

10 Orange County Fair Homemade Beer Competition, **AHA SCP**, Costa Mesa, Calif. Entries due June 7. Contact Tim Higman at (714) 851-3274.

14-17 AHA National Homebrewers Conference, **Planet Beer**, Baltimore, Md. Details in this issue.

17 Oregon Brew Crew Pilsener Competition, **AHA SCP**, Portland, Ore. Entries due June 13. Contact Tom Thompson at (503) 281-8732.

22-25 Edmonton Homebrewers Guild Seventh Annual Open Beer Competition, **AHA SCP**, Edmonton, Alberta. Entries due June 19. Contact Geoff Kuziw at (403) 479-3771.

25 Eighth Annual Southern California Regional Homebrew Competition, **AHA SCP**, San Bernardino, Calif. Entries due June 23. Contact John Eichman at (909) 797-6452.

25 Buzz-Off, **AHA SCP**, Wayne, Pa. Entries due June 19. Contact David Houseman at (610) 458-0743.

JULY

7 *zymurgy* Fall Issue (Vol. 18, No. 3) mails. Please allow 4 to 6 weeks for delivery.

8 BJCP Exam, Brattleboro, Vt., Contact Pat Baker at (603) 355-3359.

AUGUST

12 Josephine County Fair, **AHA SCP**, Grants Pass, Ore. Entries due Aug. 10. Contact Hubert Smith at (503) 597-2142.

12 Beer and Sweat '95, keg-only. **AHA SCP**, Fort Mitchell, Ky. Entries due Aug. 12. Contact Tim Thomas at (606) 291-4843.

19-20 Great Rocky Mountain Beer Festival, **AHA SCP**, Copper Mountain, Colo. Homebrew entries due July 5. Microbrew entries due July 19. Contact

John Sabal at (303) 968-2318, Ext. 6505.

26 Weiss is Nice Club-Only Competition, **AHA SCP**, Boulder, Colo. Entries due Aug. 14. Contact James Spence at (303) 447-0816, Ext. 121.

SEPTEMBER

TBA TRUB Open, **AHA SCP**, Durham, N.C. Entries due TBA. Contact Mike Lelivelt at (919) 408-0451.

4 Ethnic Festival Homebrew Competition, **AHA SCP**, Springfield, Ill. Entries due Aug. 28. Contact Roger Meridith at (217) 428-7022.

13 *zymurgy* Special Issue of (Vol. 18, No. 4) mails. Please allow 4 to 6 weeks for delivery.

OCTOBER

13-14 Real Ale Fest Conference, Chicago, Ill. Contact Dennis Davison at (414) 545-9246 or e-mail ddavison@earch.execpc.com.

28 Best of Fest Club-Only Competition, **AHA SCP**, Rolling Meadows, Ill. Entries due Oct. 23. Contact James Spence at (303) 447-0816, Ext. 121.

NOVEMBER

4 1995 Capitol District Open, **AHA SCP**, Washington, D.C. Entries due Oct. 30. Contact Fred Hardy at (703) 378-0329.

11 November Classic, **AHA SCP**, Madison, Wis. Entries due Nov. 4. Write MHTG, Box 1365, Madison, WI 53701.

18 BJCP Exam, Brattleboro, Vt. Contact Pat Baker at (603) 355-3359.

22 *zymurgy* Winter Issue of (Vol. 18, No. 5) mails. Please allow 4 to 6 weeks for delivery.

DECEMBER

9 Renowned Brown Club-Only Competition, **AHA SCP**, Fargo, N.D. Entries due Dec. 4. Contact James Spence at (303) 447-0816, Ext. 121.

AHA SCP = American Homebrewers Association Sanctioned Competition Program

To list events, send information to *zymurgy* Calendar of Events. To be listed in *zymurgy* Summer 1995, information must be received by March 24, 1995. 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.

Brew with the Best.

Stoelting Home Brewing Equipment

a comprehensively designed line of home brewing equipment beautifully crafted from stainless steel — the metal choice of professional brewers'.

Stoelting's brew kettles and mash screens will meet your needs with 7, 10, 16, and 20 gallon sizes. For your heat-up and cool-down, use our gas or electric burner and our fast chilling wort chiller.

Set-up your home brewing system with the best — Stoelting Home Brew Equipment. You'll enjoy the taste of a quality brewed beer.

Call the Stoelting Brew Crew (800-336-BREW) to order our full-line brochure.



502 Hwy 67 Kiel, WI 53042



Pictured above - The Brew System 2: a 7 gallon brew kettle, gas burner, mash screen, and wort chiller with housing.

5-GALLON BREW KEGS

\$29.95 (+ shipping)

- reconditioned Cornelius cans
- Pepsi standard ball-lock fitting
- pressure tested to 120 psi
- steam cleaned & dents removed
- buffed steel coating
- fits in refrigerator

at last, a steady supply at low prices

CALL NOW

1 503 223 0990

or 1 800 YOUR KEG

COMING SOON: YOUR KEG COMPLETE CO:KIT \$125!

Telephone: (503) 254-7494, Fax: (503) 251-2936
7024 N.E. Glisan Street, Portland, Oregon 97213 U.S.A.



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.**

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

Cape Cod's

Largest Homebrewing Store

Over 100 Different Malts
Over 25 Varieties of Grain

25 Yeast - 15 Hop Varieties

Complete Line Of

Brewing Equipment

"Quality Products at Affordable Prices"



**Barnstable Brewers
Supply**



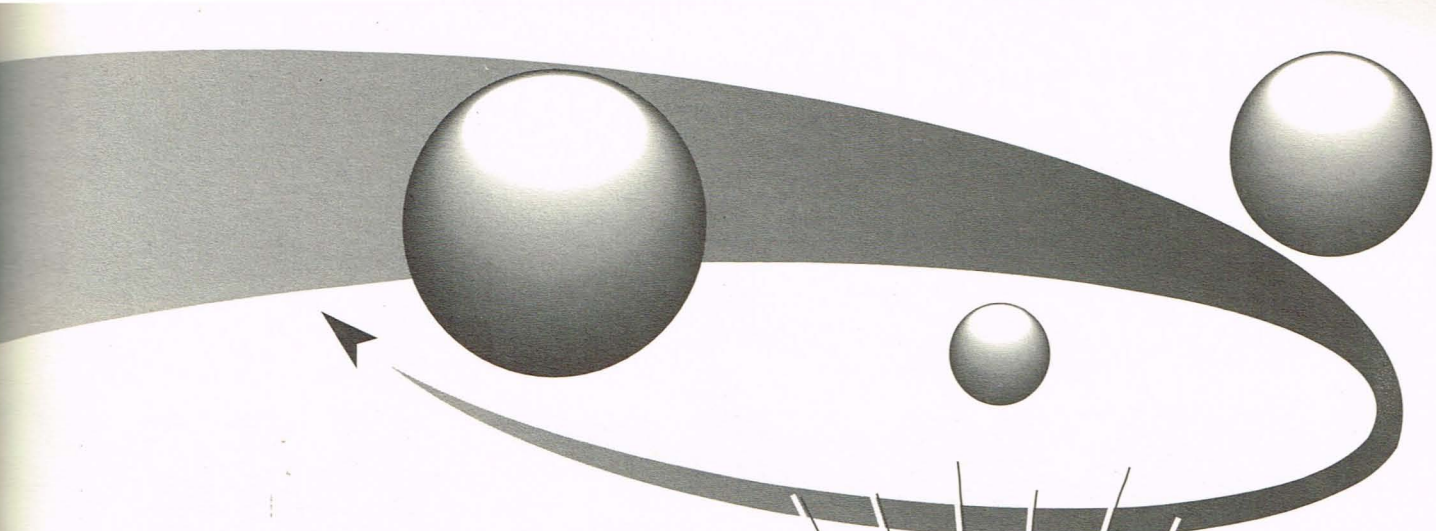
Free Catalog

(508) 428-5267 or FAX (508) 420-0130

Retail Store & Mail Orders

Rte 28 Windmill Square
Marstons Mills MA

Post Office Box 1555
Marstons Mills MA 02648



**American Homebrewers Association
National Homebrewers Conference
June 14 - 17, 1995, Baltimore, Maryland**

The Planet Beer Scoop!

Planet Beer is 15 speakers, 3 1/2 days, 500 beer lovers, 10 events, five countries, home-brewed beer, **craft-brewed** beer, National Homebrew Competition judging, **new** products, gadgets, education, crab feasts, demonstrations, tastings, festivities, banquets, **expert** panels, beer labs, **hands-on** demonstrations, the Big Bang, pub crawls ...

Intergalactic Brews!

- Commemorative Beer - Belgian Strong Ale - created by Jim Busch
- Planet Homebrews - created by 1994 AHA National Homebrew Competition Winners
- Planet Beers - brewed by craftbrewers from around the country especially for you
- Commemorative Mead - created by Phil Fleming and conditioned more than 16 months

Star Speakers!

Jim Busch, Paul Correnty, Ray Daniels, Jim Koch, Clive LaPensée, Surprise Appearances, Russ Levitt, Randy Mosher, Charlie Papazian, Special Guests, Maribeth Raines, Tim Rastetter, Pete Slosberg many others and much more!

Astronomical Fun!



Mission Countdown

Wednesday, June 14

National Homebrew Competition, Second-Round Judging
Beer Judge Certification Exam
Apprentice Beer Judge Lab
Educational Seminars/Presentations
Opening Reception

Thursday, June 15

Celestial Breakfast
National Homebrew Competition Best-of-Show Judging
Keynote Address
General Sessions
Educational Seminars/Presentations
Crab Feast
Baltimore Beer Adventures

Friday, June 16

Educational Seminars/Presentations
Homebrew Club Rendezvous
East Coast Beer Tasting
Grand Banquet and Awards Ceremony

Saturday, June 17

The Big Bang — an interactive trade show and festival

Everything is subject to change without notice.



Planet Beer — The 1995 AHA National Homebrewers Conference. For a detailed schedule of events and speakers, fill this out and pop it in the mail. (If you have registered for the Conference we'll send you a schedule, no need to fill out this card.)

Yes! Send Me More Info about Planet Beer!

Please print clearly.

Name _____

Address _____

City _____

State _____ Zip _____

Internet or other e-mail address _____

Daytime phone _____

AHA Membership # _____



Questions? Contact Nancy at (303) 447-0816, Ext. 131, or FAX (303) 447-2825 or nancy@aob.org.

Planet Beer Registration

All events, speakers and schedules are subject to change without notice.

Universal Pass

It's Easy! One Low Price is All You Need!

(Limited offer, limited space. Open to AHA members only. You must register before May 12. Universal registration will close when full.)

Includes: all speaker sessions, access to all labs, all meals including the Crab Feast and Grand Banquet, opening reception, Planet Beer T-shirt, one bottle of commemorative beer, one bottle of commemorative mead, The Big Bang and one commemorative glass.

AHA membership # _____

T-shirt (please circle size) M LG XL XXL

Amount \$250

New AHA Member (Canadian substitute \$34, International \$44) +\$29

Day Passes

(Labs offered per day will close when filled. Space is allotted to Universal registration first, then to one-day pass holders.)

Registration on or before May 12	after May 12
Wednesday, June 14 \$75	\$95
Thursday, June 15 \$100	\$125
Friday, June 16 \$100	\$125
Saturday, June 17 (The Big Bang) \$25	\$30

Lunar Pass (Includes The Big Bang & meal functions only.)

\$69 \$87

More Options

Beer Judge Certification Exam (retakes \$30)	\$50
Commemorative Planet Beer T-shirt (included in Universal Pass)	\$15
(please circle size)	M LG XL XXL

TOTAL \$ _____

The last day to pre-register is May 26, 1995. On site registration begins Tuesday, June 13, 1995.

☐ Check here if you require special assistance to fully participate. Please attach a written description.

Name _____ Club Name _____

Nickname (for name tag) _____

Address _____

City _____ State _____ Zip _____

Daytime Phone _____ Internet or other e-mail address _____

Method of Payment

☐ Check ☐ Visa ☐ MasterCard

Card # _____ Expiration Date _____

Signature _____

Detach, Fold, Tape (DO NOT STAPLE) and Mail this Form Today!

Questions? Contact Nancy at (303) 447-0816, Ext. 131, FAX (303) 447-2825 or nancy@aob.org.

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 206 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

American Homebrewers Association®
Mission Control — Planet Beer
PO Box 1679
Boulder, CO 80306-9805

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



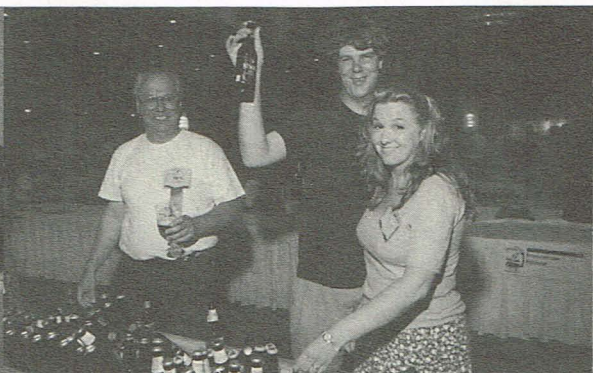
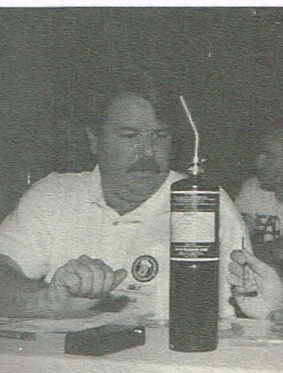
BUSINESS REPLY MAIL

FIRST CLASS MAIL PERMIT NO. 206 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

American Homebrewers Association®
Mission Control — Planet Beer
PO Box 1679
Boulder, CO 80306-9912

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



Hotel Registration

Radisson Plaza Lord Baltimore

The best bed by far to plop into at the end of a planetary day is located right here. Enjoy this comfortable and conveniently located hotel. The Radisson Plaza Lord Baltimore has graciously reserved the *entire* hotel just for Planet Beer attendees. It will *sell out*, so register early!

Name _____

Address _____

City _____ State _____ Zip _____

Phone (day) _____ Phone (evening) _____

Date and time of arrival _____ Date of Departure _____

Type of Room ☐ Single ☐ Double ☐ Parlor ☐ Smoking ☐ Non Smoking

Method of Payment

☐ Check ☐ Visa ☐ MasterCard ☐ American Express

Card # _____

Expiration Date _____

Signature _____

Mention Planet Beer and get these great rates!

Single/Double \$89*

One Bedroom Parlor \$150*

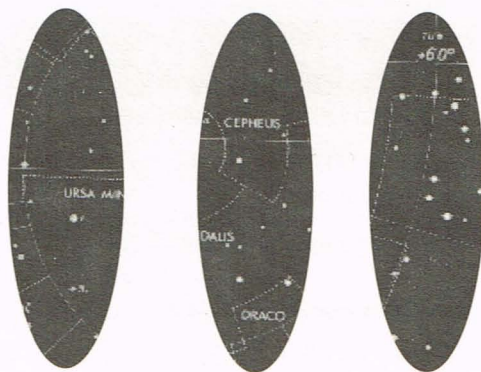
*some restrictions apply

For reservations, call the hotel directly, mail or FAX a copy of this form to the hotel:

Planet Beer rates are good thru May 21, 1995.
After that, rack rates will be quoted.

Radisson Plaza Lord Baltimore
Planet Beer - American Homebrewers Association
20 West Baltimore St.
Baltimore, MD 21201-3285

Phone (410) 539-8400 or (800)333-3333
FAX (410) 625-1060



Airline Information

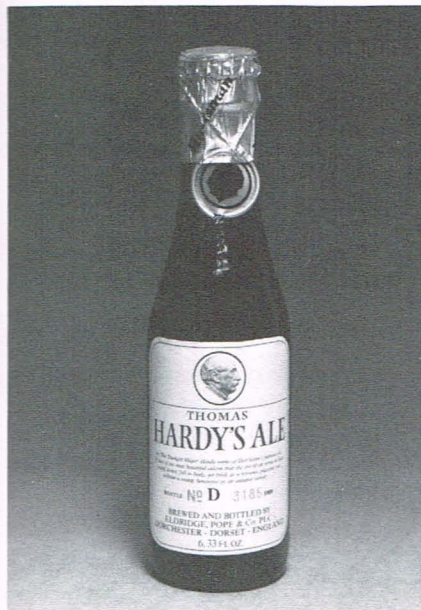
The AHA wants to make it easy for you to zoom directly to Planet Beer. Rockets we don't have, but we can offer you the services of Via Travel. They will guarantee the lowest fares in every market. For details and information call Debby, Heather or Carolyn at (800) 524-7169 from 8 a.m. to 5:30 p.m. MST.
Or, fly with United and use this confirmation # 5841A for the best deal.

BREW NEWS

James Spence

HEAD LINES

Ale Tasting Spans 25 Years



A Thomas Hardy's Ale tasting with vintages spanning 25 years was recently conducted by the *Malt Advocate*, a new beer and whiskey magazine. Eight vintages from the four decades of production were sampled by beer writers, brewers, a wine expert and the importer. The first vintage from 1968 was part of the vertical array of beers. Thomas Hardy's Ale is a very strong barley wine produced by the Eldridge Pope Brewery in Dorchester, England. It is bottle conditioned and reputed to age well for up to 25 years. The 1993 "Silver Anniversary" vintage, the youngest of the beers, was deemed somewhat cloying, while a 1987 "150th Anniversary" — sherry-cask aged and corked

— was well-matured and oaky. Two of the beers bottled in the 80s had been spoiled by bacteria or wild yeast. The benefits of aging the beer for even a short time were seen in the drier, more balanced 1990 vintage. The oldest beers, a 1974 and the original 1968, were considered to be complex and soft-spoken, with the 1968 still maturing in the bottle. (*Malt Advocate*, Vol. 4, No. 1)

Kvass Popularity Falls

A favorite Russian beverage, kvass, is declining in popularity on the streets of Moscow. The drink described as tasting like liquid toast is brewed like beer, but with rye instead of barley. It contains a small amount of alcohol. The drink is spiced in more than 50 different ways — horseradish and berries are just two examples. Russians once purchased the drink from mobile tanks on the street — sharing glasses filled from a rubber hose with other customers. The largest producer, Ostankino Soft Drink Factory, formerly produced 10 million gallons per year but production is down by 97 percent. The introduction of Western beverages such as Pepsi and Coca-Cola is partly blamed for the decline in kvass popularity. (*Modern Brewery Age*)

Clots Blocked by Moderate Alcohol Consumption

A study published in *The Journal of the American Medical Association* reports that one or two drinks a day may aid in preventing heart attacks. Researchers measured the blood level of endogenous tissue-type

plasminogen activator, or TPA, in 631 healthy doctors. The endogenous TPA enzyme plays a role in the body's system of breaking down blood clots. Those who consumed one or two drinks a day were found to have the highest levels of the enzyme, while nondrinkers were found to have the lowest level of the enzyme. The researchers believe their results supplement previous research that linked alcohol consumption with increased levels of high-density lipoprotein (HDL) cholesterol — the so-called "good cholesterol." The amount of cholesterol in the blood, HDL cholesterol, body weight or family history of heart disease did not change the relationship between alcohol intake and endogenous TPA. (*New York Times*, Sept. 18, 1994)

Boston Beer Co. Offers Hops

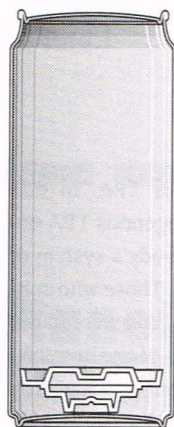


Jim Koch, founder of the Boston Beer Co., is making available to homebrewers about 1,200 pounds of the rare Hallertauer Mittelfrueh hops used in many Samuel Adams' brews. Koch will sell them at his cost. Hallertauer Mittelfrueh hops cost up to 20 times more than other hops, and are grown only on 400 acres in Bavaria.

The hop pellets are available in nitrogen-flooded Mylar foil pouches on a first-come, first-served basis for \$12 per one-pound

package, one package per customer. Write to Noble Hops, Boston Beer Co., The Brewery, 30 Germania St., Boston, MA 02130.

"Widget" Planned for More Brews



plastic widget

The success of its Pub Draught Guinness Stout has prompted Guinness to spend \$17.8 million dollars to launch a canned lager that will produce the same creamy head as the stout. The special cans have a plastic device in the bottom that releases nitrogen to produce a rich, creamy head when the can is opened. The second-generation "widget"

includes a tube that delivers the beer/gas mixture to the top of the can. The lager is called Enigma, and contains 3.9 percent alcohol by weight (5 percent by volume).

Bass also is working on a version of the "widget" made of metal that will allow the canned beers to be served without chilling. Worthington Best Bitter will be the first beer produced with the new device. Other forms of the gadget require the beer to be chilled to prevent excessive foaming. (*The Brewing Industry News*, Vol. 15, Issues 15 and 19)

TECHNOTES

Yeast Growth in Space

On two separate space shuttle missions, microgravity yeast fermentations were carried out to determine what effects the low gravity environment would have on growth and development. On STS-60, February 1994, eight one-milliliter fermentations were conducted. On STS-62, March 1994, four one-milliliter fermentations were carried out. Additional fermentations were done with the samples after their return to earth. Compared

MICROBREWERIES, BREWPUBS AND CONTRACT BREWERIES

Information provided by the Institute for Brewing Studies, Boulder, Colo. A complete state-by-state list of breweries and brewpubs in North America is updated quarterly and available from the Association of Brewers for \$5.

OPENINGS

(As of Nov. 1994)

UNITED STATES

Microbreweries

Arizona: Oak Creek Brewing Co., Sedona
Colorado: Snowy Mountain Brewing Co., Grand Junction; Namaqua Brewing Co., Loveland; Coophouse Brewery, Broomfield
Florida: Ybor City Brewing Co., Tampa
Maryland: Brimstone Brewing Co., Baltimore; McHenry Brewery, Baltimore
Massachusetts: Berkshire Brewing Co., South Deerfield
Montana: Himmelberger Brewing Co., Billings
North Carolina: Wilmington Brewing Co., Wilmington
Ohio: Lift Bridge Brewing Co., Ashtabula
Pennsylvania: White Tail Brewing Co., York; Independence Brewing Co., Philadelphia
South Carolina: Foothills Brewing Co., Moore
South Dakota: Black Hills Brewing Co., Deadwood
Texas: Yellow Rose Brewing Co., San Antonio
Vermont: Green Mountain Microbrewery, Winooski
Washington: Diamond Knot Brewery, Mukilteo; Mac and Jack Brewery, Redmond; Hart Brewing Co., Seattle

Brewpubs

Arizona: Hops Bistro and Brewery No. 3, Phoenix
Colorado: Union Colony Brewery, Greeley
California: Black Diamond Brewing Co., Walnut Creek; Rio Bravo Restaurant & Brewery II, Santa Barbara; Sunset Beach Brewery & Fish House, Huntington Beach
Florida: G.T. Vito's, Clearwater; Hops Grill & Bar No. 8, Jacksonville; Hops Grill & Bar No. 9, Orange Park
Hawaii: Gordon Biersch Brewing Co., Honolulu; Kona Brewing Co., Kealahou
New Mexico: O'Ryan's Tavern and Brewery, Las Cruces
Indiana: Bloomington Brewing Co., Bloomington
Kansas: Adam's Rib Barbeque & Brewery, Overland Park; Saddle Sore Brewing Co., Overland Park
Louisiana: Abita Brewpub, Abita Springs; Pilot House Restaurant & Brewery, Baton Rouge

Maine: Sea Dog Brewing Co. II, Camden; Sweet Water of Acadia/Down East Brewing Co., Bar Harbor

Massachusetts: Commonwealth Brewing Co. No. 2, Boston

Minnesota: Shannon Kelly's Brew Pub, St. Paul

Missouri: Mill Creek Brewery & Restaurant, Kansas City; Westport Brewing Co., Kansas City

Montana: Billings Brewing Co., Billings

Nebraska: Gottberg Brew Pub, Columbus

New Jersey: The Ship Inn, Milford; Triumph Brewing Co., Princeton

New York: Yorkville Brewery & Tavern, New York; Long Island Brewing Co., Jericho

New Mexico: The Chile Connection, Taos

Ohio: Main Street Brewery, Cincinnati

Oregon: Lucky Labrador Brewing Co., Portland; Oregon Fields Brewing Co., Eugene; Wild River Brewing Co., Grants Pass; Cascade Lakes Brewing Co., Redmond

South Carolina: Hilton Head Brewing Co., Hilton Head

South Dakota: Sioux Falls Brewing Co., Sioux Falls

Tennessee: Big River Grille & Brewing Works, Nashville; Calhoun's Restaurant & Brewery, Knoxville

Texas: Houston Brewery, Houston; Rock Bottom Brewery No. 3, Houston; Stonehouse Brewery, Austin

Utah: Salt Lake Brewing Co. No. 2 (Fuggles Brewpub), Salt Lake City

Vermont: The Shed Restaurant, Stowe

Wisconsin: Great Dane Pub & Brewing Co., Madison; Madison Brewing Co., Madison

CANADA

Microbreweries

Alberta: Alley Kat, Edmonton
British Columbia: Bastion City Brewing Co., Nanaimo; Tall Ship Ale Co., Squamish
Manitoba: Fort Garry Brewing Co., Winnipeg
Ontario: Robinson Brewing Co., Mississauga

Brewpubs

Manitoba: Bushwakker Brewpub, Winnipeg

CLOSINGS

Microbreweries

Michigan: Detroit & Mackinac Brewing Co., Detroit

to ground samples, the flight samples showed a significant reduction in cell increase rates, decreased peak cell counts and decreased cell sedimentation. The research was carried out by Kristen S. Sterrett and M.S. Luttges of the University of Colorado at Boulder, and C.L. Edelen of Coors Brewing Co., Golden, Colo. (MBAA, 107th Anniversary Convention, porter presentation)

Classification of Hop Varieties

Different methods of classifying hops can lead to confusion among brewers, particularly when varieties must be verified or when a brewer must substitute one variety for another while maintaining product consistency. According to the authors, several hop characteristics can be used: the alpha-beta acid ratio, the ratio of cophumulone to the sum of n-humulone and adhumulone; the ratio of colupulone to the sum of n-lupulone and adlupulone, and the ratio of the pure hydrocarbon fraction of aroma substances to the fraction of compounds containing oxygen. In addition, the percentage of several hop oil components in relation to others lead to the classification of several hops into classical aroma varieties, bittering hop varieties, etc. (A. Forster and R. Schmidt, *Brauwelt International*, No. 1994/II, pp. 108-124)

Improving Foam Stability

Several factors influence foam stability. In experiments performed at five different breweries, researchers uncovered the following factors. For each 0.1

pH reduction in the finished product, foam stability improved by 10 seconds. Higher levels of high molecular polypeptide content led to greater stability. Foam stability decreased when the yeast absorbed higher amounts of free amino nitrogen during fermentation. Higher mashing-in temperatures increased stability, as did acidification of beer wort. The



addition of 2.5 percent crystal malt improved foam stability, as did the quality of the malt used. (A.D. Haukeli, T. O. Wulff and S. Lie.; *Proceedings of the European Brewery Convention Congress*, Oslo, 1993, 365-372)

Effect of Iso-alpha-acids in Brewing

Iso-alpha-acids in the last steep of the malting process reduced barley root

growth. In addition, in the presence of *Lactobacillus brevis*, the iso-alpha-acids seemed to cause the bacteria to spoil beer. Only 0.0001 percent of bacteria cells spoiled beer in the absence of iso-alpha-acids, while the presence of 5 µm of acids caused 0.1 percent of the cells to spoil beer. More than 20 µm of acids activated the ability of the cells to spoil beer. (W.J. Simpson, J.L. Fernandez, P.S. Hughes, D.K. Parker and A.C. Price; *Proceedings of the European Brewery Convention Congress*, Oslo, 1993, 183-192)

BREWMASTER
AUSTRALIAN


IRONMASTER
ALEXANDERS

EDME
BREW/FERM

TELFORDS
GEORDIE

JOHN BULL
TOM CAXTON

BREWMASTER



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

MEMBER



2315 VERNA COURT
SAN LEANDRO, CA 94577

WINEMAKING STEMMER/CRUSHERS, PRESSES & EQUIPMENT

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
- ◆ Brewferm
- ◆ Brewmart
- ◆ Coopers
- ◆ Edme
- ◆ Glenbrew
- ◆ John Bull
- ◆ Laaglander
- ◆ Munton & Fison

"Brewer's Best" Equipment Kits, Ingredient Kits, Crown Caps and Liquid Thermometers

"Vintner's Reserve" Wine Kits

"Vintner's Best" Wine Equipment Kits

Domestic, English and Belgian Grains
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



L.D. Carlson
COMPANY

*Quality Products for the Discriminating
Winemaker and Beermaker*

Toll Free Fax!
1-800-848-5062

(WHOLESALE ONLY PLEASE)

JACKSON ON BEER

Michael Jackson

Independence has turned out to be short-lived for many breweries in Central and Eastern Europe. Under Soviet domination, many of them suffered from a lack of investment, but this neglect could be relatively benign. Not all party hacks wished to interfere with the brewing process. Now these breweries' homelands are independent. Faced with a competitive environment and needing investment, many such breweries are throwing themselves at the feet of Western invaders.

Central and Eastern European companies have variously entered into agreements with, for example, Binding (of Germany), Heineken, Bass and South African breweries.

Although this part of the world has few specialty beers, the years of benign neglect did allow some tasty "porters" (usually bottom-fermenting versions of Imperial stouts), dark lagers and all-malt, hoppy Pilseners to survive. The danger is that these beers will be swept aside by the bland, international-style golden lagers found anywhere from Copenhagen to Cape Town.

This would represent the final destruction of a beer culture stretching from two Kings Wenceslas of Bohemia (one forbade the export of hop cuttings, the other granted beer-making rights to Plzeň and Budweis) to the great brewer of the 1800s, Anton Dreher.

Paradoxically, Eastern and Central Europe could be embracing bland, "Western-style" brews at just the moment when Western Europe, and more especially North America, are rediscovering flavor and individuality.

There are those in Britain who believe they have no need to care about beer in other countries. I would remind them that no human is an island, even if he or she drinks only British ales at a classic "island bar" (as devised by Brunel, who was of French origin).

Here are more paradoxes. Local brewing traditions were best protected before widespread literacy, railways and steamships,

which allowed beermakers to learn about one another's products and pick up tricks from each another.

The problem with those days was beer drinkers knew only the local styles, and took those styles for granted. They never learned that beer can be as varied in its manifestations as wine.

This local focus prevailed in Europe's eastern backwaters, to the advantage of beers with a good, "old-fashioned" taste of malt and hops. Now it is endangered by consumer demand as well as Western intervention. Father drank Pilsner Urquell, so son seeks out something more "worldly" from the West. He may also abandon tasty rye breads for "modern" sliced whites.

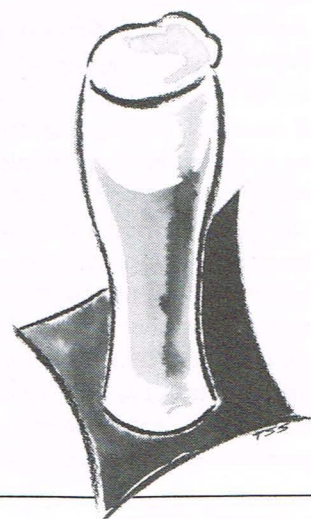
The situation in the Czech Republic, to some extent even in both former East and West Germany and to a far lesser degree in Belgium reminds me of that in Britain at the beginning of the 1950s and in the 1960s. Until that time, a majority of the labor force was male, and manual workers represented the largest social class. Their principal leisure activity was to visit the pub where they could wash the coal dust out of their mouths, or replace the fluid lost in the sweat of the steelworks. The Czech Republic is becoming less industrial, its workforce less male, and its leisure pursuits less rooted in the tavern. The people are enjoying a more liberated and diverse life, but breweries are suffering.

So is the quality of beer. So far, Czech breweries seem to be staying with costly double and triple decoction mashing methods (which in my opinion produce a richer, fresher-tasting and more complex malt character), but are less diligent in the matter of hop varieties or lagering times.

Whatever some executives of Pilsner Urquell may say, fermentation and lagering in oak is no longer widely evident there or elsewhere in the Czech Republic. Some brewers may think this is good, but in my opinion oak



Will Euro Drinkers Have to Face a Red Barrel Threat?



imparts a complexity that is absent when stainless steel is used. Perhaps this is also because maturation in oak was usually far longer and with more complex yeasts than newer systems in stainless steel. I have missed this flavor character in my recent travels in the Republic.

A further financial pressure being Czech beers are no longer as readily available in Slovakia and other central and eastern countries as they were during the days of a Soviet-steered command economy. In many of these countries, the local breweries have formed alliances with powerful Western companies. In some, these local/international joint ventures, originally encouraged by the free market, are now hedged by protectionism.

The Czechs' response is to make beer more quickly and cheaply to render it more competitive in price. In Germany, local breweries are losing market share to national brands. When I recently visited a brewery that considers itself Germany's most successful, I was told that varieties of barley and hop were of no consequence so long as laboratory criteria were met. When I asked why this company's beer was "best," the explanation was that it had the biggest lab of any brewery in Germany, and that the beer was lagered for "two to three weeks." This brewery regarded its product as a "premium" brand. I suppose Watney's had the same view of Red Barrel.

In Germany, an arriviste generation that considers semi-national "premium" brands of Pils to be the height of sophistication is being challenged by a younger group of wheat beer drinkers. Sad to say, even wheat beers are becoming blander.

In Belgium, many specialty beers are becoming sweeter, but at least they are increasing in market share.

Acquisitions by Interbrew and cross-border alliances like the one between Alken-Maes and Kronenbourg (or Carlsberg and Allied) threaten us with Europils, but at least these companies have a glimmer of understanding that not all beer is the same.

Beer lovers' movements in Eastern Europe seem more concerned with prices and the sheer joy of drinking (both worthy concerns) than they do with the integrity and variety of the product. The Objectieve Bierproevers (Objective Beer Tasters) in Belgium, PINT in the Netherlands, and the various organizations in Scandinavia are closer in spirit to their

inspiration, CAMRA (Campaign for Real Ale).

Eastern Europe now needs all the help it can get if independence is to mean what it says. Or perhaps it just cannot accept or comprehend such assistance, and has to go through the attrition of a Red Barrel era before it can enjoy its Anchor Steam days.

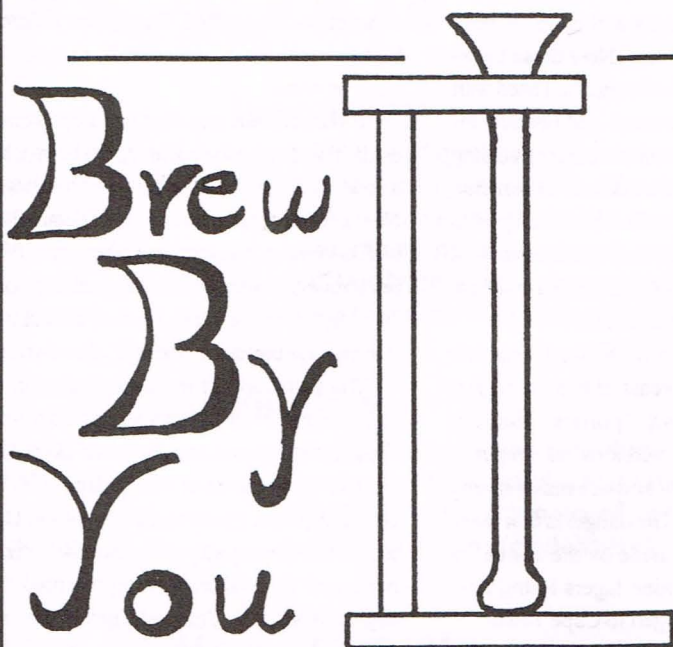
As someone who loves both Pilsner Urquell and Anchor Steam, and always preferred Young's Bitter to Red Barrel, I hope my prognosis proves to have been pessimistic.

Reprinted with permission from What's Brewing, newspaper of the Campaign for Real Ale.



Michael Jackson is internationally the best-known writer on beer. His *Beer Companion* (Running Press, 1994) was awarded the 1994 Glen Fiddich Trophy, an honor never before bestowed to a

book on beer. His articles, books and documentary videos have introduced beer styles to countless drinkers and brewers outside their native lands. His use of taste descriptions and accounts of his travels introduced a new genre of writing on beer.



HOME BREWING SUPPLY CO.

Brew By You, Inc. is owned & operated by homebrewers, like yourself. We are as particular about our products and service as you are about your beer.

Our extensive selection will satisfy both the beginner & the advanced homebrewer. And, we offer you this at prices that reflect true commitment to the customer.

Telephone (800) 9-TO-BREW

Facsimile (914) 732-8213

Call or Write for your Free Catalog

119 Rockland Center Suite 293 • Nanuet, N.Y. 10954

The Home Brewery™

NATIONWIDE HOMEBREWING SUPPLIES since 1984! Call today for our free 32-page Catalog full of products, recipes, and brewing tips - or visit *The Home Brewery* shop nearest you!

Missouri (800) 321-2739
California (800) 622-7393

Nevada (800) 288-3275
New Jersey ... (800) 426-2739
Florida (800) 245-2739
Kentucky (800) 992-2739
North Dakota . (800) 367-2739

FREE CATALOG
(800) 321-BREW

Forget the REST - Buy from the BEST!



Beer & Wine Making Supplies

Fresh Products
Prompt Service

Quality Merchandise
Dependable Advice

Low Prices

FREE catalogs upon request

"Brewing System & Style Guide" for BEGINNERS
or a Comprehensive 72 page Catalog for
ADVANCED BREWERS & WINEMAKERS

114-O Freeland Lane

Charlotte, NC 28217

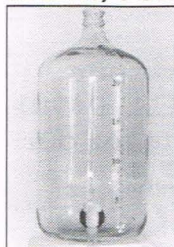
(800) 365-BREW

The Ultimate Personal Glass Fermentor

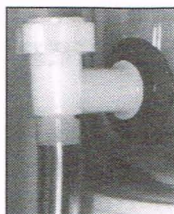
by



23 Litres/6 Gallons



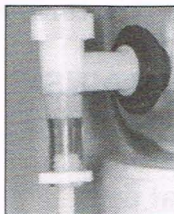
No More Siphoning!
Install the optional hose, open the bottom tap and rack.



Easy Cleaning!
Unscrew and remove the tap for a thorough cleaning.



The Personal Fermentor comes with a **Protective Tap Cap** to keep everything clean.



Optional Tap Adaptor for bottle filler.

U.S. Prices

Personal Fermentor:	\$39.95
2-foot length transfer hose:	\$3.95
Tap adaptor for filler:	\$5.95
Personal fermentor funnel:	\$8.95

*Shipping charges additional *VISA/MasterCard accepted

To Order: Tel: 1.819.669.2020
FAX: 1.819.643.2660

Distributor: Wine & Beer Club
335, Notre-Dame Street
Gatineau, Québec
Canada, J8P 1L3



Great Fermentations of Marin



87-Z Larkspur
San Rafael, CA 94901
Call, or Write for our
**FREE
CATALOG**

1-800-570-BEER

Barrier-bagged hops
and age dated yeast
assure you of the best
in custom made kits.
Our new Pub series
brings you :

Red Apple Ale
Oak Stout
Toasted Amber Ale
Chocolate Porter

BELGIAN GRAINS-
Biscuit, Cara-Pils, Cara--
Vienne, Cara-Munich,
Special B

Easy All-Grain
Brewing with the
SUPER-TUN
Insulated Mashing,
Sparging, Lautering
Tun
5 Gallon; \$99.95
10 Gallon; \$119.95



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



Why wash *one* bottle... When you can wash *two*? Introducing The "**DOUBLE BLAST**" Bottle Washer

Saves you clean-up time by
rinsing *two* bottles at once.

Eliminates stress on faucets and
'water-hammer' damage to pipes.

Rinse your racking tubes /
filters etc. by connecting your
siphon hose to the carboy nozzle.

Guaranteed!

*Wholesale only. Contact Fermtech
for your nearest distributor.*

*Ask about "The Siphon Valve",
the #1 selling springless bottle
filler in North America.*

Reinforced hose connects
to laundry tub faucet

No pipe
or faucet
damage

Includes third
nozzle for
carboys

Press to rinse
Lift to stop

Sits flat in
tub basin

Fermtech

81 Avondale Ave. S. Waterloo, Ontario N2L 2C1
(519) 570-2163 Fax: (519) 570-0632



SPONSORS

American Homebrewers Association

DIAMOND

Brew City Supplies — Milwaukee, Wis.
 Stephen Argilan Jr. — Andrews AFB, Md.
 Daniel Bangs — Enid, Okla.
 Tim Beauchot — Albion, Ind.
 Bill Benjamin — Benjamin Machine Products — Modesto, Calif.
 Thomas Bergman — Jefferson, Md.
 Jerry Black — Springfield, Ohio
 Jeff Bonner — Kennewick, Wash.
 Alan Burkholder — Columbus, Ohio
 Ben Campbell — Rockford, Ill.
 A. J. Capone — South Plainfield, N.J.
 Jacob Chachkes — Atlanta, Ga.
 Calvin Chiang — Rochester, N.Y.
 Edward Corn — Agua Dulce, Calif.
 Carman E. Davis — Nemrac Marketing Co — Cuyahoga Falls, Ohio
 Tim Deck — McEwen, Tenn.
 Rick Deering — Gurnee, Ill.
 Michael Demchak — Rocky River, Ohio
 Steve Dempsey — Fort Collins, Colo.
 Robert Devine — Remond, Wash.
 Mark Dills — Portland, Ore.
 Randy Drvinga — Chandler, Ariz.
 Karl Josef Eden — Sudwerk Privat Brauerei — Hübsch — Davis, Calif.
 Arthur R. Eldridge — Esco, Minn.
 J. Rob Ellnor IV — New Albany, Ind.
 Robert Elmer — Portsmouth, R.I.
 Douglas Faynor — Woodburn, Ore.
 Lee Fellenberg — Tacoma, Wash.
 Matthew Floyd — Bardstow, Ky.
 Kevin L. Fluharty — Elgin, Ill.
 Bob Frank — The Flying Barrel — Frederick, Md.
 Roy Fuentes — San Antonio, Texas
 Mindy & Ross P. Goeres — Europe
 Alan A. Harlow — Reading, Mass.
 Stuart Harms — Portland, Ore.
 James Haughey — Silver Spring, Md.
 Tom Hildebrandt — Greensboro, N.C.
 Marc & Susan Hinck — Andrews AFB, Md.
 Gary E. Huff — Gresham, Ore.
 James Hendrik Huiskamp — Keokuk, Iowa
 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.
 Ron Konecke — Wyoming, Pa.
 Brian Kotso — Carefree, Ariz.
 Thomas C. Kryzer — Wichita, Kan.
 Andrew La Morte — Littleton, Colo.
 Steven Landry — Princeton, N.J.
 Daniel Litwin — Blue-n-Gold Brewing — Potomac, Md.
 Charles Lutz — Walkkill, N.Y.
 Frank Mataitis — Owings Mills, Md.
 Paul McClure — Uncasville, Conn.
 Dan McLaughlin — Nesconset, N.Y.
 Kevin McKee — Oceanport, N.J.
 Robert K. Morris — Toledo, Ohio
 Gordon L. Olson — Los Alamos, N.M.
 Bill Pfeiffer — Cork and Cap — Brighton, Mich.
 Robert Pocklington — Houston, Texas
 Mark Powell — San Angelo, Texas
 Frank Pruyn — Lakeville, Mass.
 Dan Robison — Salt Lake City, Utah
 SKid Rohe — Cockeysville, Md.
 Richard P. Ross — Woburn, Mass.
 John Roswick — Bismarck, N.D.
 Daniel J. Ryan — Fremont, Calif.
 Michael Schiavone — Lewiston, N.Y.
 Edward R. Schill — Chicago, Ill.
 John D. Sievers — Towson, Md.
 Tom Smith — Columbia, Mo.
 Eric D. Steele — Milwaukee, Wis.
 James A. Steenburgh — Rochester, Minn.
 Richard Trough — Sulphur, La.
 D. L. Van Dame — Churubusco, Ind.
 Gary S. Vanderlinden — Sunnyvale, Calif.
 Adam Walker — Long Beach, Calif.
 Bud Wallace — Merced, Calif.

Wade Wallinger — Pascagoula, Miss.
 Robert J. Weber Jr. — Pacific
 Ed Westemeier — Cincinnati, Ohio
 Donald Wood — Stanton, Calif.
 Kent Woodmansey — Pierre, S.D.
 Lowell D. Yeager — Norwich, Conn.

GOLD

Yeast Brew Unlimited — San Francisco, 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 — Middleton, Wis.
 Bernhard Cordts — Ipswich, Mass.
 Peter Dakin — Kanata, Ontario, Canada
 Mark Gasser — Olney, Md.
 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.
 W.E. Pinckert — Capistrano Beach, Calif.
 Ian & Jake Quinn — Glen Echo, Md.
 Michel Rousseau — Distrivin Ltd — Longueuil, Quebec, Canada
 Edward G. Schultz — Mountain View, Calif.
 Glen Sprouse — Roswell, Ga.
 Craig Starr — Atkinson, N.H.
 Brian Wurst — Lombard, Ill.

PEWTER

Stoppel & Associates — Colorado Springs, Colo.
 West Seattle Homebrew Supply — Seattle, Wash.
 Bucket of Suds — Belmont, Calif.
 Chris Ahlberg — Greenwich, Conn.
 Cary Allard — Pacific Myles Altimus — Richmond, Va.
 H. Clark Anderson — Santa Fe, N.M.
 Charles T. Babcock — Thousand Oaks, Calif.
 John Balock — Melstone, Mont.
 Dominic Bender — Kilauea, Hawaii
 Thomas Bischoff Sr. — Wood-Ridge, N.J.
 Greg Bueghly — Homebrew Outlet — North Highland, Calif.
 Hugh Bynum — Portland, Ore.
 Walter Carey — Cos Cob, Conn.
 Michael Chronister — Norristown, Pa.
 Peter Cocchia — Homedade Libations — South Norwalk, Conn.
 David Cokely — Lee's Summit, Mo.
 John Conner — Colorado Springs, Colo.
 Hector Contreras — Miami, Fla.
 Jeff Craggs — Granite Falls, Wash.
 Mark Cunningham — San Francisco, Calif.
 Scott Day — Brew & Grow — Livonia, Mich.
 Tim Decker — Foster City, Calif.
 Thomas DiDominic — Admore, Pa.
 James K. Elwell — Salt Lake City, Utah
 Scott Fast — Santa Clara, Calif.
 Dan Flynn — Germantown, Md.
 Dana Graves — Coventry, R.I.
 Thomas M. Haber — Livonia, Mich.
 Dan Hartley — Orangevale, Calif.
 John E. Irvine — Herndon, Va.
 Gregory Jevyak — Florissant, Mo.
 John Kelbert — Sunnyvale, Calif.
 Scott Kilde — San Diego, Calif.
 Tony LaMonte — Beverly, Mass.
 Eric Lindahl — Nolensville, Tenn.
 Jeffrey Macomber — Cary, N.C.
 William K. Malkames Esq. — Allentown, Pa.
 James E. Mankovich — Boulder, Colo.
 Joel Masters — Cayce, S.C.
 Bill McKinless — The Home Brewery — Bogota, N.J.

Patrick Miles — Stevens Point, Wis.
 Carlo Milono — San Francisco, Calif.
 Chris L. Monnet — Houston, Texas
 Michael Murphy — Fresno, Calif.
 Charles Murray — Golden, Colo.
 Trevor Nicol — Alex's Corks & Kegs — Mississauga, Ontario, Canada
 Michael L. Niemann — Angleton, Texas
 Mike O'Brien — Pico Brewing Systems — Ypsilanti, Mich.
 Michael Oliver — Lake Oswego, Ore.
 Jeffrey Orlin — Rosindale, Mass.
 John Oszaica — Honolulu, Hawaii
 Paul J. Palek — Marietta, Ga.
 Dale Pedersen — Europe
 Bob Petersen — Save-U-More Foods — Ames, Iowa
 Marc & Debi Prince — Haku, Hawaii
 Pat & Gail Propson — Madison, Wis.
 Franklin Radcliffe — Henderson, Nev.
 Robert Lee Robinson — ABC Beverage Store — Lilburn, Ga.
 Laura Roche — Atlanta, Ga.
 T. C. Roffey — Lompoc, Calif.
 Allen Rudolph — Redwood City, Calif.
 Tru Samuels, M.D. — Fort Washington, Pa.
 Stuart Scarborough — Frederick, Md.
 Daniel Scherber — Winter Park, Fla.
 Kirk Schmidt — Lancaster, N.H.
 Randell L. Sedlacek — Roeland Park, Kan.
 Gordon Sheppard — Vienna, Va.
 Charles Silver — Wall, N.J.
 Stephen Sims — Campbelltown, Australia
 Kristin Skoog — Manitou Springs, Colo.
 Alex Skripnik — Bloomington, Minn.
 Linda K. Smith — West Palm Beach, Fla.
 Michael B. Smith — Huntsville, Ala.
 Mark Snyder — St. Paul, Minn.
 Anthony Stein — La Canada, Calif.
 Michael C. Sukitch — Yardley, Pa.
 Stuart Sutton — Fayetteville, N.Y.
 Craig Swanston — Winnipeg, Manitoba, Canada
 David Teckam — North Highlands, Calif.
 Neil Tolciss — Brooklyn, N.Y.
 Julian Valles — Torrimar, Puerto Rico
 Jeffrey T. Waalkes — Whitefish Bay, Wis.
 Ed Watkins, M.D. — Columbus, Ind.
 Thomas Weeks — Denville, N.J.
 Dave Whitcomb — Ventura, Calif.
 Al Wojcik — Cicero, Ill.

PAPER

Bootleg Brew — Thibodeaux, La.
 Brewskis — Naples, Fla.
 Thistle Grove Industries — Johnstown, Colo.
 Ray Alford — Tucson, Ariz.
 Edward Allen — New Kent, Va.
 Larry P. Allen — Doc's Brew — Temecula, Calif.
 Tanner Andrews — DeLand, Fla.
 Tremaine Atkinson — North Beach Brewing Co. — San Francisco, Calif.
 Ed & Joan Basham — The Winemaker Shop — Fort Worth, Texas
 Gary H. Baum — O'Baum's Brewery — Agoura, Calif.
 Joel C. Bieler — Whitehall, Pa.
 David Birkhead — Oakland, Calif.
 Mike Booher — Horse Cave, Ky.
 David Brown — Royal Oak, Mich.
 A. Fritz Carlson — Waterbury, Conn.
 Simon Patrick Carr — Silver Spring, Md.
 Andrew Castle — Chicago, Ill.
 Paul Cierplik — Lexington, Ky.
 Rob Clark — Hartland, Mich.
 Andrew Cooper — Columbia, S.C.
 Matthew Cooper — Courtland, Va.
 James Cox — Ashland, Mass.
 C. Louis Deibel — Springfield, Va.
 Thomas C. Edmier — Glendale Heights, Ill.
 Michael Edwards — Minneapolis, Minn.
 Erik Erichsen — Glendale, Calif.
 Vincent Farone — Murfreesboro, Tenn.
 John Fix — Cornell's Hardware — Eastchester, N.Y.
 Gregory Franck — Buffalo Grove, Ill.
 Allen Freeberg — El Paso, Texas
 Bill Greiner — Sunland, Calif.
 John Griffith — Boring, Ore.
 Jon Hebert — Holyoke, Mass.
 Robert Hutchinson — San Clemente, Calif.
 William E. James — Chrisman, Ill.
 Frank Jenkins — North Beach, Md.
 Dave Jensen — Topsham, Maine
 Scott Johnston — Nashville, Tenn.
 Stephen Keller — Tallahassee, Fla.
 David Kern — Poway, Calif.
 Ken L. Knoff Jr. — Racine, Wis.
 Tim Koich — North Star — Sandpoint, Idaho
 Ron Kribbs — Naples, Fla.
 Bill Lacinak — Shreveport, La.
 Geoffrey Larson — Alaskan Brewing & Bottling Co. — Juneau, Alaska
 Mac Lee — Hood River, Ore.
 Kevin Leicht — Toronto, Ontario, Canada
 Adam P. Lewis — Portland, Ore.
 Lloyd W. Lietz — Europe
 Jeff Look — Gaithersburg, Md.
 Robert MacLean — Warburg, Alberta, Canada
 Dale Manos — Atlanta, Ga.
 Mark A. Marnell — Kingston, N.Y.
 Malcolm McGinnis — San Francisco, Calif.
 Ed Megaw — Spring Hill, Kan.
 Jeff Michalski — St. Louis, Mo.
 Eric Munger — Salem, Ore.
 Thomas Murrill — Fort Wayne, Ind.
 Chris Neikirk — Norfolk, Va.
 Richard J. Nyberg Jr. — St. Francisville, La.
 Leslie Oliver — Santa Barbara, Calif.
 Douglas Osborn — Valencia, Calif.
 Thomas Oxley — Lawrence, Kan.
 Thomas Parrish — Parrish Plastics Corp. — Pittsburgh, Pa.
 Frank Pedroni — Concord, Calif.
 Tom Petzold — Grand Rapids, Mich.
 Tom Pike Jr. — Plainfield, Conn.
 Tom Porter — Coral, Mich.
 Patrick Prendergast — Palo Alto, Calif.
 Terry Price — Durham, N.H.
 Ewan Gareth David Pritchard — Apex, N.C.
 Bradley Reeg — Chicago, Ill.
 Mike Riddle — Marin Society of Homebrewers — San Rafael, Calif.
 Jim Roe & Susan Yount — Seattle, Wash.
 Fred Seybold — Aurora, Colo.
 Thomas B. Shirkness — Fairless Hills, Pa.
 W.E. Shook — Waynesboro, Va.
 T.P. Songdaroth — Tucson, Ariz.
 Dan St. George — Marblehead, Mass.
 Stephen Stretmater — Germantown, Md.
 Richard Sturtz — Edina, Minn.
 Michael Tanji — Mililani, Hawaii
 Ed Temple — Ewing Park — Huntington, Texas
 Dana Tessicini — Milford, Mass.
 Brian D. Tom — Brightwood, Ore.
 Bill Toothaker — Amber Waves Homebrew Supply — Rochester, N.H.
 Pete Vickers — Seattle, Wash.
 Scott & Sheila Walker — Wahiawa, Hawaii
 Wayne Wallgren — Dallas, Texas
 Allen Ward — Aurora, Colo.
 Daniel Webb — Heartland Home Brew Supply — Jewett, Ill.
 Don B. Webb — Seattle, Wash.
 Edward B. Wells — Grand Haven, Mich.
 Jeffrey Whitehead — Keyser, W.Va.
 Frank White — Lincoln, R.I.
 David & Cindy Wolner — Willimantic, Conn.
 Craig Woodruff — Annapolis, Md.
 Mark Zunkowski — Eureka, Calif.

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

Published by Brewers
Publications

VICTORY BEER RECIPES, America's Best Homebrew

Enjoy 128 award-winning recipes from the American Homebrewers Association® National Homebrew Competitions, 1989 through 1993.

Victory Beer Recipes picks up where *Winners Circle* leaves off!

Victory Beer Recipes, sequel to the homebrew hit *Winners Circle* (Brewers Publications, 1989), will provide you with hours of homebrewing challenge and entertainment.

- Brew extract, grain and extract, and all-grain recipes
- Enjoy 24 categories of lager, ale, mead and mixed-style beers
- Read judges' tasting notes

"This book takes homebrewing to the next level! Not only does it list an extremely wide variety of styles with detailed recipes and procedures, but these are award-winning formulas! If only I had this book 15 years ago."

Pete Slosberg, founder of Pete's Brewing Co.

Order your copy today for only \$11.95 (\$10.15 for AHA members) plus \$4 P&H. To order, contact Brewers Publications at PO Box 1510, Boulder, CO 80306-1510; (303) 546-6514, FAX (303) 447-2825.

Satisfaction Guaranteed.

Foreword by Pete Slosberg, founder of Pete's Brewing Co.



American Homebrewers Association®

Rauchbier Roundup

Stoke the brewing fire and gather 'round to chose your club's best rauchbier for the Rauchbier Roundup Club-Only Competition. Entries are due May 22, 1995. Three bottles per entry, one entry per club. Please use the AHA Sanctioned Competition entry form and include the \$5 entry fee. **All clubs registered with the AHA are eligible and encouraged to participate.**

Send all entries to :
Ithaca Brewers Union
c/o Scott Bickham
C-15 Clark Hall
Cornell University
Ithaca, NY 14853



Questions?, Contact
James Spence at
(303) 447-0816, Ext. 121, or on
CompuServe at 70740,1107.

zym 18

CLUB-ONLY COMPETITION

We're Looking for a Few Good Palates

It's a *brewtal* job, but someone has to judge and sample dozens of homebrewed beers in every imaginable style. As the art of homebrewing continues to grow, so does the demand for beer judges. If you have a love of beer and an understanding of beer flavors, styles and techniques, then the **Beer Judge Certification Program** is for you!

Sponsored by the American Homebrewers Association® and the Home Wine and Beer Trade Association, the Beer Judge Certification Program is your opportunity to join the exciting world of beer judges! If you have what it takes, contact the AHA, PO Box 1679, Boulder, CO 80306-1679, or call (303) 447-0816, FAX (303) 447-2825.



zym 18

HOMEBREW COOKING

WITH THE BREWGAL GOURMET

Candy Schermerhorn

Homebrewed Picnic Treats

Springtime, when winter's frostbitten fingers retreat from the warming earth and life's cycle begins anew. A desire to rejoice in this rebirth of life endures, as ceaseless as the seasons. Since humans began brewing they have observed the arrival of spring with feasting and drinking celebrations.

Even with today's hectic lifestyle, a picnic is perfect for observing this ritual, particularly for brewers, who usually have a ready selection of beer after the long brewing season.

My favorite picnic foods are those that travel with little fuss and do not immediately spoil if left out of the cooler. Ideally, there should be only two or three "cooked" items augmented by a favorite salad (potato or pasta), fresh fruits, spring vegetables, a selection of cheeses and lots of marvelous homebrew. Brewers Turnovers are a perfect example of such fare. These simple flaky, golden-baked pastries are filled with beer-doused stew and are easily eaten out-of-hand. If the

stew and pastry dough are made ahead, the turnovers themselves can be assembled in less than an hour. They are incredible when accompanied by homebrewed Maibock!

For a memorable finale, cake has always been a favorite. However, a frosted layer cake may not be the best choice. Instead, try moist Apple Streusel Cake studded with chunks of fresh apples and served right out of the pan. Of course, a cake this good is the perfect excuse to open a few cherished bottles of last fall's sparkling cider.

This picnic is a sure cure for cabin fever, so dust off some homebrews and enjoy this mouthwatering menu.

BREWERS TURNOVERS

Filling

(a.k.a. Marvelous Thick Beef Stew)

Enough for six turnovers

- 1 1/2 lb boneless beef, cut into 1-inch cubes
- 1/2 cup flour seasoned with 1 teaspoon each salt, pepper and paprika
- 3 tbsp oil
- 1 large onion, chopped
- 1 large clove garlic, minced
- 2 potatoes, diced
- 1 large turnip, peeled and diced
- 1 carrot, chopped
- 1 tsp thyme
- 1 tsp marjoram
- 1 bay leaf
- 1 1/2 cups brown ale

(1) Lightly toss meat in the flour and shake off excess. In a heavy non-stick skillet heat oil and brown meat. Add the onions and continue to sauté until translucent.

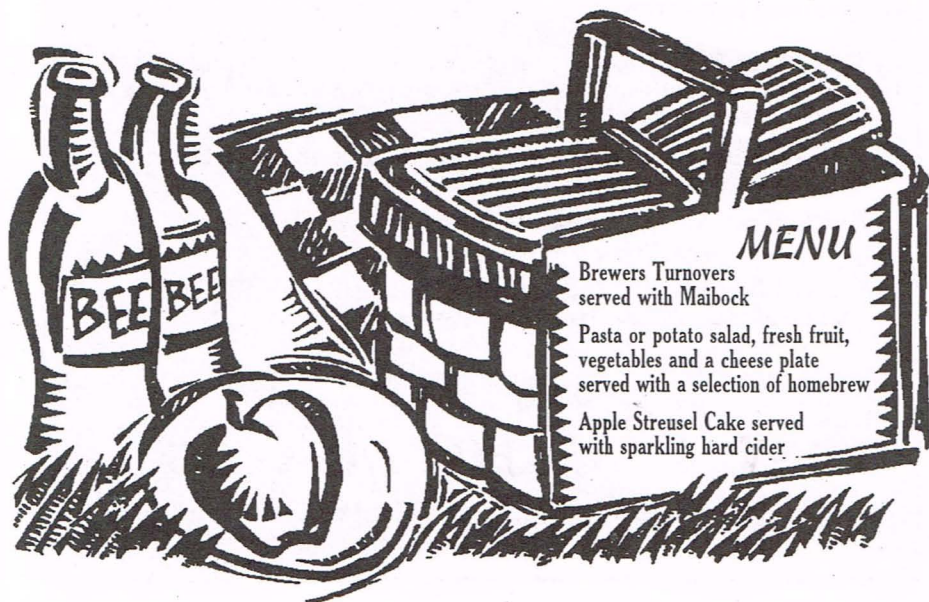
(2) Add garlic, potatoes, turnip, carrot, herbs and ale. Cook slowly for two hours or until meat is tender and sauce is thick. Season with salt and pepper and remove bay leaf.

Pastry

Makes six eight-inch turnovers

- 4 1/2 cups all-purpose flour
- 1 tsp salt
- 1 1/2 tsp dried thyme
- 1/2 tsp ground black pepper
- 1 cup cold shortening or margarine
- 1/3 cup each (approximately) ice cold pale ale and water

5 to 6 cups (approximately) chilled filling
cooking parchment



(1) Combine flour, salt, thyme and pepper. Cut in shortening until crumbly. While stirring, slowly add enough beer and water for dough to pull together into a loose ball.

(2) Gently knead 25 strokes, cover and refrigerate two hours. Cut the dough into sixths. Roll each piece into a one-eighth-inch-thick circle and chill until ready to fill.

(3) Place two-thirds to 1 cup of chilled filling on half a dough circle, taking care not to touch edges. Lightly moisten half the dough edge with water. Fold to make a turnover, pinch, roll and lightly crimp edges together to seal. Repeat with the remaining dough. Refrigerate until ready to bake.

(4) Preheat oven to 425 degrees F (218 degrees C). Cut a small vent in each turnover and place on a parchment-lined baking sheet. Bake for 15 to 20 minutes or until lightly browned. Lower the oven to 275 degrees F (135 degrees C) and continue baking for 20 minutes.

Note: The turnovers are equally delicious made with pork, turkey or an all-vegetable mix. They can be made ahead and frozen raw. Simply bake an additional five to 10 minutes during the browning stage and an additional 20 minutes after lowering the oven temperature.

APPLE STREUSEL CAKE

- 1/2 cup vegetable oil
- 2 cups granulated sugar
- 3 extra-large eggs
- 1/2 cup Maibock
- 1/3 cup applesauce
- 2 cups unbleached flour
- 1 tsp cinnamon
- 1 tsp Chinese five-spice powder (or an additional teaspoon of cinnamon and ginger)
- 1 tsp baking soda, sifted (1/2 tsp for high altitude)
- 1 tsp salt
- 4 cups peeled, cored and chopped Granny Smith apples
- 2 tbsp flour
- 1 1/2 cups toasted walnuts, chopped coarsely

Crumb Topping


- 1/4 cup flour
- 1/2 cup firmly packed brown sugar
- 1 1/2 tsp cinnamon
- 4 tbsp butter

(1) Beat the first five cake ingredients for three minutes. Stir in flour, cinnamon, five-spice powder, baking soda and salt. Beat an additional minute.

(2) Toss apples with two tablespoons flour. Fold apples and nuts into batter until thoroughly distributed. Make the crumb topping in a separate bowl by combining flour, brown sugar and cinnamon. Cut in the butter until crumbly.

(3) Pour the batter into a greased and floured 9-by-13-inch (or 12-inch round) pan.

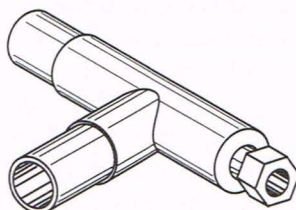
Sprinkle with crumb topping. Bake at 350 degrees F (177 degrees C) 45 minutes or until a cake tester comes out clean. Cool in the pan and cake is ready for traveling or serving.

Candy Schermerhorn is a culinary consultant and televised cooking personality in the Phoenix, Ariz., area. Candy will be featured on "Cookin' USA" on The Nashville Network March 16 in all U.S. television markets. She is author of the award-winning *Great American Beer Cookbook* (Brewers Publications, 1993), which will be featured on the show. 

I N T R O D U C I N G

PHILLCHILL PHITTINGS

Build your own counterflow wort chiller. You supply the copper tube and garden hose, we supply the hard part—the fittings. No soldering is required for assembly. Get your beer fermenting faster!

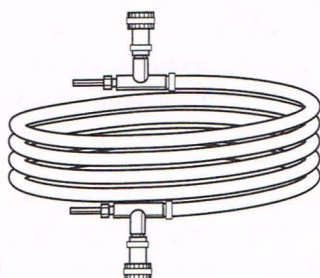


You get:

2 Fittings

4 Hose
Clamps

Complete
Instructions



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

The Philmill— The best, most versatile mill on the market for the price. High-quality crush, easy to motorize. Simple to adjust, 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.

Check with your local homebrew shop. Dealer inquiries welcome.

LISTERMANN MFG. CO.

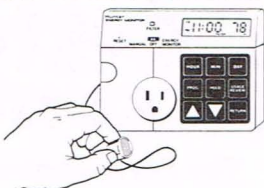
1776 Mentor Ave., Norwood, OH 45212 • 513/731-1130

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

REFRIGERATOR/FREEZER THERMOSTAT

DIGITAL MICRO-ELECTRONIC CONTROLLER

- A must for homebrewers!
- Made by Hunter[®]
- Satisfaction Guaranteed!
- Great gift!
- \$34.95, plus \$4.50 S & H
(CA residence add \$2.88 tax)



Simply plug your spare refrigerator or freezer into the controller, put temperature sensor in refrigerator or freezer, set desired temperature and RELAX!



Send check or money order to:
Tiger Tail Productions
43345 47th St. West
Lancaster, CA 93536
(805) 943-6238

Simple Installation
Just plug it in.



Custom Labels



Have your own custom labels with your favorite photograph in black and white. When you serve your homebrew or give it as a gift, your custom label will proudly proclaim your own product.

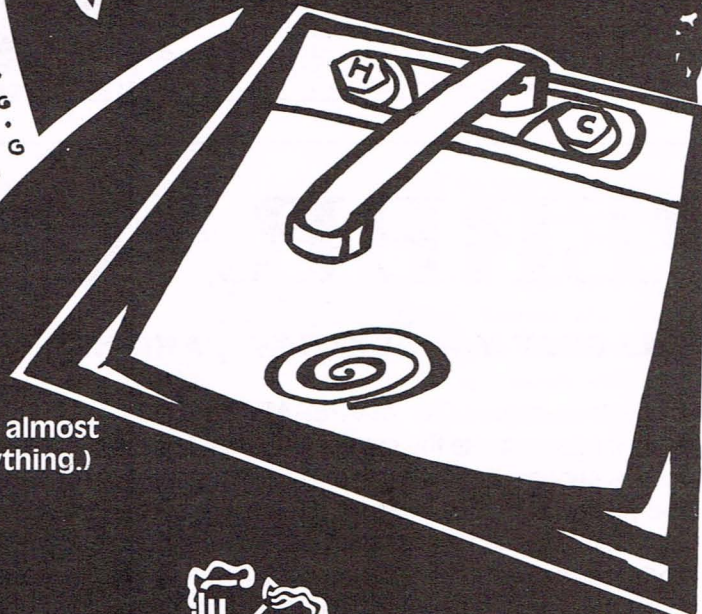
The large 4 by 3 1/3 inch gummed labels apply easily. \$39.95 per hundred labels. Semi-custom (choose from our photos) labels for \$10.95 per hundred.

Call NOW for a
FREE Sample and Design Kit!
1-800-232-LABEL

Nuttings Lake Publishing
P.O. Box 203-F, 604 Middlesex Turnpike
Nutting Lake, MA 01865-0203

Everything

for your shop



(well, almost everything.)



234 SE 12th Portland, OR 97421
503 232-8793

"Call us anyway."
1-800-735-8793

Beer and wine making supplies
Wholesale inquiries only

Serving the Great Northwest
for over 40 years!



Now Shipping Nationwide!!!

Complete selection of equipment and supplies for Home Brewing & Winemaking. Full line of malt extracts, grains, hops (flowers & pellets), liquid & dry yeasts.

QUANTITY DISCOUNTS

We specialize in
FAST & FRIENDLY CUSTOMER SERVICE

Call or write for our catalog

(Free West of Mississippi, \$2.50 East of Mississippi)

JIM'S HOME BREW SUPPLY

2619 North Division, Spokane, WA 99207

509 / 328-4850

24 Hour Order Phone

Relax...

The Market Basket

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

**\$40⁰⁰
VALUE**

For Only
\$19⁹⁵
+S&H

HOP SAMPLER

Eight Ounces Each of:

German Hersbrucker • Cascade • Brewer's Gold
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

ON
SALE!

\$49⁰⁰
plus S & H

Free Catalog / Fast Service

Call Toll Free

1-800-824-5562

Local calls (414) 783-5233

24 Hr. Fax (414) 783-5203

14835 W. Lisbon Road

Brookfield, WI 53005-1510



A higher degree of control.

Now
Available
in Celsius

The Fermometer™!

This precision liquid crystal thermometer provides a convenient way to monitor pitching and fermentation temperatures. It's self-adhering, water-resistant and provides a sanitary alternative to conventional immersion thermometers.

Stop worrying about contamination and stuck fermentations! Take control of the flavor of your beer!

**Check at your favorite
home brew shop.**



Tkach Enterprises

P.O. Box 344

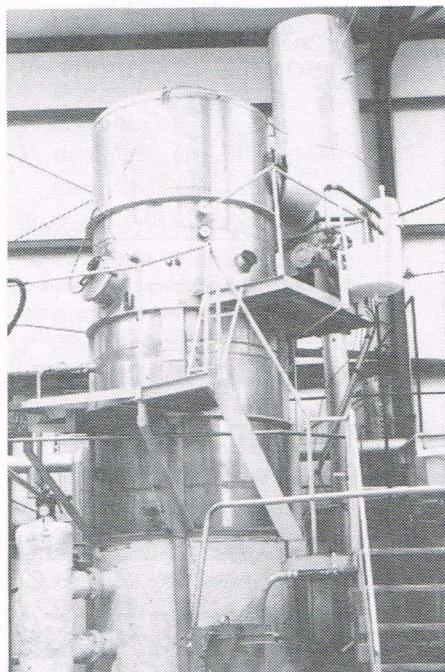
Castle Rock, CO, 80104

(303) 660-2297

Dealer Inquiries Invited



SUPERBRÄU



THE BEST MALT EXTRACT, AND HERE'S WHY:

This is our unique LOW TEMPERATURE EVAPORATOR. It takes 3 times longer to make the extract and uses 4 times the energy. So why did we choose this type of unit? Because it evaporates at 128°F. The multi-stage units used by everyone else process at up to 177°. Our Light Malt is the lightest color of any pure malt extract in the world and has no off-flavors from processing. We use only a special LOW PROTEIN 2-ROW malted barley in our malt extracts.

Our complete ingredient mixes are a concentrated FRESH-hopped wort. In addition, each can contains FRESH, HIGH-ALPHA AROMA HOP PELLETS so that the customer can make an infinite variety of beer simply by extending the boil, from American Light through European Pilsner, all the way to Stout.

NEW!!

NOW AVAILABLE IN 4 LB. CANS AND DRUMS.

Retailers and brewpubs only.

Specialty Products Intl. • Box 784 Chapel Hill, NC 27514 • (919) 929-8848 phone/fax

TIPS & GADGETS

Bob Jones

Pseudo Beer Engine

In fall 1993 my wife and I spent three weeks vacationing in England, Wales and Scotland. We rented a car and drove more than 2,000 miles exploring historical sites and beautiful countryside. As you might guess, beer was pretty high on my agenda as well. We visited some well-known brewing establishments: Samuel Smith's in Tadcaster, Young's in London and Caledonian in Edinburgh, to name a few. We spent our days sightseeing and late afternoons and evenings relaxing in famous pubs.

My favorite British beers are low-gravity, generally 1.035 to 1.048 original gravity. The best are cask-conditioned, brilliant in clarity and usually very fresh. They have very low carbonation and are served with a beautiful creamy head in Central and Northern England. The secret to the creamy head is the beer engine, which pulls the beer from the cask stored in the cellar below the bar to your glass.

The beer engine must move the beer without adding gas yet create a creamy head. An adjustable spigot gadget called a sparkler restricts the flow of beer into the glass, causing air to be whipped into the beer and a head to be produced without CO₂.

When I returned home I set out to recreate one of those English-style ales I had fallen in love with. After some trial and error, I came up with a sparkler gadget similar to the one in Figure 1 and Photo 1. I attached this hand-held assembly to a hose and connected it to my keg to dispense a beer. I got a glass full of foam, but I shut off the tap and the foam quickly turned to liquid at the bottom and left about a two-inch thick head on top of the beer. Anyone who has ever watched a Guinness stout as it settles will know exactly what I'm talking about.

I took the keg and the Pseudo Beer Engine to my homebrew club,

the Draught Board, for our annual Christmas party, and the beer went pretty fast. Everyone had to see and taste the beer from the gadget. My highest compliments came from a English-born friend, Tony Burke, who kept coming back for more. He said it was very close to the real thing.

Materials List

- 1 1/4-inch ball valve with 1/4-inch female npt fittings, stainless steel or brass
- 1 1/4-inch male npt to 1/4-inch hose barb
- 1 1/4-inch male npt to 1/4-inch copper tubing adapter
- 1 4-inch piece of 1/4-inch copper tubing
- 1 1/4-inch copper cap
- 1 1/4-inch polyvinyl chloride hose about 3 to 4 feet long
- 1 liquid disconnect for keg
- 1 drill bit, about 0.020 inches in diameter

Tools required for assembly

- Propane torch for soldering
- Solder. Make sure you use lead-free solder. I use 96 percent tin/4 percent silver.
- Miscellaneous wrenches for assembly

Assembly steps

- (1) Drill five to six 0.020-inch holes in the copper end cap.
- (2) Bend the piece of copper tubing into a smooth 90-degree bend and solder the copper

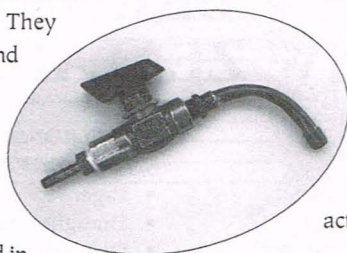
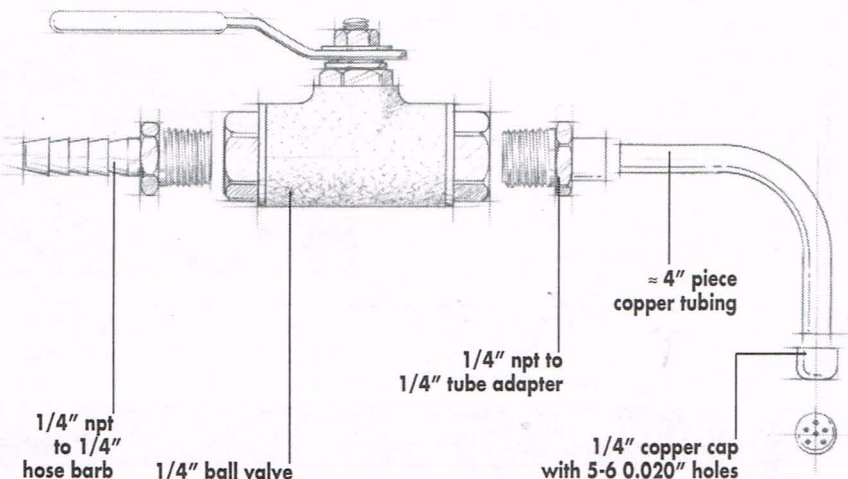


PHOTO 1

do Beer Engine to my homebrew club,

FIGURE 1. Pseudo Beer Engine



end cap onto one end and the male national pipe thread adapter onto the other end.

(3) Assemble the Pseudo Beer Engine by screwing the hose barb into one end of the ball valve and the copper tubing assembly into the other end of the valve.

(4) Attach the PVC hose and the liquid disconnect.


Using the Pseudo Beer Engine

It is important to start out with an uncarbonated or undercarbonated beer. If you dispense a beer that has previously been carbonated, you will have a foam generator. Once a beer has been carbonated it is very difficult to de-carbonate it. Apply about 2 to 3 psi of CO₂ to the keg. Point the Pseudo Beer Engine into your glass and open the valve. When the foam reaches the top of the glass, you can close the valve down to a slow trickle to add liquid without adding foam.

Keep about 2 to 3 psi of CO₂ on the beer all the time and there really won't be enough CO₂ buildup to adversely affect dispensing. The key here is to have the pressure high enough to push the beer through the small holes to create the head, but low enough to minimize the CO₂ buildup over time in the beer.

The holes will clog occasionally. To clean them you will have to back flush under hot water with the valve open and the liquid disconnect depressed.

If you are into tradition and can't afford to obtain a real English beer engine, you might give this Pseudo Beer Engine a try. It works well for me and has been fun to experiment with. Try splitting a 10-gallon batch, carbonate five gallons and leave the other half in a keg without gas for dispensing with the Pseudo Beer Engine. Serve side by side and note the differences. Good luck and have fun experimenting with a new dispensing tool for your beer.

Bob Jones is an electrical engineer working in laser fusion research. His brewing experience spans 15 years. Bob has written articles for *zymurgy* and presented papers at two AHA National Homebrewers Conferences. His brewing interests lean toward the technical, and his semi-automated high-tech homebrewery reflects this. 

It's Coming...

The Canadian BREW-ON-PREMISES concept is arriving 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, 16 states have approved BOP's without alcohol tax, 5 more are pending. Information at your fingertips, saving you months of legwork.



**MALT
PRODUCTS** CORPORATION

88 Market Street
Saddle Brook, NJ 07662
(800) 526-0180 Phone
(201) 845-0028 Fax
Joe Hickenbottom
VP Sales & Marketing

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



HopTech

homebrew
**The ~~hop~~ supplier
with a difference!**

We're not just hops anymore!

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 | • CO2 Extracted Hop Oils and Extracts |
| • Dry and Liquid Malt Extracts | • 100% Natural Fruit Flavors |
| • Over 19 Varieties of Hops | • Complete Line of Brewing Equipment |
| (Domestic and Imported) | • Mail-order and Retail Store (open Sundays!) |

Call for our free, highly informative catalog

Please allow 3-4 weeks for delivery.

HopTech

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

3015 Hopyard Rd. Suite E
Pleasanton, CA 94588

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

Located in the Hopyard
Village, at the corner of
Hopyard and Valley, next
to the HopYard Alehouse.

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



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



Quality Brewing Supplies from America's Heartland

Northwestern Liquid Malt Extract
Case of 12 / 3.3 lb. Unhopped

\$59.00

Available in the following types: Gold, Amber, Dark, Weizen

Call for Free Catalog of Home Brewing Supplies



The Malt Shop



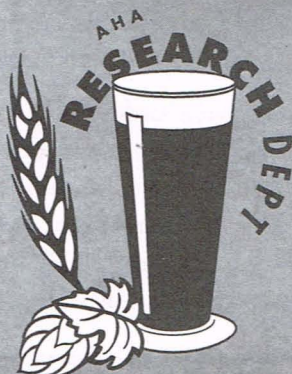
414-528-8697 • N3211 Highway S, Cascade, WI 53011 • 1(800)235-0026



MEAD SUCCESS:

INGREDIENTS,
PROCESSES
AND
TECHNIQUES

BY
DANIEL S.
McCONNELL, PH.D.,
AND
KENNETH D.
SCHRAMM



We love mead. It is the granddaddy of all fermented beverages, perhaps as old as the first dip of a hand into the fermented honey and rainwater in the crook of a tree. Yet here we are in the 1990s, going to tremendous lengths to buy the finest Belgian malts, the freshest imported hops and most obscure yeast strains for brewing beer, but brew our meads with supermarket honey of undetermined origin and unspecified, probably unspeakable, age.

The time has come to push meadmaking into the same analytic and scientific realm that beer brewers have applied to their craft for quite some time. We believe that by understanding honey, water and yeast in the same way we understand yeast, malt, water and hops, we can elevate mead to the same level of quality and public acceptance that high-quality beers enjoy.

Honey is a remarkable liquid. In addition to a rather complex mixture of sugars, honey contains many enzymes, proteins, organic compounds and trace minerals (White 1975). These interesting compounds, present in minute quantities, give honey its distinctive flavors and characteristic aromas. Many of these flavors and aromas lend a recognizable distinction to the finished mead. In producing a high-quality, complex beverage from honey, it is our aim to preserve as much of these distinctive flavors and aromas as is possible.

The subtle nature of honey allows a great deal of latitude in additives designed to enhance the character and complexity of mead. We have experimented with a large number of fruits, vegetables, herbs and spices added to basic mead with both overt and subtle results. The addition of various ingredients produces meads fitting into specific subcategories of the style. Show mead is defined as a beverage produced by the fermentation of honey alone. Nutrients and additives are allowed, but no additional spices, fruits or herbs. In traditional mead, small amounts of fruits, spices and herbs are allowed, but they must never overpower the honey flavor and aroma. These additives are to play a supportive role at or below the flavor threshold. Pyments, cysers and melomels are meads that include the addition of grapes, apples and other fruits, respectively. Metheglin is a mead to which spices have been added. Hippocras refers to a spiced pyment, and braggot is a beverage made from honey and malt sugars. Clearly there can be many subclasses of these categories, and therein lies the never-ending challenge of brewing mead.

The history of honey and meadmaking is long and rich, but unfortunately outside the scope of this article. *Brewing Mead, Wassail! In Mazers of Mead* (Brewers Publications, 1986) and *Making Mead* (Argus Books, 1984) are highly recommended books.

HONEY

We recommend the use of fresh honey that has undergone the least amount of processing possible. Commercially blended honey (commonly listed as clover or

Making Your First Mead

FIRST, PURCHASE OUTSTANDING HONEY. Single-source (varietal) honey lends a wonderful character and complexity to mead. Any local orchard can provide the name of their pollinator who can unlock a treasure trove of honey suppliers. A local farmers market also can be a good source of varietal honey. Specialty or organic food co-ops are good possibilities. Unique honey makes for unique mead, and freshness is of utmost importance. We've used orange blossom honey here because it is widely available and know it makes a very good mead, but substitute any high-quality honey you can find in your area.

DRY SPARKLING MEAD

Ingredients for 5 gal (19 L)

- 10 lb orange blossom honey (4.5 kg)
- 2 tsp yeast energizer (9.9 mL)
- 2 tsp yeast nutrient (9.9 mL)
- yeast starter culture
- 3/4 cup dextrose (113 g) and
- 3 tsp acid blend dissolved in boiling water (14.8 mL) (added at bottling)
- fresh yeast culture

MEDIUM-SWEET STILL MEAD

Ingredients for 5 gal (19 L)

- 12 1/2 to 15 lb orange blossom honey (5.67 to 6.8 kg)
- 2 tsp yeast energizer (9.9 mL)
- 2 tsp yeast nutrient (9.9 mL)
- yeast starter culture
- 4 tsp acid blend dissolved in boiling water (19.7 mL) (added at bottling)

Bring 4 gallons (15 liters) of water, yeast energizer and yeast nutrient to a boil with your immersion chiller in place. Add the honey, stirring well (crystallized honey may be liquefied by placing the honey in a pot of hot water). The temperature will drop to a suitable pasteurization temperature for the honey must. Allow this mixture to stand 10 minutes, then chill to 70 degrees F (21 degrees C). When cool, siphon to a sanitized carboy and pitch the yeast culture.

Allow to ferment at about 70 degrees F (21 degrees C) until fermentation has slowed considerably (four to six weeks). Rack to a secondary fermenter and let stand until clear. (Finnings may be added at this point to assist clarification, but we prefer to let the mead clarify naturally.) Natural clearing may take six to 12 months. Additional racking may expedite the process.

Final gravity is tremendously dependent not only on original gravity, but honey variety as well. A better indicator of complete fermentation is the absence of air lock activity and visual clarity of the mead. When you are satisfied that fermentation is complete, the mead may be bottled as a still mead or carbonated by adding one-half cup (118 mL) of honey or three-fourths cup (113 grams) of dextrose in 12 ounces (355 mL) of boiling water. It is important to include a fresh dose of yeast at bottling to ensure adequate carbonation.

wildflower) may be consistent, a good base honey for fruit meads, and offers repeatable results, but it is our contention that far more interest, variety and complexity can be achieved through the use of a pure varietal honey source. The USDA describes varietal honey as having a single blossom as its primary source, such as orange blossom, fireweed or tupelo. These honeys can then be blended by the meadmaker to adjust deficiencies, dilute unwanted constituents or add an amazing array of pleasing aroma and flavor combinations.

Honey that has been minimally processed by gentle heating (140 degrees F or 60 degrees C) typically will tend to crystallize in two to four months. This is not a problem for quality and using crystallized honey will not ruin the resulting mead. Honey is best stored at freezer temperatures to reduce enzymatic action and prevent degradation and color changes.

NUTRIENTS

Yeast requires nitrogen in the respiratory phase of growth. Because honey is a poor source of nitrogen, mead fermentations without adequate nutrition are notoriously slow. The addition of yeast nutrients (diammonium phosphate), yeast energizer or Fernald™ (diammonium phosphate, magnesium sulfate, yeast, folic acid, niacin, sodium pantothenate and thiamin), yeast hulls or yeast extract is very important to promote complete and rapid fermentation. These materials are readily available and their use is encouraged. We have been using both yeast nutrients and yeast energizer at two-fifths tablespoons per gallon (1.1 mL per liter) or two tablespoons (29.6 mL) in a five-gallon (19-liter) batch.

ACID

The use of acids such as citric, malic, tartaric, acid blend or lemon juice has been widely recommended to balance any residual sweetness in the finished mead. Some sweet-acid balance is desirable but optional. Furthermore, the addition of acids before fermentation can reduce the pH of the honey

must, resulting in a more sluggish fermentation. The pH of honey already is low (averaging 3.9), and because honey has very little buffering capacity, the pH drops to a range that slows yeast activity when fermentation commences. In our experience, adding acid after fermentation to a finished mead is a more reliable method to achieve the desired sweet-sour balance without compromising the health of the yeast.

TECHNIQUES

Among the more controversial topics in mead production is the treatment of honey must prior to fermentation. Treatments include boiling, sulfiting, pasteurization, sterile filtering and no treatment whatsoever. Many excellent texts provide step-by-step methods to produce high-quality meads (Morse 1980, Gayre 1986).

The method of sanitation most commonly advocated is boiling the must. While this technique does possess some distinct advantages as far as coagulation and subsequent protein removal are concerned, resulting in a more rapid clarification, the disadvantage is the loss of valuable aroma components driven off in the boil. A technique in which the must is briefly boiled, just long enough for the coagulated protein to be removed (boiling until the coagulated protein no longer forms at the surface) then rapidly chilled, offers a good compromise. This method is simple and straightforward; and we recommend a 15-minute boil to begin meadmakers.

The use of sodium metabisulfite, or Campden tablets, offers the distinct advantages of no heating and thus no aroma losses caused by volatilization. This method is

the fastest because the honey is simply mixed with water and then sulfited. Yeast is pitched the following day. Major disadvantages are that some people are sensitive to these compounds and proper adjustment of the addition requires both an accurate scale and pH meter. Also, sulfites tend to bleach fruit. Another disadvantage is that the proteins are not removed and the meads may require postfermentation fining to clarify.

When added to honey must, sodium or potassium metabisulfite releases sulfur dioxide (SO₂), which is the active ingredient responsible for stunning wild yeasts and microorganisms. The pH of the must affects the amount of free SO₂ present and should therefore be taken into account. Table 1 shows the recommended levels of SO₂ to treat white wine and these values may be directly substituted in a mead. Although these values represent the optimal levels of sulfite required to release an appropriate dose of SO₂, the authors tend to err on the short side of the equation, adding at most one Campden tablet per gallon (3.79 liters). Each Campden tablet contains 0.016 ounces (0.44 grams) of sulfite which releases approximately 50 ppm of SO₂, so for those who have an accurate balance the weight in grams of sodium or potassium metabisulfite may be calculated from the table.

Pasteurization is the treatment method we recommend. It is safer, faster, requires less equipment than other methods and offers a compromise between sanitation and loss of aroma compounds. A disadvantage is that the proteins are not removed and meads prepared this way may require fining to clarify. For the experimental batches made in preparation for this article we brought the water to a boil and added the honey, allowing the temperature to settle at about 160

TABLE 1. pH Effect on Sulfite Additions (Cox 1985)	Required ppm		Sulfite	
	pH of must	free SO ₂	grams per gallon	Campden tablets per gallon
	3.0	40	0.29	2/3
	3.2	60	0.59	1 1/3
	3.4	70	0.66	1 1/2
	3.6	80	0.73	1 2/3
	3.8	120	1.10	2 1/2

degrees F (71 degrees C). In retrospect, this may have been somewhat higher than needed because data suggest that as little as 22 minutes at 140 degrees F (60 degrees C) is sufficient to kill wild yeast (White 1966).

For those who have the equipment, ultrafiltration with a 50 kilo Dalton (standard unit for measuring protein) molecular weight cutoff membrane has shown some promise (Kime 1991). This technique simultaneously provides both sterile filtering and protein removal. This process resulted in mead that required less aging and was free of harshness.

FERMENTATION

A major issue in meadmaking is the notoriously long fermentation period. Fermentation rate is dependent to some extent on the honey variety, but through proper selection of yeast strains, agitation during fermentation, yeast nutrition and control of pH, one can dramatically increase the fermentation rate. Therein lies another controversy: clearly, commercial operations are interested in rapid fermentations for economic reasons. The economics of capital tied up in fermenters is not as problematic for homebrewers. More significant is the

effect on flavor. There are some who object to the flavor of mead that has had a long, slow fermentation on the yeast because of the taste associated with autolysis. Others find the taste familiar and similar to that of a fine *sur lie* Champagne in which the toasty-yeasty flavor of autolysis is a welcome and integral part of the taste profile. We prefer a more relaxed approach favoring long fermentations, although recently we have been experimenting with accelerated methods.

The single most significant factor affecting the rate of mead fermentation is yeast health. This may be ensured by providing adequate nutrients in the form of Yeast Energizer and yeast nutrients as well as careful monitoring of pH throughout fermentation. Most of the required nutrients are available in the commercial preparations, but additional nutrients such as biotin, pyridoxine and peptone may be helpful. Morse found that the most rapid fermentations were achieved when a balanced salt, buffer and nutrient additive was used (Morse 1975). Morse and Steinkraus report fermentations to 12 percent alcohol in less than two weeks by using one ounce per gallon (6.75 grams per liter) of Formula 1 and 0.03 ounces per gallon (0.25 grams per liter) of Formula 2 as shown on Table 2. It is important to note that most of these required ingredients can be found in commercially available yeast energizer.

The pH of honey is naturally low, and because it is poorly buffered the pH of must may drop during fermentation to a point at which the yeast is unable to ferment efficiently. The addition of a basic buffer helps greatly by holding the pH to between 3.7 and 4.0 throughout the course of fermentation. We have had success fermenting a mead to completion in two weeks simply by providing adequate nutrition (yeast energizer), saturating the cooled must with oxygen and adding calcium carbonate to hold the pH above 3.7. Other salts that may be used include potassium carbonate and potassium bicarbonate (Moorhead 1993). Care must be exercised because all of these salts can add a bitter-salty flavor if overused, so a minimum of these compounds is recommended. It is best to carefully monitor the pH on a daily basis with a pH meter (papers will not provide the needed accuracy) and add just enough CaCO_3 to raise the pH to the desired range.

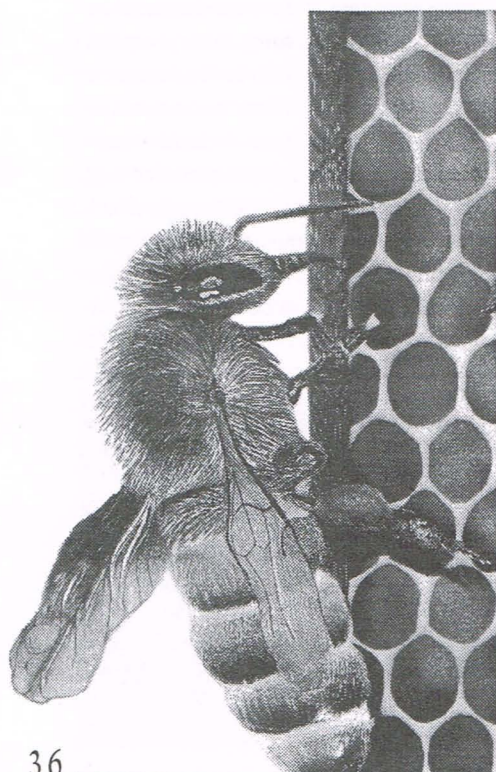
TABLE 2. Nutrient Mixtures for Mead Fermentations

Formula 1	
ammonium sulfate	1.00 g
K_3PO_4	0.50 g
MgCl_2	0.20 g
NaHSO_4	0.05 g
citric acid	2.53 g
sodium citrate	2.47 g
Formula 2	
biotin	0.05 mg
pyridoxine	1.00 mg
mesoinositol	7.50 mg
calcium	10.00 mg
pantothenate thiamin	20.00 mg
peptone	100.00 mg
ammonium sulfate	861.45 mg

YEAST

A large variety of yeast is now available to the small-scale meadmaker. Some have been reviewed in *Stimulate Your Senses with Mead* in *zymurgy* Fall 1992 (Vol. 15, No. 3) (Price 1992). Most wine yeast strains will perform nicely, and indeed some are very good at fermenting low-nutrient musts. There are several commercial sources for high-quality mead yeasts and most are now available as pure cultures on slants, eliminating bacterial contamination sometimes encountered in the dry yeast packets. We have discovered, however, that bacterial contamination is a minor issue in mead fermentations. Of far greater consequence is the potential for postfermentation oxidation or contamination during processing or storage with acetobacter species that may result in the production of honey vinegar. Most of these problems can be prevented with good sanitation practices, avoiding aeration during transfer or preventing oxygen from reaching the mead by keeping carboys or barrels filled.

Because meads generally start out with high sugar content (around 20 percent) it is prudent to pitch a large volume of yeast. We recommend pitching the slurry from a prepared starter that is no less than 10 percent of the volume of the main fermentation. This starter may be prepared from a variety of fermentable sugars provided sufficient nutrition is available to the yeast. We recommend the



use of yeast energizer to provide these nutrients because it contains vitamins and minerals in addition to a nitrogen source. Although expensive, an ideal supplement is Yeast Nitrogen Base produced by Difco. Allow the starter to ferment to completion, decant the top (spent) media and pitch the slurry to avoid diluting the honey must.

As in all of your brewing, quality ingredients are worth the extra effort and expense; good honey makes good mead. Low nutrient levels in honey may cause unnecessarily long and slow fermentation, therefore add plenty of yeast nutrients. Poorly buffered honey may result in the pH falling to unacceptable levels during fermentation, therefore the addition of CaCO_3 may prevent this pH decrease and accelerate the fermentation.

Mead is easy to make and the effort will produce a beverage of incredible complexity and a source of pleasure for many years to come.

THE EXPERIMENT

With a nod to Charlie Papazian who conducted a similar experiment (Price 1922), we made 65 gallons of mead in a single session in February 1993. Yeast was obtained through Yeast Lab (M61-dry mead and M62-sweet mead) or The Yeast Culture Kit Co. (Epernay, Prisse de Mousse, Riesling and Tokay) and were pure cultures from slants or normal production runs in the case of Yeast Lab M61 and M62. Honey was ob-

tained locally or by mail order and in each case we attempted to purchase the least-processed form. In many cases it was unfiltered and unprocessed, therefore we were handling crystallized bricks rather than liquids. All meads except batch No. 13 were made to the same recipe: 2 1/2 pounds per gallon (0.3 kilograms per liter) of honey, two-fifths teaspoon per gallon (1.1 milliliter per liter) of malic acid, two-fifths teaspoon per gallon (1.1 milliliter per liter) of tartaric acid, two-fifths teaspoon per gallon (1.1 milliliter per liter) of yeast nutrient and one-fifth teaspoon per gallon (0.6 milliliter per liter) of Yeast Energizer. Original gravity fell in the range of 1.092 to 1.094, pH 3.55 to 4.0, titratable acidity 0.2 to 0.25 (expressed as tartaric acid equivalents). For the blended batch (No. 13) we added all the remaining honey

Making Melomel

ADDING FRUIT TO MEAD MAKES MELOMEL. Raspberries, blackberries and pit fruits are popular, but almost any fruit will do and creativity has its rewards. Depending on the amount of fruit character you desire, you can add one to three pounds of fruit per gallon (0.12 to 0.36 kilograms per liter). Most fruit can simply be mashed with a potato masher. Peaches, nectarines and plums should be chopped. There are several ways to add fruit, each with advantages and disadvantages. The idea is to add the fruit without sacrificing sanitation. Here are a few methods.

METHOD ONE: Add fruit before fermentation. This requires very effective sanitation because the must is most susceptible to infection at this stage. Although it cuts against the grain of current wisdom, the use of a plastic fermenter can be very effective here. Follow the basic mead recipe, sanitizing your immersion chiller during the water boil. Add the fruit to the sanitized fermenter while the honey and water are sanitizing. Put the immersion chiller in your fermenter with the fruit and pour the hot honey mixture over. Cover with aluminum foil and allow to sanitize for 20 minutes, then turn on the immersion chiller. Pitch yeast when the wort is 70 degrees F (21 degrees C), and rack off fruit when fermentation slows, usually about two to four weeks. Follow bottling instructions as before.

METHOD TWO: Add fruit after primary fermentation. Your mead is still susceptible here, so this method also requires sanitation of the fruit (sulfite, blanch or pasteurize). Ferment must according to the basic recipe, but decrease your water to 3 1/2 gallons (13.25 liters). When you are ready to transfer to the secondary, sanitize your immersion chiller in a pot of boiling water. Pour off all but one-half gallon of water and add fruit. Raise the temperature of the fruit mix to 170 degrees F (77 degrees C) for 10 minutes, then turn on the chiller. When the temperature has dropped below 80 degrees F (27 degrees C), add the fruit to a six- or seven-gallon (23- or 26.5-liter) fermenter and rack the must onto the fruit. Rack the mead again when signs of the ensuing fermentation have slowed.

METHOD THREE: Add rinsed raw fruit after secondary fermentation. Your mead will be at its most stable stage after secondary fermentation, and adding raw fruit will give you the best chance of capturing its freshness, aroma and flavor in as pristine a condition as possible. Add the fruit to a six- or seven-gallon (23- or 26.5-liter) fermenter and rack the mead onto the fruit. Rack when fermentation ceases.

MELOMEL ADDS A TREMENDOUS VARIETY TO THE RANGE OF MEADS YOU CAN MAKE. We are curious about the results of brewing fruit melomels from their respective honeys: raspberry melomel with raspberry honey, or orange melomel with orange blossom honey. Let your imagination be your only limitation; let patience and creativity yield their rewards.

leftovers and then diluted with water to obtain an original gravity of 1.130. The procedure was the same for all batches: we brought the proper amount of acid-treated water to a boil, added the honey and allowed it to pasteurize for 15 minute at 160 to 170 degrees F (71 to 77 degrees C), cooled to 70 degrees F (21 degrees C) and put the must into a carboy.

We began around 10:30 a.m. using four 15 1/2-gallon (59-liter) stainless-steel kettles equipped with either propane or natural gas burners. Crystallized honey proved to be difficult to work with on the 65-pound (29.5-kilogram) scale. After a short dinner break at 8 p.m. we had everything washed by 9 p.m., all carboys carried down to the basement and the yeast cultures pitched by 9:30 p.m. Arranging and re-arranging the carboys on the floor so they sat on an insulating layer of Styrofoam® produced a pleasing array of hues that ranged from almost water-clear (star thistle) to amber (wildflower).

Fermentations all were active within 12 hours and were allowed to proceed at ambient temperature. Active fermentation is a relative term, but with proper nutrition and an adequate pitching rate one can expect up to two bubbles per minute in an S-shaped air lock. The ambient temperature ranged from 50 to 70 degrees F (10 to 21 degrees C) depending on the season, and was complete by the end of summer (about six

months later). We made no attempt to achieve a rapid fermentation in this experiment. Two of the batches spontaneously cleared at seven months: the clover meads fermented with Epernay and Prisse de Mousse yeast. All were treated with bentonite and racked to secondary in April 1994. No further clarification was seen, so Sparkoloid® was added to all of the carboys. Absolute clarity was observed within four days in all batches. The individual batches were racked to kegs in June 1994, blanketed with CO₂ and allowed to condition at cellar temperatures. All of the meads were sampled at 18 months of age, admittedly young for a mead. Many would benefit from additional age. Flavors (especially the wildflower) will mellow and the aroma will improve. Here are our tasting notes:

Honey	Yeast	OG	FG
Clover	Prisse de Mousse	1.094	0.992
Comments:	<i>Extremely dry, austere. Honey character evident. Alcohol evident.</i>		
Clover	M61-dry mead	1.094	1.000
Comments:	<i>Dry, crisp but with good honey expression. Neutral character.</i>		
Clover	Riesling	1.094	1.007
Comments:	<i>Off-dry, fruity with honey emphasis.</i>		
Clover	M62-sweet mead	1.094	1.009
Comments:	<i>Off-dry, good honey aroma.</i>		
Clover	Epernay	1.094	1.011
Comments:	<i>Sweet, soft, fruity. Some sulfur aroma.</i>		
Clover	Tokay	1.094	1.015
Comments:	<i>Sweet, good honey aroma</i>		
Wildflower	M61-dry mead	1.094	0.995
Comments:	<i>Young wildflower mead taste, needs more time to mellow. Rough at this point.</i>		
Fireweed	M61-dry mead	1.091	1.000
Comments:	<i>Very mild, slightly floral flavor, aroma.</i>		
Wild raspberry	M61-dry mead	1.094	1.010
Comments:	<i>Unique, perfumy flavor, aroma. Strong unique honey flavor.</i>		
Orange blossom	M61-dry mead	1.093	1.019
Comments:	<i>Mild, mellow, excellent floral-citrus flavor.</i>		
Snowberry	M61-dry mead	1.095	1.021
Comments:	<i>Very nice, resinous, evergreen quality. Unique honey character.</i>		
Star thistle	M61-dry mead	1.092	1.015
Comments:	<i>Mild, pleasant flavor. Some sulfur notes present.</i>		



Yeast Available FOR THE Meadmaker

THIS IS BY NO MEANS an exhaustive list, but represents most of the commonly available strains.

DRY YEAST

Red Star

Pasteur Champagne
Epernay
Montrachet
Prisse de Mousse

Lalvin

EC-1118 (higher alcohol tolerance)
71B-1122
K1V-1116 ("Killer" Yeast)
ICV/D-47
Red Burgundy

LIQUID YEAST

Yeast Lab

M61 Dry Mead — Pasteur Champagne
(14-16% ETOH tolerance)
M62 Sweet Mead — Steinberger
(12-13% ETOH tolerance)

Wyeast

#3632 Dry Mead — Prisse de Mousse
(12-14% ETOH tolerance)
#3184 Sweet Mead — Redeisheiner
(9-11% ETOH tolerance)

SLANTS

The Yeast Culture Kit Co.

W2 Pasteur Champagne
W5 White wine #1
W6 Champagne
W7 White wine #2
W8 Epernay
W9 Tokay
W10 Sauternes
W11 Prisse de Mousse
W12 Steinberger
W13 Mead
W14 Sherry
W15 Montrachet
W16 Chablis
W17 Bordeaux
W18 Burgundy
W19 Riesling #1
W20 Riesling #2

GLOSSARY

Brix – A scale for measuring sugar content based on the Balling scale.

Lees – Spent yeast on the bottom of the fermenter.

Must – Unfermented honey and water.

Off-dry – A wine evaluation term that refers to a wine that has 0.5 to 1 percent residual sugar, not sweet but not bone dry.

Show mead – The old English term for a fermented mixture of honey and water.

Traditional mead – Though primarily honey and water, traditional mead may also contain trace flavorings and spices designed to enhance flavor rather than provide pronounced flavoring.

Titrateable Acidity – (TA) A common winemakers term that refers to the amount of acid titrated against a known standard base.

Yeast Extract – Yeast nutrient. Yeast extract is the contents of the yeast cell. Yeast is cultured specifically for this purpose and is centrifuged separating the cell wall skeletons (also called hulls or ghosts) from the extract.

Yeast Hulls – Skeletons of a yeast cell wall. Also called ghosts. See Yeast Extract.

REFERENCES

- Acton, B. and P. Duncan, *Making Mead*, Amateur Winemaker, Argus Books, 1984.
- Cox, J., *From Vines to Wines*, Garden Way Publishing, 1985.
- Gayre, Lt. Col. R., with C. Papazian, *Brewing Mead, Wassail! In Mazers of Mead*, Brewers Publications, 1986.
- Kime, R., M.R. McLellan and C.Y. Lee; Ultra-filtration of Honey for Mead Production, *Agricultural Research*, 15:517, 1991.
- Morse, R., *Making Mead*, Wicwas Press, 1986.
- Morse, R. and K.H. Steinkraus, *Wines from the Fermentation of Honey; Honey, a Comprehensive Study*, Crane, E. (Ed), Crane, Russak and Co., 1975.
- Moorhead, D.; The Relationship of pH and Acidity in Wine; *The Complete Handbook of Winemaking*; G.K. Kent, 1993.

Price, S.; "Stimulate your Senses with Mead"; Fall *zymurgy* 1992, (Vol. 15, No. 3).

White, J.W. Jr.; *Composition of Honey; Honey, a Comprehensive Study*, Crane, E. (Ed); Crane, Russak & Co., 1975.

White, J.W. Jr., *The Hive and The Honeybee*, Phlenum Press, 1966.

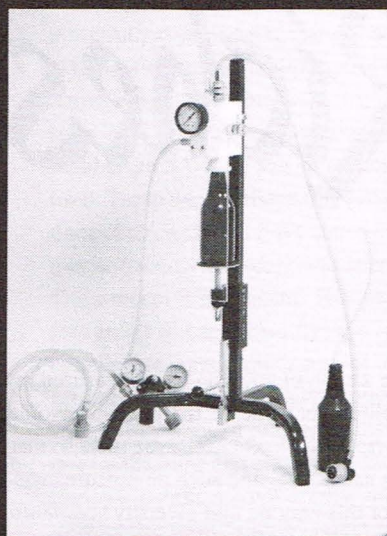
Dan McConnell, a national BJCP judge, is a research scientist at the University of Michigan, technical director of G.W. Kent and president of The Yeast Culture Kit Co.,

all in Ann Arbor, Mich. He has been brewing beer and mead for 14 years and wine since he was 14.

Ken Schramm is a television production professional (The Palace of Auburn Hills, Detroit Pistons), lives in Troy, Mich., and has been brewing for seven years. He is a certified BJCP judge. The last three years he has served as director of The Mazer Cup Mead Competition. His taste in brewing leans toward specialty beers and meads.

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).

Vinotheque
2142 Trans Canada Highway,
Dorval, Quebec, Canada. H9P 2N4.
Phone 800 363-1506 Fax (514) 684-4241

Belgium ...

A Land of Endless Riches

By Martin Lodahl

If the wealth of a nation were measured in terms of the variety and excellence of its beers, then Belgium would be the world's premier superpower. Nowhere else are there so many classic beer styles in such a small area, and such an Epicurean approach to beer. One reason for this may be that diversity is a natural part of life in Belgium, and has been for centuries. Julius Caesar found the Belgae composed of many different tribes, Bellovaques, Eburons, Menapiens, Pleumoxii and Nerviens, working together with dismaying efficiency against a common enemy — him.

This spirit still lives today. Belgium is not large; only nine U.S. states are smaller, and the terrain is such that travel is not difficult. From the coastline to the German border is never farther than 170 miles, and from the French border to the border with the Netherlands is never more than 140 miles. Yet within that small space three major cultural and linguistic groups are living together, not always in perfect harmony, and distinct regional identities have not been lost to the mass culture of the 20th century world.

Fortunately for us, those regional identities include styles of beer, and sometimes individual brands that have become closely identified with their locale. It is only natural that beer assumes such importance, as nearly all of Belgium falls between the 50th and 60th parallels of north latitude often termed the "beer belt." Grain and hops are culti-

vated in these latitudes, and the climate is too cool for winemaking. Above the 60th parallel distilled spirits generally dominate. All three are richly enjoyed in Belgium, but beer is the clear favorite.

In Belgium, as elsewhere, most of the volume is in German-inspired lagers, well-made but not in any sense unique. The remaining fraction includes the spontaneously fermented lambics, the rich and fruity Trappist ales and their cousins the abbey beers, white beers, saisons, sour brown beers, sour red beers, English-style ales, ales that decidedly are not English-style, Scotch ales and so on. During a visit to the Musée des Brasseurs in Brussels in 1990 I was told that there are some 500 different Belgian beers available at any one time, and an amazingly large number can be found at even the smallest of cafés, each beer with its own matching glassware. This impressive variety is a product of ingenuity and tradition. Many existing beers have at least their roots in tradition, but brewers aren't shy about interpreting tradition through their art.

Tradition is also tempered by market pressures, which have not been especially kind to the Belgian styles in the last century. Before 1840 non-native beer styles were virtually unknown in Belgium, but after English ales (which remain popular to this day) established a beachhead, Bavarian beers began their invasion in earnest, and by the time a century had passed, non-native beer

styles threatened to drive the domestic artisanal Belgian beers into extinction.

A dedicated beer enthusiast of the time recorded that in 1865 only six of the cafés in Brussels sold Bavarian beer, but by 1885 all 8,090 of the city's drinking establishments carried beers of this type, many brewed by the 25 breweries built for the purpose in Brussels between 1869 and 1885 (J. Lambic undated). Sales of these lager beers continued to displace those of the traditional beers until very recently, and styles like Uytzet, Bornhem, Bruticolor, Audenaerde, grisette, Pithem and bière d'orge are just names now, with no examples available for many years. Others, like Diest and Peeterman, are gone, but so recently that comprehensive descriptions remain. And others, like the lambic family, and Blanche de Louvain, saison and Blanche de Hoegaarden, only narrowly escaped extinction and are now returning to popularity, caused in part by the renewed interest in traditional and natural products beginning in the 1960s, but mostly as a result of the worldwide beer renaissance.

Perhaps the best known of the surviving beers are the Trappist ales and the abbey beers. These are closely related styles, so similar that the distinction between them has nothing to do with beer. Six Trappist abbeys brew beer commercially, and five of them are in Belgium. The sixth, Abdij Koningshoeven (producers of Schaapskooi La



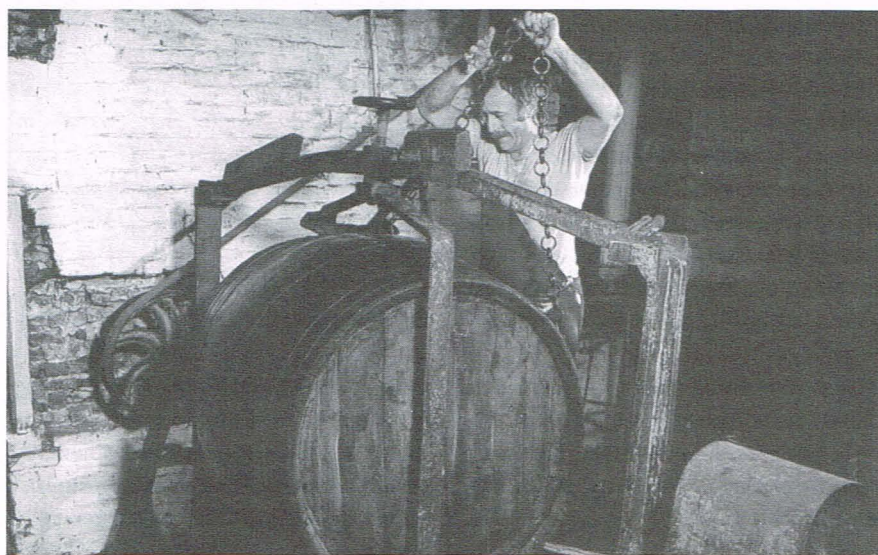
Spontaneous fermentation of lambic begins about three days after the cooled wort is put into barrels.

Trappe), is just across the border in the Netherlands. The Belgian Trappist beers are Chimay, Orval, Rochefort, Westmalle and Westvleteren. Westvleteren (which licenses the St. Sixtus name to a commercial brewery oddly named St. Bernardus) is in the far west of Belgium, and the other four are in the eastern half. While brewing has an ancient and honored tradition in monastic communities, brewing on a commercial scale is a relatively recent innovation for them, but they do it very well indeed (Jackson 1992). My own favorites are the products of Rochefort, with their beguiling raisinlike fruitiness, but the dry hoppiness of Orval

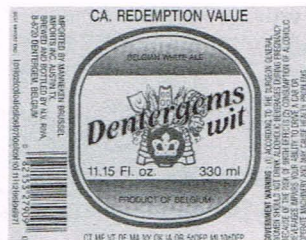
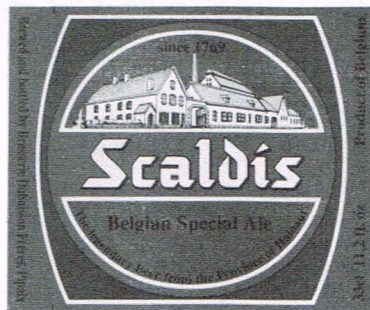
(which unfortunately does not travel at all well) is worth quiet contemplation. Westvleteren's rare Abbot ale is simply sublime, and of course, Chimay's Capsule Blue is powerfully complex and sumptuous.

It is among the Trappist ales that the terms "single," "double" and "triple" (often seen in their Flemish spellings: Single, Dubbel and Tripel) are most commonly used. These were perhaps originally indications of strength, but have somewhat more precise (though related) connotations today. The concept is not recent. The memoirs of Jef Lambic (J. Lambic undated) offer an account of his grandfather's service as a master brewer in a monastery around 1812, where they brewed two strengths of beer, one for the nuns and another for the monks. Today's monks are apparently more temperate; the term "single" refers to a low-gravity beer brewed for them to drink with meals. A double is commonly expected to be stronger, generally in a color range from copper to dark brown, richly malty with very little hop presence either as bitterness or flavor and aroma, often with interestingly spicy fermentation effects. The best are fruity and complex, filling, with a long finish. A triple is generally stronger yet, but pale, sometimes dry and hoppy. An unailing characteristic is body much lighter than you'd expect with a beer so strong; sugar is clearly a commonly used adjunct in brewing triples.

The popularity of the Trappist beers has been such that abbeys of other orders have been inspired to contract with secular brewers



According to the Brussels' Gueuze Museum, the barrels must be cleaned carefully in order to preserve the organisms that play a vital part in the spontaneous fermentation.

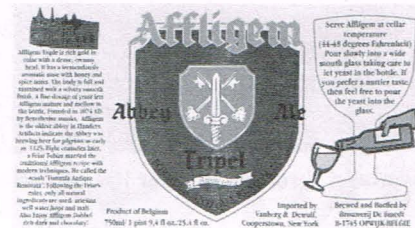


beer termed "mars." The two were often mixed at time of serving and the resulting drink called "faro," but that term now is used to denote a sweetened, low-gravity lambic. Traditional faro hasn't been brewed for many years.

In their natural state, lambics are dry and intensely sour, with delightful fruity highlights and a cleanliness of palate that defies description. In recent years it has become increasingly difficult to find traditional lambics because the sweetened and flavored varieties, and those where some lambic is

mixed with bulk-fermented beers to soften the taste, have captured a major share of the market. Lambic brewing is very labor-intensive, and the time involved between brewing and sale is many times longer than that of conventional beers, making the business of lambic brewing a risky proposition indeed. American palates are just now beginning to awaken to the flavors of traditional lambics, and it is hoped that this immense new market will give the tiny industry a new lease on life.

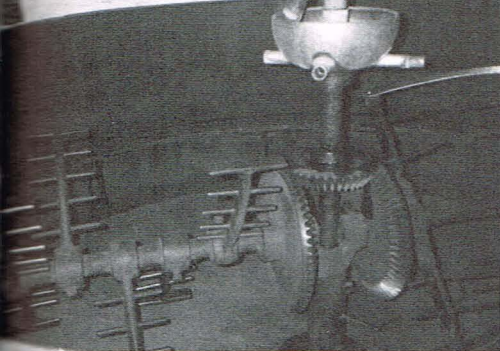
One of the most surprising recent developments has been the sudden surge in popularity of the "white" beers (Lodahl 1994). Low-gravity beers made from malted barley and unmalted wheat and oats were for centuries the favored local products of a variety of regions, particularly of Louvain, east of Brussels, whose chief competitor for the business was the village of Hoegaarden. In the 18th century some 30,000 metric tonnes (about 6,400 barrels) were shipped annually from Louvain to Brussels, where they were sold by the cask in the aptly-named Place de Louvain, until a city ordinance dated "1 Floreal An VI" (20 April 1798) in the short-lived calendar of that time and place prohibited it because it interfered with traffic. The beers nevertheless remained popular until elbowed aside by lagers after World War II. They were early winners in the movement to re-examine the traditional styles, and their popularity growth in America has been both surprising and gratifying. The flavor is generally fresh and crisp, oats sometimes adding a quality described as "silky," with very little hop or malt quality, but usually a refreshing acidity from the yeast. Most are spiced,



to produce beers of similar style. Secular brewers also have licensed the names of abbeys, or simply have used names with an ecclesiastical ring, to create an appropriate image for beers brewed in a style similar to the Trappist beers. Because brewers can only call themselves "Trappists" if they are, in fact, Trappists, these other Trappist-style beers have been collectively referred to as "abbey beers," and include such well-known and excellent examples as Grimbergen, Affligem, Corsendonk and Maredsous.

Perhaps next in terms of the interest they always arouse are the lambic beers. These are perhaps the most "natural" beers in the world, with critical elements in their production process remaining unchanged since the Middle Ages (Sharp, Lodahl 1992). The process begins with a grist of two-row pale malt and at least 30 percent raw, unmalted wheat mashed in a turbid process that involves abstracting and reserving fractions of unconverted mash liquor which are re-

placed with hot water to step the mash to its next rest temperature. This starch-laden wort is heated and returned to the mash at a late stage, assuring that much starch will be carried into the boil. In that boil, commonly two to three hours in length, as much as six times a normal hop charge is added, but of hops that have been aged in a dry loft for two or three years. These hops have lost virtually all bitterness, flavor and aroma, but their antiseptic properties are intact, and will have a strong influence in the complex fermentation to follow. After the boil, the wort is then pumped into a shallow coolship located generally just under the brewery's roof, where unfiltered breezes blow over it, cooling and inoculating the wort. The next day the wort is run into barrels and fermentation begins spontaneously within a few days. From there, after several months of fermentation and several rackings, it's sometimes sold young (a relative term), as "vos" or "foxy" lambic, or can be aged in the barrel for several years, and sold as "vieux lambic" or simply lambic. It can be blended with young lambic and refermented in the bottle to make gueuze, or can be refermented with fruit to make kriek, framboise, pêche, or any of a number of other variants. A century ago, more than one mash was done with each grist, the first runnings being termed "lambic," and the small



Detail of the Cantillon mashtun. Note the elaborate mash-rakes, the slotted copper bottom and the fittings (above the gears) for a "Scotch cross" sparging system.



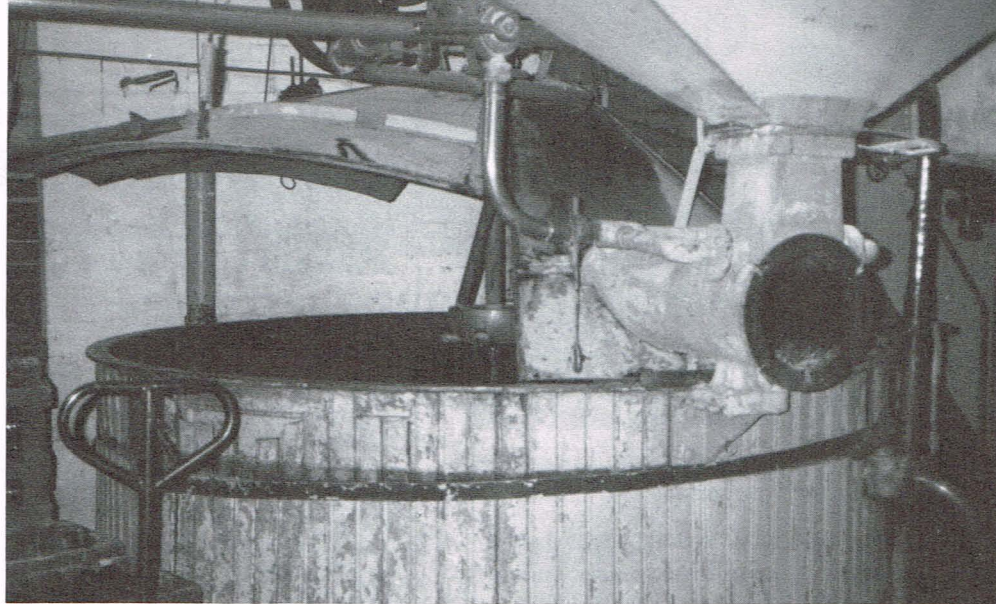
The boiling kettle at the Cantillon brewery in Brussels. The belt and pulley above the kettle drive a dasher by the steam coils inside. On the far right of the frame is a belt-driven



Sacks of wheat, barley and hops are often stored in the lofts of breweries.

generally with coriander and bitter orange, occasionally with other spices as well.

In the west, in Flanders, are the producers of the classic brown ales known locally as "oud bruins." These are usually, but not always, sour beers, and are rewarding even by Belgian standards. One of the clas-



Mashtuns of this design were quite common in Belgian breweries of the late 19th and early 20th centuries. This one, at the Cantillon brewery in Brussels, has had a new set of wooden staves fitted to its sides since this photo was taken in December of 1990.

sics is Liefman's in the city of Oudenaarde, now part of the Riva group. Liefman's beers are sour and complex. Since they came under the Riva umbrella they no longer brew their own wort, but ferment and package wort trucked to them from the Riva brewery in Detergem. In previous years it had been suggested that the deep garnet color of Liefman's was caused by the overnight simmering of the wort, a practice probably not adopted by choice, but made necessary by their equipment. The very large kettle was heated by steam coils that were clearly much too small for a vessel of such capacity, so it probably took all night to bring the wort to a boil. The change seems so far to have compromised neither color nor flavor, but those who have long enjoyed this beer can't help being concerned. Farther west, in Roeselare, is another, completely different oud bruin: Rodenbach. Also a sour beer but red, Rodenbach sometimes seems more like a wine than a beer. And indeed, with its rows of tall wooden tuns, the brewery looks more like a winery or brandy distillery. The use of this type of tun once was common on both sides of the English Channel, and a single British beer, Greene King's "Strong Suffolk," is fermented in such vessels to this day (Lodahl 1994). This beer has tart notes to it, possibly caused by wild yeast and *lactobacillus* living in the wood of the tuns.

As mentioned above, most of the traditional beers of Belgium are ales, with many

more types and individual examples than can be described here. The last broad category I'll mention might loosely be termed "strong ales," with several examples imported to America. From the descriptions of the beers above, it can be concluded that Belgian beers are not, on the whole, terribly hoppy, and that malt flavors and other flavor effects, are central features in the Belgian beer esthetic because of unusual yeast and fermentations. I do not think the conclusions are wrong, but there are some Belgian ales that have a pronounced hop character. One of these is an ale from the town of Pipaix in the French-speaking region of Wallonia. In Belgium it is called Bush, a loose translation of the name of the brewery (Brasserie Dubuisson), but to avoid legal entanglements with a larger brewery with a similarly named product, in America it is sold under the name of Scaldis (Jackson 1993). Michael Jackson classifies it as a barley wine, a judgment that seems reasonable to me because of its strength, but as often seems the case in strong Belgian beers it lacks the cloying maltiness of most barley wines. Firm, dry and amazingly drinkable for its strength, it has a yeast signature that immediately tells you it is Belgian. Duvel, from the Moortgat brewery in Breendonk, is another classic of the type, though it perhaps has more in common with the triple style. A strong and very pale beer, this too is well-hopped, with a much lighter palate than its strength would



Lambic refermented with raspberries is called framboise.

suggest, and a surprisingly light yeast signature. With a smoothness about it that suggests a long maturing process, it has inspired many imitations, most of which have names implying devilry or mischief.

This is but the smallest sampling of what's available to the beer enthusiast who visits Belgium. I highly recommend such a visit.

References

Jackson, M. *The Great Beers of Belgium*, 2nd. ed. CODA, 1992.

Jackson, M. *Michael Jackson's Beer Companion*, Running Press, 1993.

Lambic, J. *Les Memoires de Jef Lambic, La Technique Belge*, Brussels, undated.

Lodahl, M. "Brewing to Styles: Witbier: Belgian White," *BrewingTechniques*, Vol. 2, No. 4, 1994.

Lodahl, M. "Brewing to Styles: Old, Strong and Stock Ales," *BrewingTechniques*, Vol. 2, No. 3, 1994.

Sharp, M. and M. Lodahl, "Brewing Lambic Beers Traditionally and At Home," *Just Brew It, Beer and Brewing Volume 12*, Brewers Publications, 1992.

Martin Lodahl is a homebrewer and beer writer living with his wife and two children in Auburn, Calif. A Certified judge, he is an enthusiastic participant in the BJCP. Martin has twice been an organizer of the AHA National Homebrew Competition, was co-presenter of a talk on lambics at the AHA 1992 National Homebrewers Conference and is a long-time member of the Gold Country Brewers Association. He is currently working with John Ostrom on *California Common Beer*, an upcoming Classic Beer Style Series book from Brewers Publications.

Great Beer Starts Here

BREW CITY SUPPLIES
Milwaukee, Wisconsin

**Always the lowest price!
GUARANTEED!**

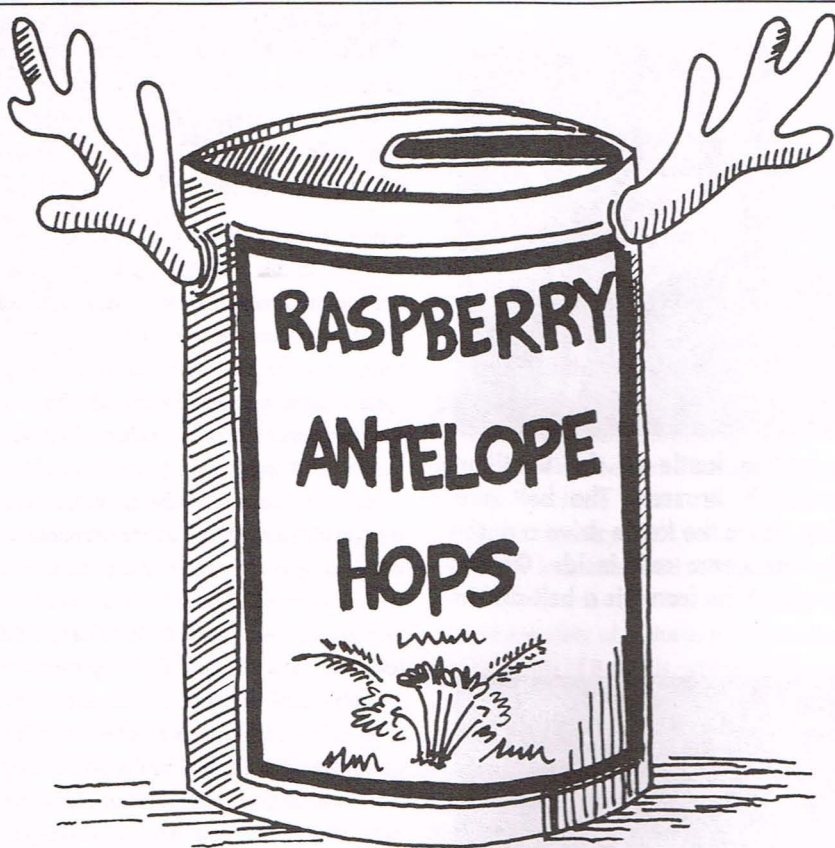
**Case of 10 NWE 3.3# Extract
Mix & Match - Only \$ 50.00**

Brew City Supplies

PO Box 27729 Dept. ZA
Milwaukee, Wisconsin 53227
Phone/Fax (414) 425-8595

• Over 200 Extracts • Grain Mills • Books • Mashing Hardware • More!

Write for your free copy of our 1994 - 32 Page Catalog!



**If we don't have it,
maybe you don't want it.**

CROSBY & BAKER LTD

Wholesale Home Brew Supplies

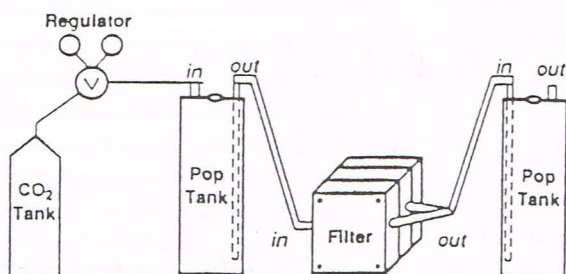
Atlanta, Georgia 800-666-2440

Westport, Massachusetts 800-999-2440

MARCON FILTERS

produces Beer Filters for homebrewers, pilot breweries, microbreweries, and pub breweries, etc.

*All models can use pads or reusable membranes
D.E. plates available*



For Draft Beer we have the economical
"Carosello Pressurized System"

MARCON FILTERS

40 Beverly Hills Drive, Downsview, Ontario,
Canada M31 1A1, Phone (416) 248-8484

SAVE 10% ON YOUR FIRST ORDER
WHEN YOU MENTION THIS AD!

LAKE SUPERIOR BREWING CO. QUALITY BREWING SUPPLIES



GREAT PRICES
FAST DELIVERY
FINE SELECTION
FRIENDLY SERVICE

7206 RIX ST., ADA, MI 49301-9189
616-682-0091

FREE CATALOG



PHILADELPHIA'S
ORIGINAL SUPPLY
STORE SERVING
THE DELAWARE
VALLEY AND BE-
YOND. WE SHIP
ANYWHERE WITH
FAST, FRIENDLY
SERVICE. CALL OR
WRITE FOR FREE
CATALOG. ASK
ABOUT FREE SHIP-
PING. CONVENIENT
DOWNTOWN LOCA-
TION NEAR
PHILLY'S BEST
BEER BARS.

FEATURING A COMPLETE
INVENTORY OF BELGIAN
INGREDIENTS FROM GRAINS
TO YEASTS & CANDI SUGARS
GREAT SELECTION & PRICES
2008 SANSOM STREET
PHILADELPHIA, PA 19103
215-569-9469 (FAX) 215-569-4633

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



Is Belgium's Brewing Culture at Risk?

BY JAN MAES

No other country has been praised more for its rich tradition of brewing beer and enormous diversity of styles than Belgium. This tiny member of the European Community, barely the size of Massachusetts, has many more beer styles than it has geographic regions. At the beginning of this century more than 3,000 breweries were scattered throughout Belgium, almost outnumbering the churches of this predominantly Catholic country. Today, fewer than 150 breweries remain and their struggle for independence is harder then ever.

Belgian Beer in a New Europe

During the first half of this century, more than two thousand small breweries closed their doors, surrendering to an increasingly fierce local competition. An improved transportation system in a growing economy meant local communities became less and less isolated. As a result, their breweries competed with one another. This led to bigger breweries with a more regional character. By the 1970s, despite their dramatically reduced number, the remaining brewers brewed better and more diverse beers than ever before, sparking a worldwide interest in Belgian beer. The Belgian Ministry of Foreign Trade declared 1986 National Year of Beer, and its slogan read: "Newton would have said: The size of Belgium is in inverse ratio to the greatness of its beers." If this law is as untouchable as Newton's original, then Belgium was getting larger for a while. By the late 1980s, the greatness of Belgian beers was suffering somewhat, this time mainly because of international competition. With the approaching 1993 unification of the Common Market on their minds, the biggest national Pilsener producers wanted to bolster their power by gaining a bigger market share. They formed two big brewery conglomerates: Interbrew and Alken-Maes. Their strategy consisted of buying or participating in other breweries and gradually replacing the beers with their own.

This movement was the final step in the transformation of the Belgian beer production from a craft into an industry, well-positioned to step into the Common Market. Unfortunately, it also resulted in the loss of much of the character and diversity that had defined Belgian beer until then. As those small, family-operated businesses became part of the industrial conglomerates, their beers underwent some drastic changes. They not only lost some of their character as the result of a larger scale production process, but often the flavor was intentionally altered, mainly sweetened, to appeal to a larger public.

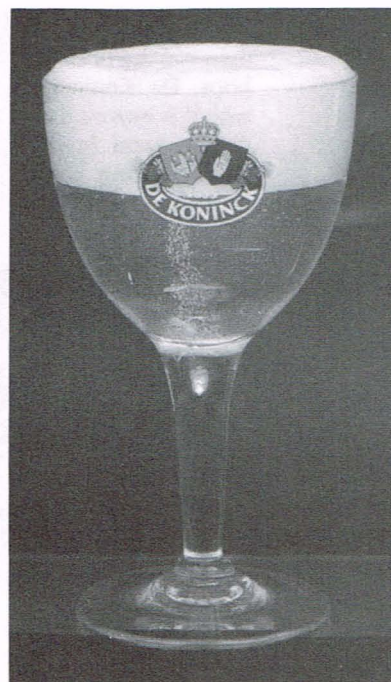
A perfect example can be found in the DeKluis brewery. Reopened in 1966 by

Pierre Celis, this brewery reintroduced Hoegaarden "wit" (white) beer, a style that had become uncommon. This slightly acidic and fruity wheat beer, spiced with coriander and bitter orange peel, became immensely popular in the 1980s. After a fire in the bottling division, the Artois brewery (which later would found Interbrew) became a partner in 1985 and bought out Celis completely in 1988. The new owners managed to triple the brewing capacity. Fortunately for beer lovers in America, Celis opened a brewery in Austin, Texas, and is now producing the excellent, back-to-style Celis White.

De Koninck Brewery

In this age of "Coca-Cola beer," as one traditional brewer called the trend toward less interesting and usually sweeter mass-produced beer, fewer Belgian breweries manage to stay independent and brew a beer with true personality. De Koninck in Antwerp is certainly one of these precious few. Established in 1833, owned and operated by the same two families since early in this century, this brewery has played a major role in Antwerp's social environment. Two-thirds of the pubs in this harbor city serve De Koninck beer on tap. The brewery's single beer, nicknamed "bolleke," referring to the bowl-shaped glass it is served in, is a typical example of the Belgian-style ale that is hardly known outside Belgium. It is amber-colored, 3.9 percent alcohol by weight (5 percent by volume) with a yeast bite and subtle malt aroma. The Saaz hops balance the malt sweetness more by virtue of their spiciness than by their bitterness.

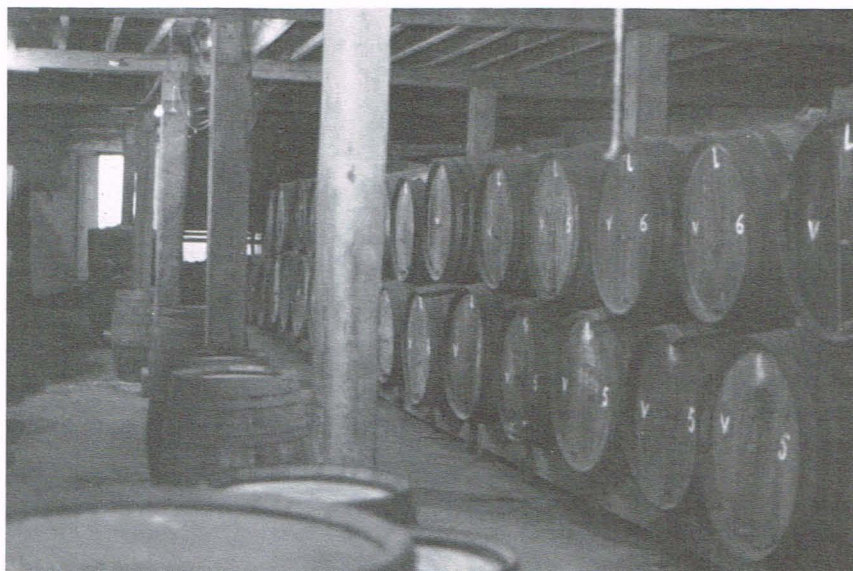
The brewery has developed its own patented yeast propagation system capable of producing the massive amounts of healthy yeast needed for a quick start of the primary fermentation, which still takes place in large open vessels. If you really want to know what yeast bite is (or if you just need your annual dose of B vitamins), you can order a shot glass of fresh yeast slurry in certain pubs. The Café Pelgrim across the street from the brewery has a couple of buckets of leftover yeast delivered weekly. Just pour it in your beer and enjoy or take it home for your next batch of homebrew.



A professionally poured "bolleke" of De Koninck.

The De Koninck brewery has developed a very intimate relationship with its customers who want their beer served perfectly each time. If the brewery were to be bought out, it would risk losing half its Antwerp clientele who consider the brewery an integral part of the city. The brewery has invested a lot in its pubs and established a tradition of extensive quality control. Beer is only sold to cafés that go through at least four kegs a week (because the beer is not pasteurized), and the brewery itself is responsible for regularly cleaning out the beer lines. Moreover, every pub owner is taught in person how to tap a perfect "bolleke."

When I visited the brewery in the spring of 1994, an entire new brewhouse was being added to the existing brewery, potentially doubling the current capacity of about 100,000 barrels a year. With an increased export effort to neighboring Holland and France, this is not surprising. I also suspect that the brewery may have some interest in the United States, despite a rather unsuccessful first introduction of De Koninck Ale here in the late 1980s. Problems arose then when it became too expensive to retrieve the traditionally reusable bottles and, in the case of kegged beer, the brewery was not capable



Lambic beer ages for up to three years in wooden barrels.

of extending its quality control program across the ocean. It is hoped that these problems can be solved next time, because this style of beer would be a welcome addition to the U.S. market.

Lambic Struggles for Survival

The lambic beer style, often given top honors as the "Champagne of Brussels," tops Belgium's list of endangered beers. These most distinct beers, infamous for their typical sour taste, are also the least malleable. They simply don't fit in today's market that demands uniformity and mass-production. In reality, lambic beers are much more the masterpieces of an artist than the products of a brewer. Unlike most other beers in the world, lambics are not made by adding a pure (often single-strain) yeast starter to the cool wort, but by letting the wort cool overnight exposed to the open air. This enables the wild microflora to inoculate the beer, which starts fermenting in a few days. This type of fermentation, called self-fermentation or spontaneous fermentation, will not produce a true Belgian lambic at home because every region in the world has different microflora.

The beer is transferred to wooden kegs that introduce still more microorganisms to

the beer, thereby giving it a substantial part of what will turn out to be the house flavors of the brewery. After fermenting and aging from one to several years in casks, the beer is called lambic. Lambics of different ages are blended and bottled — the young lambic contains enough sugar to induce a second fermentation. The bottled product is now called gueuze. No two casks of lambic taste the same, and the brewer's artistry is exercised in the correct blending of different lambics to obtain a gueuze of relatively consistent taste and quality. Sometimes fruit is added to lam-

bic to create "kriek" (cherry) and "framboise" (raspberry) and several other fruit lambics.

When made in the traditional way, lambic beers are among the most fascinating and complex in the world. Describing their flavors is almost impossible. But typically the common characteristics for gueuze are its refreshing sourness (from lactic- and acetic acid-producing bacteria), its horsy, leathery aroma (from the yeast *Brettanomyces*) and its astringent dryness from aging in wooden barrels. In the late 1980s, many authentic lambic breweries either disappeared or were annexed by the same industrial brewery conglomerates that took over so many other artisan breweries. Some conglomerates filtered, sweetened, added extracts and syrups instead of real fruits, cut down on the percentage of self-fermented beer, fermented in stainless-steel tanks instead of the traditional wooden barrels and aged for much shorter periods.

A few young idealists decided to take the opposite direction by brewing lambic beers the old-fashioned way. The Boon brewery in Lembeek, established in 1989, produces superb examples of the style, especially the Marriage Parfait (perfect marriage) versions of Frank Boon's gueuze and kriek made by blending the best lots of his lambic, are favorites among connoisseurs. The brewery survives by exporting beer to countries such as France, Italy and the United States. Substantial income also is generated from the sale of its Lembeeks,



Fermenting beer in open containers at the De Koninck brewery.

the first light Gueuze (1.6 percent alcohol by weight, 2 percent by volume), produced in a joint venture with the Palm brewery.

Better known is the Cantillon brewery in downtown Brussels, which produces beers as stubborn and assertive as their creator, Brewmaster Jean-Pierre Van Roy. His beers exhibit a more pronounced, rougher acidity than most other lambics. One of the brewery's most famous creations is the Rosé de Gambrinus, a winelike fruit lambic made with raspberries and cherries. When visiting the brewery in 1994, Van Roy proudly offered me a bottle of his latest experiment, which he called Saint-Lamvinus, a name referring to both the wine and beer origin of this brew. It was made by aging six barrels of his best lambic with 400 pounds of the famous wine grapes of the Saint-Emilion vineyard in France. The result was an incredible blend of beer and wine, with a nice red color and head. Initially the beer tasted sour and strong as a lambic with its typical aroma, but gradually, as the glass warmed up in my hands, the subtle fruitiness of the grapes came through. Whether this new style will ever be sold commercially is yet to be decided. Because the wooden barrel used for blending and aging was contaminated with both wine and beer yeast and had to be destroyed, this one-time experiment was quite expensive.

Van Roy, in his fight for the conservation of lambic beers, has turned his brewery into a living museum. Visitors can witness the entire brewing process and twice a year even partake in the actual mashing and boiling of the wort. Some of the Cantillon beers are now being sold in America.

A Brewing Counter Culture

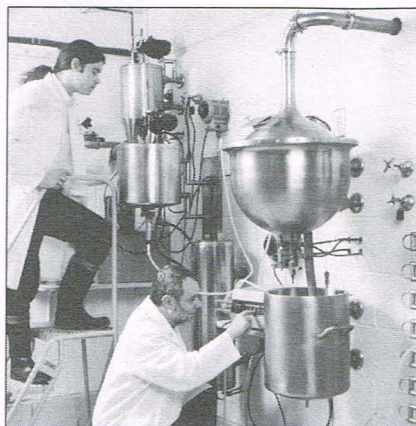
The future of Belgian beer would be a dismal one if the industrial brewers keep changing the landscape toward a market of mass-produced beer, even though Belgium has strengthened its position in Europe as a beer-producing country. Fortunately, this new mass-production phenomenon has induced a counterculture. Many independent breweries like De Koninck responded to the challenge by keeping a strong personal relationship with their customers. Other brewers, like Boon and Van Roy, revived the popularity of

a classic beer style and, thanks to a worldwide interest in their products, made an old-fashioned brewing tradition profitable again. Beer drinkers in Belgium also have become more discriminating. In Antwerp, the Objectieve Bierproevers (Objective Beer Tasters) established themselves as the first Belgian beer consumers organization. Just like CAMRA (Campaign for Real Ale) in England, they are actively involved in promoting and supporting traditional Belgian beers. With the opening of more and more quality-minded micro-

breweries (and even brewpubs these days), it looks like Belgian beer is headed toward a bright future of authenticity and diversity.

Jan Maes, a citizen of Belgium (with no connection to the Maes brewery), has been in the United States for three years. For one year he was manager of the Wine and Hop Shop, the oldest homebrew store in Denver, Colo., and is currently a research associate at Somatogen, a company developing an artificial blood substitute. Jan has been homebrewing for four years.

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 312/463-3400 Fax 312/463-7688

Brewing Better Belgian Ales

By Phillip Seitz



Interest in Belgian beer has blossomed in the past few years. At the same time many of the yeasts and specialty ingredients needed to make them have appeared on the homebrew market, and more people are deciding to brew Belgian-style beer every day. Like a lot of people, I've been trying for some time to capture a taste of Belgium in my own home. In the process I've poured my share of beer down the drain, but with luck, this article will spare you some of the same trauma and start you on the road to brewing quality Belgian-style beers.

I'll focus on four popular styles: doubles, triples, strong ales and white beers. The first three have a lot in common and make wonderful cool-weather drinking; the last will get you through the summer in style.



Doubles

Doubles (dubbels) originated as a Trap-pist style but now are made in secular brew-eries as well. A good double will be malty and sweet with a noticeable plum charac-ter, range in color from dark amber to brown and have an original gravity from 1.060 to about 1.070. This is not a light beer, so mod-est alcohol flavor is permissible as are low levels of fruity-tasting esters. But the sweet, plumlike character should predominate in both the palate and the nose.

These beers are usually full-bodied with fairly mousseline carbonation that produces a very nice head. Bitterness levels vary from non-existent to low (about 15 IBU at most). Commercial examples available in the Unit-ed States include Westmalle Dubbel (5.1 per-

cent alcohol by weight, 6.5 percent by volume), Grimbergen Dubbel (4.9 percent alcohol by weight, 6.2 percent by volume), Steenbrugge Dubbel (5.1 percent alcohol by weight, 6.5 per-cent by volume) and Affligem Dubbel (5.5 per-cent alcohol by weight, 7 percent by volume).

Almost all Belgian brewers use Pilsener malt as the base malt for their beers. For dou-bles a substantial amount of caramel malt is added for color, sweetness and flavor. The Belgian caramel malts now on the market work especially well here, particularly the CaraMunich and Special "B" because they provide some of the plum and raisin flavors necessary for the style. One pound (0.45 kilograms) of CaraMunich and a half pound (0.23 kilograms) Special "B" make a good starting point for a five-gallon (19-liter) batch, and you can adjust the quantities to your liking in subsequent batches.

Candi sugar is added to keep the body comparatively light for the strength and to provide some alcoholic warmth.

Start with one-half to
one pound

(0.23 to 0.45 kilograms) in the kettle for a five-gallon (19-liter) batch. Roasted malts can be used in very small amounts to deep-en the color, but there shouldn't be any roasty flavors in the finished beer. Toasted malts like biscuit, aromatic and Munich con-tribute pleasantly malty or nutty flavors, and can be used in fairly high quantity. Try two pounds (0.91 kilograms) of toasted malts for a five-gallon (19-liter) batch. Their use, how-ever, requires mashing.

Hop selection offers plenty of flexibility, but you should lean toward the "noble-type" rather than varieties like Cascade. Keep the bitterness low and be sparing with late ad-ditions so any hop flavors blend in and don't stand out too much.

Yeast choice offers some flexibility, though strains with a smooth, fruity character com-plement the raisin/plum flavors of the caramel malts better than yeasts yielding spicy flavors. None of the readily available yeasts are per-fect for this, but either of the Belgian Wyeast strains will work. Ferment at temperatures below 65 degrees F (18 degrees C), prefer-ably around 60 degrees F (16 degrees C).

In June 1994 Brewers United for Real Potables (BURP) of Vir-ginia sponsored a month-long advanced course on judging

Belgian beers during which the following guidelines were developed. Draft versions of the guidelines were then circulated to beer judges via Internet's JudgeNet Digest, and the comments of many participating beer judges were incorporated. These are based on the current AHA categories, but we feel they provide more detail than the current guidelines. These descriptions pro-vide additional information for people who may not be familiar with these types of beer. The guidelines were used in BURP's Spirit of Belgium Homebrew Competition.

Doubles

Original Gravity (Balling/Plato)	1.060–1.070 (15–17.5)
Percent alc./wt. (alc./vol.)	4.7–5.9 (6–7.5)
International Bittering Units	18–25
Color SRM	10–14

Dark amber to brown. Sweet malty aroma. Faint hop aroma OK. Medium to full body. Malty, plumlike flavor. Very low bitterness, no hop flavor. Medium to high carbonation. Low esters OK. No roasted flavors or di-acetyl.

DESCRIPTION: Doubles should be malty and sweet with a noticeable plum charac-ter. Modest alcohol flavor is OK, as are low levels of esters, but the malt flavors should predominate. Doubles are usually lighter in body than their maltiness would suggest, with a fairly moussy carbonation that pro-duces a very nice head.

Triples

Original Gravity (Balling/Plato)	1.080–1.095 (20–23.75)
Percent alc./wt. (alc./vol.)	5.5–7.9 (7–10)
International Bittering Units	18–25
Color SRM	3.5–5.5

Light or pale color. Low ester, malt or hop aroma OK. Medium to full body. High car-bonation. No diacetyl. Strength should be evident; alcohol flavor OK.

DESCRIPTION: This is a strong, very pale beer with a relatively neutral character. These beers should have low esters (by Bel-gian standards), and comparatively light body and flavor for their strength. Fre-quently they are somewhat sweet. Alcoholic strength should be evident, followed by a subtle mix of yeast products and hop and malt flavors. Some commercial examples are well hopped, but most are not. Some spicy (phenol) character is OK. High car-bonation levels are the norm.

Extract brewers can't use the toasted malts, but otherwise should be able to produce a nice malty brew. Start with pale extract and a hefty infusion of Belgian caramel malts, add sugar to the kettle and choose your yeast with care.

Because doubles are very effervescent, brewers should prime with seven-eighths to one cup (125 to 150 grams) of corn sugar for a five-gallon (19-liter) batch.

Triples

Triples (tripels) also come from Trappist roots. These are strong, pale beers with a neutral aroma and comparatively light body and flavor for their strength.

Strong Ale	
Original Gravity (Balling/Plato)	1.062–1.120 (15.5–30)
Percent alc./wt. (alc./vol.)	4.7–9.4 (6–12)
International Bittering Units	16–30
Color SRM	3.5–20

Pale to dark brown. Low hop bitterness and aroma OK, but should blend with other flavors. Medium to high esters in flavor and aroma. Phenols OK. Often highly aromatic. Spices or orange OK. Strength evident, but alcohol flavor subdued or absent. Medium to full body, sometimes with a high terminal gravity. Medium to high carbonation. No roasted flavors or diacetyl.

DESCRIPTION: Should be formulated to show off yeast character, with all other ingredients playing a supporting role. The flavor may be subtly complex, but should not be crowded. Body is comparatively light for beers of this strength, due to use of brewing adjuncts or of Pilsener malt only. High carbonation also helps; these beers should feel like mousse on the palate and have an impressive head. The best examples may be noticeably strong but still have no alcohol flavor. Flemish examples tend toward higher terminal gravities (1.025–1.050, 6.25–12.5°P). Trappist and Saison clones should be submitted in this category.

Frequently they are slightly sweet. With original gravities of 1.080 to 1.095, the alcoholic strength will be evident but smooth, followed by a subtle mix of yeast, hop and malt flavors. High carbonation levels are the norm, sometimes reaching 3.5 volumes of CO₂. Commercial examples available in the United States include Brugse Tripel (7.5 percent alcohol by weight, 9.5 percent by volume), Affligem Tripel (7.1 percent alcohol by weight, 9 percent by volume), Grimbergen Tripel (6.5 percent alcohol by weight, 8.31 percent by volume), Westmalle Tripel (6.4 percent alcohol by weight, 8 percent by volume) and Steenbrugge Tripel (7.1 percent alcohol by weight, 9 percent by volume).

To keep the color light you'll need to use Pilsener malt or light malt extract, sugar and nothing else. These beers also have a very light body for their strength, which is directly attributable to the use of large quantities of highly fermentable adjuncts. Sugar and corn are the most common and allow the beer to attain higher strength

White Beers

Original Gravity (Balling/Plato)	1.044–1.055 (11–13.75)
Percent alc./wt. (alc./vol.)	3.5–4.3 (4.5–5.5)
International Bittering Units	15–22
Color SRM	2–4

Cloudy yellow color, coriander flavor and mild acidity essential. Wheat and bitter orange peel flavors desirable. Mild hop flavor and aroma OK. Low to medium bitterness. Low to medium body, medium or higher carbonation. No diacetyl. Low to medium esters.

DESCRIPTION: These beers should be average in gravity with a definitely hazy yellow color and a dense, rich, dazzlingly white head. May or may not have a slightly orangy aroma (due primarily to the coriander), or mild hop aroma (preferably floral rather than spicy). Body should be medium or a bit lighter, and the carbonation should be reasonably aggressive. Bitterness should be low, mild acidity is essential, no alcohol flavor. Esters are OK, but shouldn't predominate. Should be very drinkable.

without adding heaviness to the body. With a triple you can count on using two or more pounds (0.91 kilograms or more) of a light-colored sugar — corn sugar for instance — for every five gallons (19 liters) of beer. Hopping levels should be kept low (from 18 to 25 IBU), with classic varieties such as Saaz and Hallertauer preferred. Because this beer doesn't usually have much hop aroma, most of your hops should be added at the beginning of the boil. Pick a Belgian yeast like Wyeast 3944 that ferments well but has a relatively low aromatic profile. Keep in mind that you want a yeast that can handle high gravities without producing too many fusel alcohols, or your beer will end up a headache in a bottle. [Individual reactions to fusel alcohols vary as does scientific evidence confirming or denying the connection of fusels to headaches. —Ed.]

Triples are highly carbonated, and one cup (150 grams) of sugar should be used to prime a five-gallon (19 liter) batch. It's a good idea to add some fresh yeast at bottling time to help with carbonation. Just add one pint of yeast starter to your bottling bucket along with the sugar solution and finished beer.

Strong Ale

The Belgian strong ale category covers a lot of ground. According to Belgian tax law this includes everything with an original gravity greater than 1.062 (including doubles and triples), but most Belgians refer to the strong ales as specials. Strong ales can be light or dark, and sweet or dry. Only rarely do they have hoppy or roasted flavors, which don't have much appeal for the Belgian drinking public. Usually they're wonderfully aromatic and derive most of their enticing flavor and aroma from the yeast and from a restrained blend of spices, hops and malts. Coriander and orange peel are frequently included, and sometimes anise is used. Original gravities range from 1.062 to 1.120 (though usually closer to 1.080 or 1.090), and the best examples may be noticeably strong but still have no alcohol flavor. Flemish examples tend toward higher terminal gravities (1.025 to 1.050) and are therefore sweeter, while Walloon versions are usually more attenuated and drier.

White Beers

Fortunately there are a lot of commercial examples available in this country. Included among them are Corsendonk Blond (6.4 percent alcohol by weight, 8 percent by volume), Corsendonk Brown (6.4 percent alcohol by weight, 8 percent by volume), Saison DuPont (5.1 percent alcohol by weight, 6.5 percent by volume), Gouden Carolus (5.5 percent alcohol by weight, 7 percent by volume), Scald-is (9.4 percent alcohol by weight, 12 percent by volume), Duvel (6.7 percent alcohol by weight, 8.5 percent alcohol by volume), Brig-and (7.1 percent alcohol by weight, 9 percent by volume), Pauwel Kwak (6.4 percent alcohol by weight, 8 percent by volume), Celis Grand Cru (7 percent alcohol by weight, 8.9 by volume), Mateen (7.1 percent alcohol by weight, 9 percent by volume), Artevelde Grand Cru (5.3 percent alcohol by weight, 6.7 percent by volume) and Chouffe (6.3 percent alcohol by weight, 8 percent by volume).

Yeast should provide the foundation flavors for these beers, and all other ingredients should be added to support or accentuate this. Tasting other beers made with the yeast you are considering using should help with recipe formulation.

Use Pilsener malt as a base, but you may also want to try adding substantial quantities of sugar or flaked corn as an adjunct; count on using at least a pound (0.45 kilogram) of one or the other in a five-gallon (19-liter) batch, and a pound of each isn't too much. Caramel, Munich and toasted malts often are used in small quantities to add color, fullness or flavor accents; roasted malts are sometimes used in very small amounts for coloring only. All classic hop varieties are common, but are used in small and judicious quantities. Sugars are added in the kettle, as are spices. Because many spices have delicate aromas, they should be boiled only for a few minutes.

Extract brewers will do fine in this category. Steep judicious quantities of caramel malts then add pale extract and sugar (one to two pounds, 0.45 to 0.91 kilograms) to the kettle.

The secret for either brewing style is to choose the right yeast and keep your ferment as clean as possible. Prime with seven-eighths cup (125 grams) of sugar for five gallons (19 liters). Adding fresh yeast at bottling time is a good idea because of the high alcohol content of the beer.

White beers are another matter. These are wheat beers intended for summer consumption with original gravities ranging from 1.044 to 1.055. The grist typically is 50 percent barley malt and 50 percent unmalted wheat, although sometimes a small quantity of oats is added. The finished beer should be golden when warm and a very cloudy yellow when chilled. Coriander usually is added in substantial amounts, and most commercial examples are mildly acidic — both contributing refreshing qualities.

As with most Belgian styles, white beers are rarely bitter or hoppy, and unlike the styles listed above you shouldn't taste any alcohol. Carbonation is usually about average or a little higher, and some versions show a bit of yeast character. Commercial examples include Celis White (3.7 percent alcohol by weight, 4.7 percent by volume), Riva Blanche (3.9 percent alcohol by weight, 5 percent by volume) and Blanche de Bruges (3.9 percent alcohol by weight, 5 percent by volume).

Extract brewers will have a hard time getting the traditional yellow color and won't be able to add oats, which require mashing. But if you use 50 percent wheat extract and follow the guidelines below you will still have a very distinctive and satisfying beer.

For all-grain brewers, making a white beer is the ultimate adventure. Use 50 percent raw unmalted wheat (by weight), and if you're interested you can add 5 percent oats for some silkiness. Rolled oats work fine as an alternative to whole oats. Unmalted wheat or wheat berries are available in many health-food stores and food co-ops. There's debate whether the soft white or hard red varieties are preferable, but both seem to work. One thing is indisputable: the stuff is a nightmare to grind by hand. Grinding unmalted wheat in my Corona mill is like grinding rubber bullets. Find someone with a two-roller mill or a mechanized grinder to help you out.

The secret to making white beers is an extended protein rest. Museums use wheat starch as a glue, and once you mash-in you'll understand why. Start with a loose mash using two quarts (4.2 liters per kilogram) of water per pound of grist, and plan on using a protein rest of 45 minutes to one hour at

temperatures between 117 and 126 degrees F (47 and 52 degrees C). You'll be amazed how well the proteolytic enzymes work, turning a mass of wallpaper paste into a light, workable mash. Never has the miracle of mashing been better demonstrated.

This extended protein rest includes a trade-off. Keep in mind that wheat has no husk and is filled with proteins and gluey starches. If you run the protein rest longer — one hour — you'll break down more of these and get an easily spargeable mash. But it also produces a clearer beer that may be less hazy and lack the color you want. Rests of 45 minutes or less give wonderful color, but can be sticky to lauter. I use a 45-minute rest and watch the lauter-tun carefully.

If you're a nervous brewer and are willing to sacrifice some authenticity, you also can substitute several pounds of malted wheat for a portion of the unmalted variety. Some people have used decoction mashes to handle the wheat. This will certainly work, but is not the traditional method and involves additional labor.

For hopping I prefer floral varieties such as East Kent Goldings or Styrian Goldings, but nearly all the "noble-type" hop varieties work, including Hallertauer and Saaz. Keep your hop levels around 18 to 20 IBU, and since this can be an aromatic beer, you may want to include a late hop addition.

You'll also need bitter orange peels and ground coriander. These are described in more detail below, but you'll want to start by boiling a third of an ounce (9 grams) of bitter orange, for about 20 minutes, and an ounce (28 grams) of ground coriander, for about five minutes, then you're ready to chill and ferment.

Almost any yeast seems to work, ranging from neutral American ale yeasts to German wheat beer strains and the more adventurous Belgian cultures. Creativity counts, so if you have an interesting idea you should give it a try.

Mild acidity is a classic feature of a good white beer. The brave can attempt a fermentation that includes lactic acid bacteria, but there's an easy shortcut: add a very small quantity of 88 percent lactic acid to your beer at bottling time. Amounts between one and three teaspoons (five and 15 milliliters per five gallons (19 liters) work well. Be aware that the acid will need some time to blend with the other flavors, usually about two months.

Brewing and Fermenting Belgian Ale

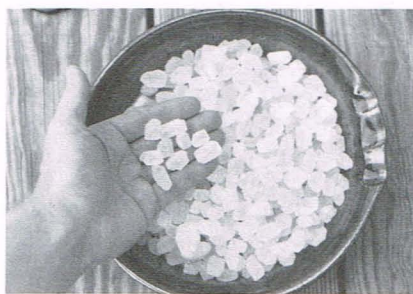
All-grain brewers may wonder which mashing techniques to use. Different Belgian breweries use them all: infusions, step and decoction mashes. You're welcome to experiment, but you shouldn't have any problems using a simple infusion or step mash. I suggest including a 15-minute protein rest at 120 degrees F (49 degrees C) and a 10-minute mash-out at 170 degrees F (77 degrees C). Even with fully modified grains this appears to improve yield, clarity and fermentation. Some Belgian breweries use multiple saccharification rests, starting with one at about 145 degrees F (63 degrees C) and then moving to one at about 160 degrees F (71 degrees C). This territory is wide open for experimentation.

To ferment high-gravity worts your yeast will need a lot of help or you will suffer the indignity of a stuck ferment. Believe me, it's very sad to watch your beer drop from 1.092 to 1.050, then have it sit there as the yeast goes on strike. Even if your ferments don't stick, yeast needs to be in good health to get the clean flavors you want in a Belgian-style beer.

To avoid headaches — literally — keep a few things in mind:

☒ **Pitch a lot of yeast.** Count on using at least 1 1/2 quarts (1.42 liters) of yeast starter in anything you brew. For beers in the 1.080 range you can double that. To avoid diluting your beer you can make the starter well ahead of brewing time and let the yeast settle out. Pour off the clear liquid above the settled yeast and add a pint of fresh wort just before you start to brew. You'll have lots of active yeast ready to go by pitching time, and your total fluid addition volume will be quite small.

☒ **Aerate.** When fermenting strong beers the health of the yeast is as important as quantity. Splashing wort as you transfer it into the fermenter is a start, but it won't solve your problems. Many homebrew supply shops sell aquarium pumps with in-line air filters, and if you're serious about brewing Belgian beers you should invest the \$15 or \$20. With 30 minutes of aeration just after pitching, your lag times will be reduced and ferments will improve dramatically no matter what kind of beer you're brewing.



Light candi sugar. Candi sugar is the most common form used in Belgian brewing. Basically it is just rock candy.



Dark candi sugar. You can get light or dark candi sugar in liquid solution or various sized chunks.

☒ **Watch your fermentation temperatures.** Fermenting high-gravity worts at elevated temperatures is a prescription for headaches, the kind that come in a bottle. If you're brewing beers with original gravities higher than 1.060 you definitely need to keep the ambient temperature below 65 degrees F (18 degrees C). Remember that fermentation creates heat all by itself, so your beer is going to be warmer than the place you put it. The stronger the beer you make, the cooler you want to keep it while it's fermenting. I use a thermostat-controlled refrigerator for fermentation, and for beers like these I usually set it to 60 degrees F (16 degrees C). If you've chosen a good yeast you'll still get plenty of flavor when you ferment at this temperature.

In Pierre Rajotte's book, *Belgian Ale* (Brewers Publications, 1992), he mentions that some Belgian breweries use warm and even hot fermentations. This is true but, trust me, if you try it at home you're going to be sorry.

White beer fermentations don't require any unusual attention, although some of the commercial white beer yeasts get a bit sluggish when fermentation temperatures drop below 65 degrees F (18 degrees C).

Special Ingredients

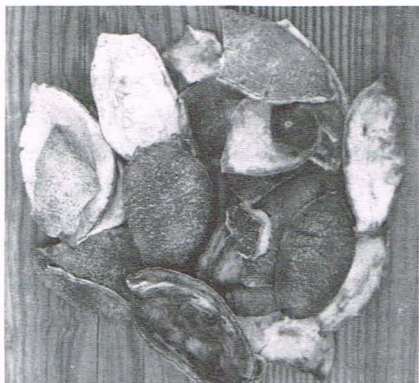
Sugar plays an essential role in Belgian brewing. Because it ferments almost completely, it allows you to brew strong beers without the heavy body typical of barley wines. For all-grain brewers, using sugar also lets you brew at original gravities that exceed your mashing and lautering capacity. My Zapap lauter-tun fills up with 15 pounds of grain, but by adding sugar to the kettle I can increase either the gravity or the quantity of the finished wort. Candi sugar is the most common form used in Belgian brewing. Basically it is just rock candy. You can get light or dark candi sugar in liquid solution or various sized chunks. It has little flavor other than a clean sweetness and provides the same number of gravity points per pound as corn sugar. Light candi sugar adds little or no color and the dark stuff — at least what I've bought from Belgian supermarkets — doesn't provide much color either. When you make up your recipe you can assume that dark candi sugar delivers about 20 °L per pound. If you can't find any, go ahead and substitute any other neutral-tasting sugar, and definitely relax, don't worry, have a homebrew.

Coriander is a Belgian staple. Just about any kind should give a very pleasant orange-like flavor and aroma. For best results you should buy fresh coriander seeds and grind them to a powder with a mortar and pestle (food processors grind too coarsely). Whole seeds are available at health-food and ethnic grocery stores.

If you're using coriander in a strong ale you're probably trying to add a relatively subtle extra flavor. Half an ounce (14 grams) works well for five gallons (19 liters); add it for the last five minutes of the boil. If you want lots of coriander flavor and aroma use one ounce (28 grams), particularly for white

Coriander is a Belgian staple. Just about any kind should give a very pleasant orangelike flavor and aroma.

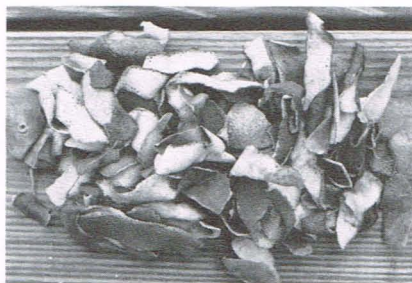




Bitter orange peels, also known as Curaçao oranges, come in greenish gray chips or quarter-of-an-orange slices.

beers. Boiling coriander too long (more than 15 minutes) or grinding it too coarsely will reduce the flavor and aroma.

Bitter orange peels come in greenish gray chips or quarter-of-an-orange slices. They also are known as Curaçao



Sweet orange peel usually comes in strips or ribbons, as if someone peeled an orange in one piece.

oranges, and despite their name they are not very bitter and do not taste much like orange. Instead, they give a nice herb-tea flavor resembling chamomile.

Bitter orange is used in white beers. Start with 0.1 ounce of peel per gallon of beer you plan to make (0.5 grams per liter). This is about one-third of an ounce (9 grams) for a five-gallon (19-liter) batch. If you want more you can go up to a full gram per liter. I usually boil the peels for about 20 minutes.

Don't substitute ordinary orange peel or your beer will have a peculiar hamlike aroma. The bitter peels can sometimes cause this aroma. To see what the peel will smell like, boil some dried peel in a small pot of water.

Finally there is sweet orange peel, which is not the supermarket variety, either. Usually it comes in strips or ribbons, as if someone peeled an orange in one piece, and is thinner and more orange in color than the bitter peels. Use it in strong ales in roughly the same quantities as bitter orange in white beers and it will produce a heavenly orange flavor very similar to Cointreau or Grand Marnier. This goes well with some of the Belgian yeasts and particularly well with coriander. Again, boil it for 20 minutes.

Unfortunately, at the time I'm writing this sweet orange is only available in Belgium and cannot be purchased in the United States. A number of people are looking into importing it, so tell your homebrew dealer you want it. This is the last important Belgian brewing ingredient that is not available to homebrewers in America. (Some people have had success substituting tangerine peel.)

Recipes

Andy Anderson's Aaron's Abbey Ale (slightly revised)

Ingredients for 5 gal (19 L)

- 9 lb Belgian Pilsener malt (4.08 kg)
- 2 lb Belgian biscuit malt (0.91 kg)
- 1 lb Belgian CaraMunich (0.45 kg)
- 4 oz Special "B" malt (113 g)
- 1 lb dark candi sugar (0.45 kg)
- 1 2/5 oz Tettnanger hop pellets,
4.4% alpha acid, goal is 25 IBUs
(39.7 g) (60 min.)
- 1/2 oz Hallertauer Hersbrucker
hop plug, 2.9% alpha acid (14 g)
(five min.)
- 1 tbsp Irish moss (14.8 mL) (15 min.)
- 1 qt Chouffe yeast starter (0.95 L)

- 1 pt Chouffe yeast (0.47 L) (add
with priming medium)
- 4/5 cup dextrose (120 g) (to prime)

- Original specific gravity: 1.065
- Final specific gravity: 1.014

The malt bill assumes an extraction rate of 25 points per pound, so adjust to fit your brewing setup. Mash with a protein rest for 30 minutes at 120 degrees F (49 degrees C). Boost temperature straight to 158 degrees F (70 degrees C) for saccharification. Hold until conversion is complete.

Mash-out at 170 degrees F (77 degrees C) for 10 minutes and sparge with 170-degree-F (77-degree-C) water. Ferment at 60 degrees F (16 degrees C).

Note: The original recipe (of which this is a variation) took first place at the Home Wine and Beer Trade Association competition in 1994.

Delano Dugarm's Batch #28 Triple

Ingredients for 5 gal (19 L)

- 9 9/10 lb (3 boxes) Northwest Gold
liquid malt extract (4.49 kg)
- 1 1/2 lb corn sugar (0.68 kg)
- 1 3/10 oz Hallertauer hops,
4% alpha acid (36.8 g)
(60 min.)
- 3/10 oz Saaz hops, 3% alpha acid
(8.5 g) (60 min.)
- 3/10 oz Saaz hops, 3% alpha acid
(8.5 g) (two min.)
- Wyeast No. 1214 Belgian yeast
- 3/4 cup corn sugar (113 g)
(to prime)

- Original specific gravity: 1.080
(est.)
- Final specific gravity: not taken

Boil for 60 minutes, cool and pitch slurry from 1 1/2-quart (1.42-liter) culture. Ferment very cool (60 degrees F or 16 degrees C). Rack to secondary and bottle when ready.

Jeff Frane's Strong Ale

Ingredients for 5 3/4 gal (22 L)

- 9 lb DeWolf-Cosyns Pilsener malt (4.08 kg)
- 3/5 lb DeWolf-Cosyns aromatic malt (0.3 kg)
- 1 lb DeWolf-Cosyns CaraMunich malt (0.45 kg)
- 1 lb flaked maize (0.45 kg)
- 1 1/2 lb light candi sugar (0.68 kg) (75 min.)
- 1/4 oz Saaz hops, 3% alpha acid (7 g) (60 min.)
- 1 oz British Columbian Golding hops, 4.1/2% alpha acid (28 g) (15 min.)
- 1 oz Mount Hood hops, 3.5% alpha acid (15 min.) (28 g)
- 1/2 tbs rehydrated Irish moss (7.4 mL) (75 min.)
- Wyeast white yeast No. 3944
- 1 cup corn sugar (150 g) (to prime)
- Original specific gravity: 1.062
- Final specific gravity: 1.012 (est.)

Mash-in the malts (not the maize) at 98 degrees F (37 degrees C) in 3 1/2 gallons (13.25 liters) water and adjust pH. Raise to 120 degrees F (49 degrees C) and hold for 30 minutes. Raise to 153 degrees F (67 degrees C), add maize and hold until conversion, about 45 minutes. Raise to 175 degrees F (79 degrees C) for 15 minutes for mash-out.

Rick Garvin's Cherry Blossom Wit

Ingredients for 5 gal (19 L)

- 4 lb Pilsener malt (1.81 kg)
- 3 3/5 lb unmalted wheat (1.63 kg)
- 2/5 lb rolled oats (181.4 g)
- 9/10 oz Styrian Goldings hops, 6.2% alpha acid (25.2 g) (60 min.)
- 1/2 oz bitter orange peel (14.5 g) (20 min.)

- 2/5 oz Saaz hops, 3.2% alpha acid (10.2 g) (five min.)
- 1 1/4 oz ground coriander (five min.) (35 g)
- Wyeast White yeast No. 3944
- 3/4 cup corn sugar (120 g) (to prime)

- Original Specific Gravity: 1.048
- Final specific gravity: 1.008

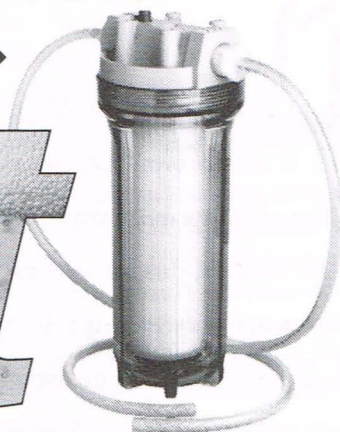
Mash-in at 117 degrees F (47 degrees C). Rest 20 minutes at 117 degrees F (47 degrees C).

C) and 122 degrees F (50 degrees C). Rest 60 minutes at 146 degrees F (63 degrees C). Mash-out at 160 degrees F (71 degrees C). Boil 30 minutes before the first hop addition.

Note: This uses a lot of coriander. Use less if you are faint of heart.

Phillip Seitz is the curator/historian/archivist/librarian of a small medical museum in Alexandria, Va., an all-grain brewer, Recognized BJCP judge and member of BURP (Brewers United for Real Potables). He has visited Belgium eight times since 1987 and can't wait to go back. ☺

At Last, A Homebrewer's Kit Guaranteed to Make Even the Best Beer Look Better. And Taste Better.



Too bad your beer sometimes doesn't look as good as it tastes. Or maybe, even worse, it ends up tasting just the way it **does** look.

That's why you need "The Kit." Here's everything you need to remove bacteria, yeast sediment, and chill haze—for up to 250 gallons of beer—all in one fool-proof, professional-quality filtration kit. You get a rugged, clear plastic housing, a 0.5 micron high-efficiency polypropylene cartridge, fiberglass-reinforced nylon tubing, and fittings to connect to 1/4" hosebarb. Extra filter cartridges are available.

At just around 80 bucks, it's a steal.

Call **1-800-828-1494** today and order "The Kit." In no time, you'll have your beer living up to the highest standards. Yours.

The Filter Store Plus

P.O. Box 425 • Rush, NY 14543

ENHANCE YOUR BEER-DRINKING

Pleasure WITH THE Proper Glass

BY MARK R. ANDERSON

What type of vessel should beer be served in to enhance overall drinking pleasure? Most of us have used a variety of vessels: water tumblers, glass mugs, ceramic or metal steins and maybe even expensive crystal wine glasses. With a look at the shapes and materials of drinking vessels for beer, and a bit of historical background, we can ferret out what is appropriate for enjoying beer.

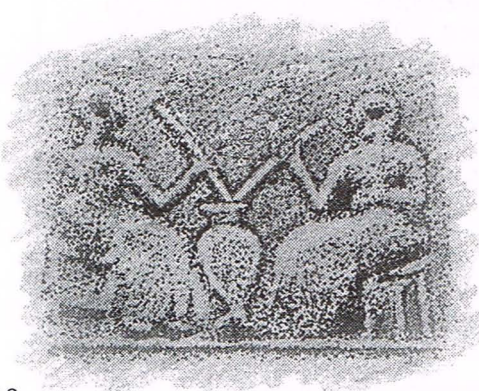
Earliest Times

Before there was a Trappist order, before the Etruscans became kings and long before the Egyptians began using slave labor there was a place called Sumeria. Sumerians gave humankind many good things: seconds, minutes, months and beer with which to pass the time until the next harvest of barley to brew more beer. Because Sumeria was the first city-state, folks were still fresh off the trail and gravitated toward group activities. Drinking beer, or broth as they called it (beer was food to them), was a communal activity. A large, thin-necked vessel of pottery was used to hold the brew and each person had a straw with which to drink. If you were rich enough, your straw was made of silver or gold.

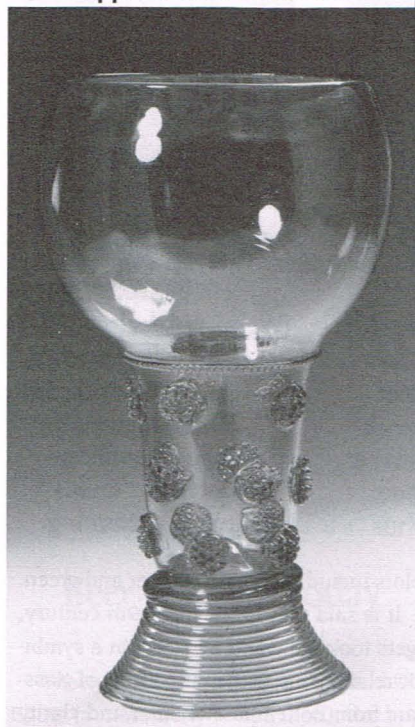
As society became more stratified, new ways of drinking beer emerged. In Egypt, communal drinking from large pots gave way to tavern drinking from clay cups and eventually drinking alone led to admonitions against drunkenness. One warning in Egyptian hieroglyphics translates as "make not thyself helpless in the drinking in the beer shop ... Falling down thy limbs will be broken. No one will give thee hand to help. As for thy companions in the swilling of beer they will get up and say, 'Away with the drunkard!'" Sound familiar?

Middle Ages

Much of the history of brewing and beer-related activities is traced to the Middle Ages. The reason is because monasteries kept records of their breweries. While monks kept busy making beer and copying old texts, Western Europe began the long process of developing a social structure that led them to a rebirth. It was during the climb out of the medieval times to the



RÖMER (RUMMER)
(Germany or Netherlands,
mid-17th century)
Green glass.
Applied burls of berries



KRAUTSTRUNK
(cabbage-stalk)
(Germany,
15th century)
Green glass.
Three rows of
applied prunts.



SCHNELLE
(Siegburg,
dated 1582)
White-gray
salt-glazed
stoneware.
Pewter lid.
Three high
reliefs.



PLANET TANKARD
(Creussen, dated 1665)
Brown salt-glazed stoneware.
Enamel painting. Pewter mountings.
Applications, lettering.

Renaissance that all areas of culinary experience began coalescing. Table manners were adopted (for example, no passing of wind at the table), Catherine de Medici introduced distillers and the fork to France and various crafts developed, prospered and formed into guilds. The development of trades that produced drinking vessels: pottery, glassmaking and metallurgy, led to enhanced drinking pleasure. Outside of monasteries, homebrewing was most common until villages became permanent and substantial. The 14th century was the turning point in Northern Europe from rural to city brewing. Materials used for drinking vessels varied widely. Wood, leather, pottery and porcelain, glass, silver or pewter were used to make beer mugs and tankards.

The differentiation between plain and fancy drinking ware was solely a function of ornamentation. The shapes and materials used were relatively uniform. Materials were chosen for their availability rather than their appeal.

In the Northern forests of Germany, glass was made with local sand that contained iron

and gave a green color. Purified with ash containing copper oxide from wood fires, the glass became glossy. Even today when iron-free sand is available for clear glass, Forest glass or Wald glass is produced because of traditional preference. This green glass was used in the development of Rhine wine glasses in use today.

A side development of Northern Forest glass production was the reduction of famine by the increase of arable land. Glassmakers would set up shop, temporarily or permanently, next to abbeys or manor houses. They cleared forests for the fires to produce the huge cylindrical beakers popular at the time. Some beakers held up to three liters. The major feature of these beakers was raised bumps or "prunts" covering the glass so a diner with greasy hands could get a good grip in the days before forks or napkins. The size of these huge drinking vessels prompted one minister in 1564 to include in his sermon against excess, "Nowadays one applies buttons, prunts and rings to glasses to make them sturdier. Thus they can be held more easily in the hands of drunken and clumsy people."

In Bohemia, Johann Mathesius made a similar observation about the huge tankards produced there. He called the tankards which averaged three liters "fool's glass that you can scarcely lift." These popular tankards were painted with bright enamel colors (a decoration technique of Islamic origin that came to Bohemia via Venice).

Stoneware vessels also developed because of the availability of materials. In the areas of Cologne, Siegburg, the Aachen region and Westerwald there was a vast output of ceramic ware at the beginning of the Renaissance because of the abundance of a local clay that fired as hard as stone.

With few notable exceptions, drinking vessels had a very basic and similar, roughly cylindrical, shape with most attention to esthetics being placed on glazing and painting. There were local variations including the very broad tankards of Saxony or the inverted conical Schnellen, a tall ceramic vessel that was broad at the base, narrow at the top. Drinking from the Schnellen required speed and practice to prevent a beer bath.



JUG
(Raeren,
second half
16th century)
Brown salt-glazed
stoneware.
Pewter lid.
Chip carving.



TANKARD
(Sweden?, 19th century)
Dark turned wood.
Carved animal scenes.
Toast wording.



TANKARD
(London, late 17th century)
Silver. Embossed decoration
added in 19th century.



TANKARD
(Westerwald, circa 1737)
Gray salt-glazed
stoneware.
Blue-painted.
Pewter mounting.
Incised and "knibis"
(zig-zag) patterning.

Modern Period

Until the 17th century there was no distinction between beer and wine vessels. Toward the end of the Renaissance, changes began to occur in the shape of drinking vessels. The English ale glass, developed in the early 17th century, was a stemmed flute very similar to the flutes used in Champagne at the time. This glass went through a long evolution including the short-lived dwarf ale glass (1690-1695), which had a three- to five-ounce (89- to 148-milliliter) capacity. There also were giant ale glasses more than 12 inches (30 centimeters) tall. Through the years the taper of the bowl straightened and the foot disappeared, leaving the modern English pint glass. In Germany, Wald glass beakers gave way to the Römer (Rummer)-style which had a flared or rounded bowl with prunts confined to the hollow stem. Rummern were very common and it is possible they evolved into the wide-footed goblets used today for Berliner Weiss.

The history of each glass style would be lengthy enough for a book. It is important to see beer's place in society and its glassware as the modern period emerged. Beginning about the time of the French Revolution (1789-1799), the modern period formed the western culinary world's present structure. How food is prepared and han-

dled, table settings, the brewing of beer and the making of wine were all organized and codified in ways we recognize today. When Napoleon seized power he instituted the Napoleonic Code prohibiting coach drivers from drinking with their passengers. An enterprising innkeeper in Belgium, who refused to miss a sale to thirsty coachmen, invented the Kwak glass, the foot-of-ale and yard-of-ale glasses familiar today. The innkeeper could hand up the tall glass to the coachman sitting high atop his coach.

One of the most revered treatises on culinary activity was penned during this period. In *The Physiology of Taste*, Brilliant Savarin pontificates on all the aspects of the table: how many guests to have at dinner, what time of day to eat what dish, the evils of coffee, the lure of chocolate, etc. Entries on wine were very sparse, indicating that its importance as a culinary gem was a far cry from the lofty height it occupies today.

During this period, many related events began. Bohemian crystal production took off like a rocket, lagers and refrigeration developed hand-in-hand, and the Industrial Revolution was full-blown in England and spreading, causing cities to spring up throughout Europe and America. In the late 18th century, glass mugs and tankards were common in America. They were made from the glass of old bottles and windows and came in many

colors including purple, amber and green.

It is said that in the mid-19th century, lagers took the world by storm in a symbiotic relationship to the outpouring of glassware from Bohemia. The color and clarity of lagers, especially Pilseners, could be shown off to their best advantage in clear glass. This is similar to the story of wine as a beverage of high-end dining. According to Emile Peynaud's *The Taste of Wine*, fine wine only emerged at the turn of the 18th century as a direct result of glasses being made that were better suited to tasting. A complete table service in the 19th century included Burgundy, claret (Bordeaux), Champagne, port, liquor glasses and water glasses. Sadly, beer glasses were missing.

By now, glass dominated all other materials for drinking vessels. Although ceramic steins remained popular, glass steins were more common for everyday drinking. Beer glasses, while not routinely placed on upscale tables, were making their presence known elsewhere. The rummer, a footed glass with a bucket-shaped bowl, was the most popular style of drinking glass used in Britain. It served as a beer glass, especially when it was engraved with images of hops and barley. The development of the glass pressing machine in the 1820s led to a greater variation in shapes, patterns and function. Around this time beer and wine glasses went their separate ways.



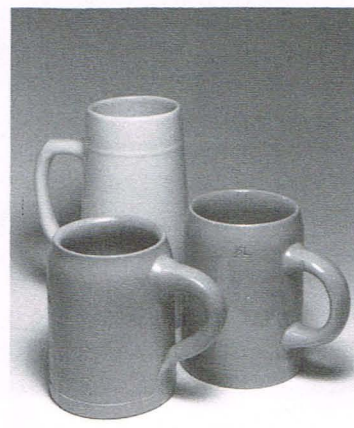
REGIMENTAL STEIN
(reservist tankard)
(Germany, 1910)
Porcelain; painted
"Infanterist Reib"



TANKARD
(Dingolfing, dated 1755)
Adam Trappberger
the Elder. Pewter.
Imperial eagle with
Bavarian coat-of-arms
and annotation in
surface engraving.



FOOTED BEAKER
(mid-19th century)
Colorless glass
with cutting.
Colored transparent
painting. Gilding.



MUGS
Porcelain mug prior
to decoration.
Coors Brewing Co., 1990s.
Ceramic mugs
from Germany.

Beer Glasses Today

When I first discovered Anchor and Dos Equis (a more hefty recipe then), the hour glass was the universal beer glass. It was a long search in the early 1980s to find the rare English pint glass. Now more drinking establishments have an increasing variety of glasses, though many still are limited. The most common glass today is the pint glass, probably adopted because it is heavy, durable and publicans can sell you 12 ounces of beer and call it a pint.

Glass has become the material of choice for beer vessels. Glass can be both durable like pint glasses or elegant like etched crystal. It is easily stamped or blown into any shape and has a pleasant nonporous surface with a tactile quality that the world has grown to love. The main reason for the dominance of glass is its peerless clarity. Part of the pleasure of gastronomy is to eat or drink with our eyes before we actually taste with our mouths. To see the beer, to admire its clarity, color, effervescence, white haze or black opaqueness is very important to our joy of imbibing. No other material will provide the total enjoyment of our brief moments of replenishment in this fast-paced world.

The only other material that has maintained any following for beer vessels is ceramic, used

almost exclusively for steins. Steins are associated with Germany, and many people think they are the only German drinking vessel. This is not the case; glass is the most common material for day-to-day drinking. Ceramic steins serve more ceremonial purposes. For instance, in the 1870s regimental steins were custom designed for German military units to commemorate victory in the Franco-Prussian war. Designed with names and dates, these steins were souvenirs and keepsakes. Keepsakes were not limited to the military, however. There is the story of a special "bed bug" stein commissioned by a wife who, feeling remorse for beating her drunken husband with a broom, gave the stein to him to commemorate her repentance. And why do steins have lids? According to Gary Kirsner, editor of *The Beer Stein Journal*, steins were required to have lids in order to keep flies out — this in accordance with sanitation rules following the Black Plague. In America today, the tradition of ceramic stein production is mostly associated with brewery advertising, beginning in the 1890s with Anheuser-Busch. Glass, not ceramic, is the material of choice in this country for day-to-day drinking or for special tastings.

Other materials still are used today for beer vessels, but mainly as curiosities for events like Renaissance fairs. Wood is rarely seen. Metals such as pewter, silver and copper are typical only in show pieces.

The Shapes

If glass is the most common material for beer vessels, what is the shape of that glass? In the United States, the most common shapes are the tumbler (often the hour glass), the straight-sided English pint glass and occasionally a type of Pilsener. In other countries the selection will vary, greater in Belgium, less in the Philippines, for example. Let's talk about a happy medium, Germany.

In Germany, there are both standard and specialty glasses. Standard glasses include either a glass mug/stein, simple tumbler or the liter (or half-liter) straight-sided glass with the slight bulge near the top. Specialty glasses include the following: the popular Pilsener glass, most often footed; the Bavarian wheat beer glass, very tall with a gentle outward slope from the bottom to a slight bulge, then a soft inward curve at the top; and the Berliner Weisse goblet, footed with wide shallow bowl.

When a serious discussion of glass shapes begins, it can only lead to one place — Belgium. The Belgians have more beer styles than anyone else, and more styles of glasses to accompany them. One beer traveler reports that in some Belgian bars, when you order a particular beer you may be informed that all the glasses for that beer are



being used. The bartender will ask you if you want to wait or try a different beer. A comprehensive look at Belgian beer glasses would be quite lengthy. Here is a summary of general shapes supplied by Wendy Littlefield of Vanberg and DeWulf, importers of Belgian beer and glassware: flutes for tart beers, goblets for abbey beers, flared tulips for Duvel (and its imitators), cordials for sweet/strong ales, tumblers for wheats and thistle and Kwak for wee heavies. These are just general shapes; the Belgians have a hundred or more glass styles for their beers.

Material and Shape

What's with all these glasses and shapes? You and I have had mighty tasty beer out of plastic cups. Some of us, being homebrewers, dismiss all this fancy stemware as a load of spent grain. We are only concerned with the beer, not the glass. Some of us, being homebrewers, are effete snobs and decry the use of any glass not designed specifically for the style at hand.

With increased proliferation of styles from domestic breweries, importers and resurrected styles (Belgian white and porter, for example), an increased awareness of style characteristics and their differences has spread through the discerning beer-drinking public. You may remember "varietal" wines? The wine never disappeared, but the emphasis on the term did, once there was a general understanding of what varieties were. People talked of red wine glasses vs. white wine glasses, proper serving temperatures and so on. With beer, serving temperatures and the amount of carbonation are commonly discussed topics, but guid-

ance for appropriate glassware selections is late in coming to the fore. What is an appropriate glass and what makes it so?

Riedel, one glassware company, is of the philosophy that each type of wine has a perfect glass shape to enhance it. Riedel began this philosophy in 1958 with the introduction of their Sommelier line Burgundy Grand Cru glass, now displayed in New York's Museum of Modern Art. The Riedel Burgundy glass holds 37 ounces (1 liter) and is designed to accentuate the acidic pinot noir wine by directing the flow of liquid onto areas of the tongue that are sensitive to sweetness, a concept based on the theory that taste buds sense sweet at the tip, bitter in the back, etc. What holds true for wine glasses should hold true for beer glasses. To my knowledge, there is no company marketing their beer glass line in the same way. The closest is Vanberg and DeWulf, who supplied me with the following sensory justification of each shape:

- ☒ **FLUTE GLASSES** are used to emphasize the vinous fruity qualities of tart beers like Rodenbach and bring the bouquet quickly to the nose.
- ☒ **WIDE GOBLET GLASSES** allow abbey beers to breathe and come quickly to proper temperature. The shape discourages excessive head and allows the drinker's nose into the glass when drinking.
- ☒ **DUVEL GLASSES**, which feature a flared tulip-shaped bowl, are sized to allow a single pour that allows sediment to remain in the bottle. It is reported that these glasses are intentionally chipped in the bottom to

cause a single stream of bubbles to rise in the middle of the glass. The rim allows head and beer to be drunk together, producing a velvety sensation.

- ☒ **CORDIAL GLASSES** for sweet/strong ales encourage the drinker to sip and savor the beverage.
- ☒ **THISTLE GLASSES** for wee heavies intensify aroma.
- ☒ **WHEAT GLASSES** are heavy tumblers shaped for hard gripping and fast thirst quenching in summer with minimal breakage.

Sources other than glass companies assert that the shape of glassware is important. Michael Jackson mentions a glass with a combined tulip/snifter shape prescribed by the Objectieve Bierproevers (Objective Beer Tasters), a Belgian consumer organization, as the perfect shape for "nose." In his *Good Beer Guide to Belgium and Holland* (CAMRA Books, 1994), Tim Webb's glassware recommendations include glasses with wide bowls for aromatic beers; tall narrow glasses for spritzzy aromatic beers; stemmed broad-bowled glasses, narrow at the rim for strong beers; thick glasses to keep summer wheat beers cooler; and tall glasses to "pamper the vanity of crystal clear Pilseners or pale ales."

All sources point out that these shapes are for social tasting, not for business tasting such as competitions and brewery quality control. Jackson mentions that in breweries, tasters use opaque mugs to disguise the visual recognition of beer being judged so the focus is on taste. The shapes presented are noted as being the best for use with a beverage of relatively known qualities for the sole purpose of maximum enjoyment. Maximum enjoyment of any consumable includes a visual element not connected to flavor except by memory. But what about the mechanics of shape and material? Do they really affect the flavor as various proponents claim? For rock solid information on the sensory effects of different vessels, I contacted the Monell Chemical Senses Center in Philadelphia, a non-profit research organization focusing on taste, smell and irritation. Elizabeth Secor and Dr.

Marcia Pelchat said there was no research conducted on beer vessels per se, but they did have some very interesting information. The most dramatic being that the widely known tongue map is a mistranslation of a German study no one questioned scientifically until now. The correction goes something like this:

The center of the tongue is devoid of taste buds while the edges are covered with taste buds that sense all four basic tastes. There are variations in sensitivity along the sides of the tongue that roughly correspond to the tongue map, but not exclusively and with only a minimal variation. Conditions may arise where one area of sensitivity compensates for another that is damaged or incapacitated.

What this new information means is that emphasis placed on the shape of a vessel affecting actual taste is greatly reduced in importance. Some might view this as bad for the proponents of glassware variety. Not so.

When we talk of tasting beer, we mean experiencing the flavor of the beer. Flavor is primarily aroma and there are thousands of aromas detectable by the human nose. Aroma and taste together produce flavor because the nose and mouth are connected by the retro nasal pathway. Dr. Pelchat speculated it is possible for different shapes to affect the rate of volatilization and total volume of aromas released by a beer. Shape may affect the pathways these aromas take into the ortho (front) or retro (back) nasal pathways. Because aroma has the dominant position in flavor perception, it could very well be that different shapes can enhance a given style. Temperature of a liquid also affects the release of volatiles and perceived carbonation (irritation). The colder the beer, the higher the apparent carbonation and vice versa according to Monell. Different materials have different thermal effects that affect flavor. Some directly interact with the beer. A metal such as copper contributes flavor. Wood absorbs flavors then releases them usually at inappropriate times.

Nothing is conclusive, however, because no scientific research has been devoted to the subject, and it is difficult to apply labo-

ratory models to subjective individual experience. Fortunately, we are given enough information to critically evaluate any grand claims to sensory enhancement.

High-End Beer Glassware

Beer's proper place is on the table, as the often-repeated saying "beer is food" suggests. Wine holds its prestige primarily because of its place at the table. What is beer's place in high-end dining in the United States? The best source of information comes from the nation's top culinary schools. Sadly, there is very little knowledge and practice to report, but it is interesting to see what is recommended at the present time.

Maître d'hôtel instructor Giuseppe Pezzotti of Cornell University's hotel and restaurant program recommends a footed Pilsener glass as the universal beer glass for high-end table presentation. Some restaurants use highball glasses, but the rule of thumb is to use gentle upscale glassware, no mugs. Occasionally, the modified Pilsener glass with a heavy base will be used as well as the shell (a highball glass with a thin base).

Fred Faria, Hospitality College chairman at Johnson and Wales University, echoed Pezzotti in his choice of the footed Pilsener glass as appropriate for the high-end table. He noted that lead or silver crystal glass, cut with decorations and possibly colors, would be best. Educated palates, he said, would shun ornamentation of the bowl and confine it to the stem and foot.

Heinz Holtman, maître d'hôtel of the Escoffier room at the Hyde Park campus of the Culinary Institute of America, also recommends the Pilsener glass. He did go a bit further to add that, although the Pilsener glass was good for light and wheat beers, it would be OK to use a tulip glass or a seidel (a glass stein also called a krug) for dark beers.

To find a place that stocks a variety of glassware, I suggest a high-end tap room. It is a noble endeavor to glean knowledge from the printed word, but it's a lot more fun experiencing the shifting center of gravity on a wheat beer glass a foot or more tall as you slake your thirst and ponder what led to this particular configuration.



**"KÖLSCH"
TUMBLER**



**POPULAR BERLINER
WEISSE-STYLE
GOBLET**



BEER FLUTE



**SMALL GLASS
SUITABLE
FOR SPECIALTY
BEER**



**POPULAR BELGIAN
ALE GLASS**



**DUVEL-STYLE
FLARED TULIP
GLASS**



**RIEDEL
OUVERTURE-
SERIES
BEER GLASS**

Ceremonies

Beer styles and their corresponding glassware have been surrounded with ceremonies and have possessed qualities that enhance the pleasure of drinking. Some glassware may actually enhance beer flavor, like the general tulip shape, or even accentuate a given style, such as the abbey goblet. Glassware may emphasize the beauty of color and clarity of beer to allow us to drink with our eyes as we watch bubbles stream up in a Pilsener glass. Our pleasure may be enhanced by practicality, as is the case of Bavarian wheat beer glasses tall enough to accommodate beer and head without wasting either. Other glasses are fun because of their impracticality, like the huge steins used in Germany today or the inverted conical Schnellen of the late Middle Ages and yard glasses that required close attention to avoid a mess.

These, and all glassware styles, provide us with many pleasurable drinking experiences. Understanding what you want from your drinking experience is the key to enjoyment. If you have a strong preference for consuming all liquids out of Mason jars, then by all means use a Mason jar. It would not do to hamper your tasting pleasure by being ill at ease with the drinking vessel. Generally speaking, however, the more variety you put into your drinking experiences the more you will get out of them. What is important is to enjoy the experience.

Ceremony is good, as long as you are comfortable with it. Ceremony and a certain level of formality tend to do two things. First, it answers the question, "What am I supposed to do?" Once the ceremony is known, you will always know what is expected of you and what to expect from others so there is no worry about how to behave. Second, formality helps the individual and the group focus on the event at hand. No worrying about bills or politics. You are busy having a good time eating and drinking with your friends. Matching the glassware to the beer helps in creating ceremony when serving, and if it actually enhances the flavor, so much the better. It is worth a little extra time or money to have a genuinely pleasant and satisfying beer experience. Don't be afraid to sip out of something a little different.



**GERMAN WHEAT
BEER GLASS**



**FRANK BOON'S
LAMBIK SNIFTER**



**KWAK GLASS
AND STAND**



GOBLET



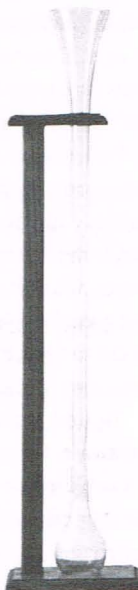
**HAND-BLOWN
TANKARD**



TUMBLER



THISTLE GLASS



**YARD GLASS
AND STAND**

References

- Elkhort, Martin, Jeremy P. Tarcher, *The Secret Life of Food*, 1991.
- Jackson, Michael, *The New World Guide to Beer*, Running Press, 1988.
- Tannahill, Reay, *Food in History*, Crown Publishers Inc., 1988.
- Beer Stein Journal*, The, August 1994.
- From the Corning Museum of Glass:
- Jane Spillman, "Glass, Tableware, Bowls, and Vases," Alfred A. Knopf, 1982;
- Chloezerwick, Harry N. "A Short History of Glass," Abrams Inc. Publishers, in association with Corning Museum, 1990;
- John Brooks, "The Author Negus Guide to British Glass," Hamlyn Publishers 1981;
- Harold Newman, "An Illustrated Dictionary of Glass," Thames & Hudson, 1977;
- Deborah Stratton, "Mugs and Tankards," Souvenir Press, 1975;
- Fritz Kampf, "Beakers, Tankards, Goblets," Edition Leipzig, 1978;
- Will Anderson, "An Illustrated Guide to American Breweriana the Beer Book," The Pyne Press, 1973.

Special thanks to Gail Bardhan of The Corning Museum of Glass, Corning, N.Y.; Dr. Marcia Pelchat of the Monell Chemical Senses Center, Philadelphia, Pa.; Georg Riedel of Riedel, Kufstein, Austria; Barbara Edelman and Robin Richenaker of Barbara Edelman Communications Inc., New York, N.Y.; Don Fineburg and Wendy Littlefield of Vanberg & DeWulf, Cooperstown, N.Y.

Mark R. Anderson of Sacramento, Calif., is a graduate of the California Culinary Academy in San Francisco, culinary gadfly, freelance writer and educator. A member of the San Andreas Malts and Gold Country Brewers and numerous food and wine associations, Mark is founder of the Brewing Arts Association, a non-profit educational organization committed to educating the public and culinary professionals about the art of brewing and beer as food. A brewer since 1989, he has judged more than 10 AHA-sanctioned competitions.

AMERICAN HOMEBREWERS ASSOCIATION® MEMBERSHIP APPLICATION



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

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.*

- ☐ **\$45 Paper Cup Sponsorship** - One-year membership to the AHA and honorary certificate. (\$16 is tax deductible)
- ☐ **\$90 Pewter Mug Sponsorship** - Two-year membership to the AHA and honorary certificate. (\$37 is tax deductible)
- ☐ **\$200 Golden Mug Sponsorship** - Five-year membership to the AHA and honorary certificate. (\$76 is tax deductible)
- ☐ **\$400 Diamond-Studded Platinum Mug Sponsorship** - Distinguished recognition and lifetime membership to the AHA. T-shirt (indicate size) and honorary certificate. (\$182.50 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*.

***PRICES VALID UNTIL MARCH 1, 1996**

MEMBERSHIP IN AHA!

Total Enclosed (U.S. Dollars only)
Full Money-back Guarantee! Prices subject to change

\$

Name

Address

City State/Province

Zip/Postal Code Country

Payment: Check ☐ Visa ☐ MC ☐

Credit Card No. Exp. Date

Signature Daytime Phone ()

☐ Enclosed is \$29 U.S. for one year's membership to the AHA. Five issues of *zymurgy* and membership privileges are included.

☐ Canadian membership: \$34 U.S.

☐ Foreign membership: \$44 U.S.

☐ Enclosed is \$53 U.S. for two years' membership to the AHA. Ten issues of *zymurgy* and membership privileges are included.

☐ Canadian membership: \$63 U.S.

☐ Foreign membership: \$83 U.S.

☐ Check here if this is a renewal.

Call (303) 565-6514 for credit card orders. Make checks payable in U.S. dollars to the American Homebrewers Association, PO Box 1510, Boulder, CO 80306-1510, USA.

***PRICES VALID UNTIL MARCH 1, 1996**

A GIFT FOR A FRIEND

☐ **Yes**, send a gift subscription to my friend. And send a personalized gift card from me — I'll pay above.

Name

Address

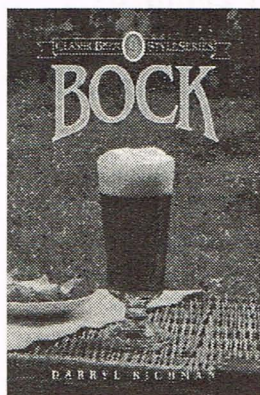
City State/Province

Zip/Postal Code Country

Introduce a friend to the many benefits that the American Homebrewers Association provides its members. Send a gift membership, which includes a subscription to *zymurgy*, for only \$29!

***PRICES VALID UNTIL MARCH 1, 1996**

EXPAND YOUR BREWING LIBRARY

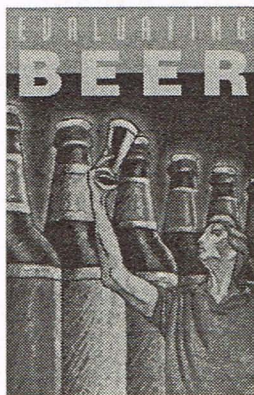


Bock

By Darryl Richman

Bock is the ninth title in the critically acclaimed Classic Beer Style Series from Brewers Publications. A comprehensive look at this dark and malty beer style, *Bock* covers the history, style profiles, procedures and recipes of this family of beers. You'll find everything you need to understand, appreciate and brew Bock in this book. Brewers Publications, 1994

5 1/2 x 8 1/2, 172 pp., \$11.95 plus shipping. #409



Evaluating Beer

From defining off-flavors to analyzing competition-winning beers, *Evaluating Beer* will help you develop tasting and evaluating skills. Chapters are by recognized beer experts including Jim Koch, Greg Noonan, George Fix and Charlie Papazian — just to mention a few. Discover what it takes to perform exacting beer evaluations. *Evaluating Beer* is perfect for beer judges, advanced homebrewers and brewing professionals. Brewers Publications, 1993

5 1/2 x 8 1/2, 244 pp., \$19.95 plus shipping. #465

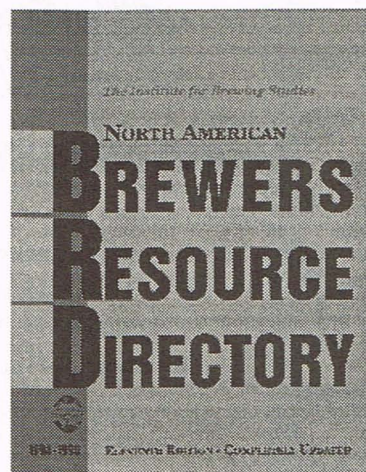


Winners Circle

10 Years of Award-Winning Homebrew Recipes

Brew like a winner! *Winners Circle* is your guide through a collection of 126 original award-winning homebrew recipes selected from winners of the AHA National Homebrew Competitions from 1979 through 1983. Recipes encompass 21 major beer styles of lager, ale and mead, as well as judges tasting notes and brewer specifics. Brewers Publications, 1983

5 1/2 x 8 1/2, 199 pp. \$11.95 (\$9.95 for AHA members) plus shipping. #464



1994-1995 North American Brewers Resource Directory

Your Yellow Pages to the Craft-Brewing Industry

Those serious about the craft-brewing business depend on this annually updated directory as their primary source of vital brewing statistics and information. This directory comprises the names, contact people, phone numbers and addresses of North American breweries. It also lists consultants, publications, suppliers and manufacturers in the craft-brewing industry. Brewers Publications, 1994

8 1/2 x 11 1/2, 435 pp. \$80 (\$60 for IBS members) plus shipping. #504

EXPAND YOUR BREWING LIBRARY ORDER FORM

Item	Quantity	Price	Total
<i>Bock</i> #409	_____ @ \$11.95=	_____	_____
<i>1994-1995 Brewers Resource Directory</i> #504	_____ @ \$80.00=	_____	_____
IBS member #504M	_____ @ \$60.00=	_____	_____
<i>Evaluating Beer</i> #465	_____ @ \$19.95=	_____	_____
<i>Winners Circle</i> #464	_____ @ \$11.95=	_____	_____
AHA member #464M	_____ @ \$9.95=	_____	_____

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

Shipping Total = _____

Name _____

Address _____

City _____ State/Province _____

Zip/Postal Code _____ Country _____

Payment: Check _____ Visa _____ MC _____

Credit Card No. _____ Exp. date _____

Signature _____ Daytime Phone (____) _____

FOR THE BEGINNER

David A. Weisberg

**HOLY
HYDROMETER,
BATMAN!**

If you are like I was, you probably didn't (or won't) use the hydrometer your brewing equipment kit came with until maybe your 16th batch. Either you couldn't be bothered or you were too excited (or nervous) about what ingredient to toss in next. When do I throw the yeast in? Is it ready to bottle yet?

After a while I learned how easy a hydrometer is to use and how important it is for brewing. I really could brew better beer with this weird thermometerlike instrument.

A hydrometer measures the density (thickness) of liquids compared to the density of water. Adding solids that dissolve such as sugar to water causes the specific gravity to rise from 1.000. It can help you know when to bottle, and will help you avoid those quiet time-bomb gushers that have an affinity for spraying the faces of any visiting relatives wanting a taste of fresh homebrew.

The Basics

(1) The scale most homebrewers use is called specific gravity. Most hydrometers measure specific gravity from 0.900 to 1.200

at a temperature of 60 degrees F (16 degrees C).

(2) The Balling scale (measured in degrees Plato) may be found on your hydrometer and is used mostly by microbrewers and megabrewers. If you find a recipe showing gravities in degrees Plato, simply multiply this number by four, divide by 1,000 and add one to get the approximate specific gravity. For example, $12^\circ\text{Plato} \times 4 = (48 \div 1,000) + 1 = 1.048$ specific gravity. At high gravities, above 1.090, the conversion will be off by 1°Plato .

(3) Fact: The specific gravity of water is 1.000 at 60 degrees F (16 degrees C). The more dense a liquid is, the higher the hydrometer floats and the higher the specific gravity reading you will get.

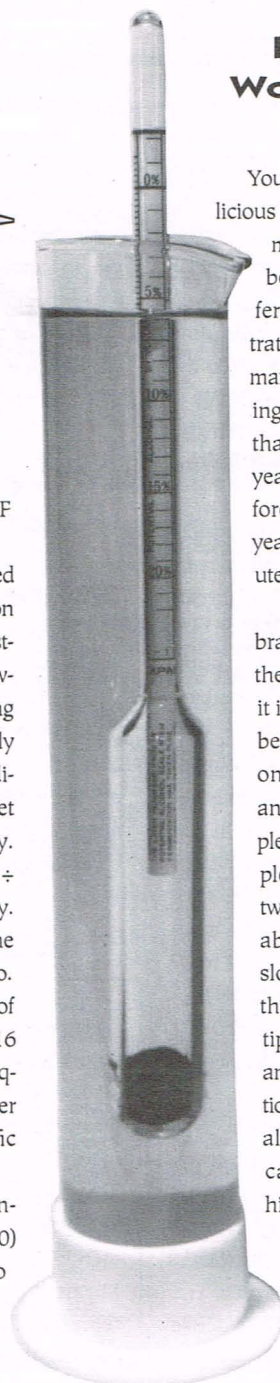
(4) To be cool, just say "ten-forty" (1.040) or "ten-fifty" (1.050) kinda like CB talk — no need to say "one point zero four zero," unless of course you are in the military.

How Do You Work this Thing?

You have just boiled and cooled a delicious batch of porter. The wort (unfermented beer, pronounced *wert*) has been transferred into the primary fermenter. (If you added concentrated wort to cool water in the primary fermenter, mix well before taking a hydrometer sample.) Now is that magical time for pitching the yeast (throwing it in). But wait! Before you put those voracious little yeast beasts to work, take two minutes for a quick hydrometer reading.

First, clean and sanitize a brand new turkey baster. Squeeze the ball of the turkey baster, lower it into the wort (a couple of inches below the surface), open your grip on the ball, withdraw the baster and slowly squeeze the wort sample into the tall, narrow plastic sample tube. You may have to do this two or three times to fill the tube about three-quarters full. Now slowly lower the hydrometer into the sample tube while giving the tip a quick twist with your thumb and index finger. This spinning action prevents clinging bubbles from altering the gravity reading by causing the hydrometer to float higher than it should.

Make sure the sample tube is resting on a level surface. The hydrometer should float centered in the tube. Because of surface tension, liquid surfaces



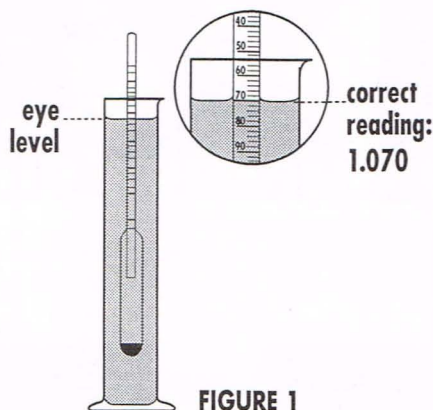


FIGURE 1

tend to form a concave shape, called a meniscus, you have to sight the reading at the lowest point of the "bowl" or concavity to get an accurate reading. (See Figure 1.)

Read the scale marked specific gravity and write this number down in your brew log or recipe book. This number is called your original gravity (sometimes called starting gravity). You will probably see it abbreviated as OG. (It's also cool to say, "Hey, what's the OG on this batch?")

Important point: Do not return the sample to your wort because you might introduce infection. Either toss it out or drink it! (Ah, a sweet, cloying, syrupy taste of malt with just a hint of hops. I don't usually like the taste but I drink it anyway.)

Adjustment note No. 1: Take a temperature reading of the sample. If your sample is 10 degrees F (5.5 degrees C) higher or lower than 60 degrees F (16 degrees C) you will need to adjust the gravity reading number up or down. Follow Table 1 for making gravity adjustments.

Adjustment note No. 2: This adjustment needs to be done only once. Place your hydrometer in the sample tube filled with water at exactly 60 degrees F (16 degrees C) or whatever temperature your particular instrument is rated for. You should get a reading of 1.000. If, for example, you get a reading of 1.002 (as with my hydrometer) remember all your readings will be off by 0.002 degrees specific gravity. To correct just subtract 0.002 from all your future readings. No big deal. Just something to remember.

During fermentation the specific gravity of your wort will slowly decrease. This happens because yeast metabolizes fermentable sugars into alcohol and CO₂ causing the wort to become thinner. The hydrometer will sink lower in a less dense wort, giving you a lower reading.

Is It Beer Yet?

This is where our delicate, faithful hydrometer is a godsend!

It is time for another sampling to help you determine if your Peter Pumpkin's Potent Porter is ready for bottling or kegging.

First, remember to clean and sanitize anything touching the wort. Next, take another wort sample from the fermenter, read the hydrometer and record this in your brew log.

Refer to the recipe used to brew your creation. If the recipe called for an original gravity of 1.050 to 1.055 and a final gravity (FG), also called terminal gravity (TG), of 1.012 to 1.014 you can use this information to guide your next steps.

For example, if your original gravity was 1.054 and final gravity is 1.018 you can suspect your brew has not finished fermenting yet, so simply let it ferment for several more days, checking the gravity daily.

Rule of thumb: Once the final gravity has remained the same for two or three days it is time to bottle.

Calculating Alcohol Level

To calculate the alcohol percent by weight take the original gravity (for example, 1.045) and subtract the final gravity (let's say 1.010). $1.045 - 1.010 = 0.035$. Then multiply by 105 to get 3.6 percent alcohol by weight. To calculate the alcohol percent by volume, multiply the alcohol by weight by 1.25. For example, $3.6 \text{ percent} \times 1.25 = 4.5 \text{ percent alcohol by volume}$.

A Simpler Scale

One neglected scale is the potential alcohol (percent by volume) scale that may also be on your hydrometer. My hydrometer measures from 0 to 16 percent alcohol by volume. Simply take a reading from this scale like you did before, prior to pitching the yeast. Let's say the number is 8 percent. When fermentation is complete take another reading. Maybe it is now 3 percent. These numbers represent the potential for alcohol in your batch at those two distinct times.

The difference between the two readings, in this case 5 percent, is the percent alcohol by volume in your finished brew.

One disadvantage when using this scale is it can be hard to read the level when it falls between the numbers (my hydrometer only shows whole number gradation marks).

Glass Fermenter Sampling

If you ferment in glass carboys, you can modify your turkey baster for sampling purposes. Just insert one end of a long racking tube (or cane) about one inch into a three-to four-inch piece of plastic tubing (three-eighths-inch inside diameter). On the other end of the plastic tubing insert the turkey baster tip about one inch. Now you can reach down into the wort to sneak a sample.

Note: You may want to attach an adjustable metal tubing clamp over the joint where the plastic tubing overlaps the turkey baster tip. This way your baster does not lose drawing power due to leaking air. Leave the clamp on if possible, except for cleaning.

Is it OK Not to Use One?

Sure. Just listen to your beer à la Papazian. By listening to the sound and watching the airlock activity you can gauge what is happening without using a hydrometer.

TABLE 1 Hydrometer Correction Table from <i>Brewing Lager Beer</i> , Greg Noonan, Brewers Publications, 1986.	
For Temperatures Other Than 60 degrees F	
If Temperature is: degrees F	Add to Hydrometer Reading: degrees S.G.
32	-0.0008
35	-0.0009
40	-0.0009
50	-0.0007
70	0.001
80	0.002
90	0.004
100	0.006
110	0.008
120	0.010
130	0.013
140	0.016
150	0.018
160	0.022
170	0.025
190	0.033
212	0.040

At first the activity of the fermentation is slow. The calm before the storm. (This time frame varies depending on numerous factors including amount of yeast pitched, aeration and fermentation temperature.) Twelve to 24 hours after pitching the yeast fermentation really gets going. After two to 10 days (depending on yeast strain, fermentation temperature and original gravity), things settle down. If you plan to lager, or don't think you will get around to bottling in the next week or two, transfer the beer to the secondary. (Note that during transfer to the secondary, a lot of CO₂ can come out of solution. It could take a day or two for the CO₂ to get re-saturated in the almost-finished beer, and you may not see airlock activity during this period.) When the CO₂ bubbling in the airlock has slowed to about one bubble every two minutes or so, you can now bottle. (Note also, if you are fermenting in cooler temperatures, you should probably wait until the airlock activity is down to one bubble every four or five minutes.)

Problems may arise, however, when you begin experimenting. You may try a different malt extract manufacturer. Maybe you want to try using liquid yeast. When experimenting with different brewing variables you introduce the possibility of getting different results. For example, if you lower the fermentation temperature suddenly, you can shock the yeast out of suspension. This could result in a slow or stuck fermentation (where the fermentation has stopped before it is done). If you bottle this batch thinking it's done fermenting, you may end up with a very sweet flat brew. Or you may get a wild gusher and never have a chance to taste it (over-carbonated beer tends to gush out, leaving not a drop in the bottle).

At this point the benefits of using a hydrometer seem well worth the little time and effort needed to use it.

"Hey, what's the OG on that batch?"

David A. Weisberg, homebrewer since 1989, is co-founder of the New Hampshire Biernuts homebrew club. During the day he is a promotions and research manager for two technical trade publications in Peterborough, N.H. At night he's an intense homebrewer-author in search of that perfectly brewed batch. David is author of *50 Great Homebrewing Tips* (Lampman Brewing Publications, 1994).

Feature Components

Pump, Hose and Sparge Head

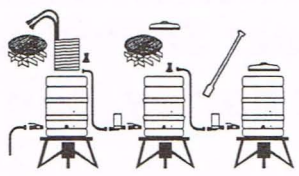
The pump is a magnetically coupled, bronze circulating pump.

The sparge head has a 55 screen for a gentle flow of water.

The entire system is rated to 230 F.

Sale price is \$125 + shipping. Shipping weight is 16#.

The hose is a 55 braided high pressure rubber hose.



Our complete 3 kettle system with two (2) optional pumps.

The pump is used to:

- Pump water to the mash.
- Circulate wort in the mash.
- Pump wort to the boiler.
- Circulate wort to speed cooling.
- Pump wort to the fermenter.

"The micro micro (pico) brewing system for individuals, clubs or pilot plants that are looking for an efficient, cost effective way to brew 5 to 25 gallon batches."

pico-Brewing Systems, Inc.

8383 Geddes Road
Ypsilanti, MI 48198-9404
Phone (313)482-8565
FAX (313)485-BREW

U.S. WHOLESALE HOMEBREW SUPPLY CO.

1304 E. ALGONQUIN RD.
ALGONQUIN, IL 60102
708-854-8032

For The Serious Brewer Who Knows Price And Value
We Have What You Want...
WHOLESALE PRICES TO THE PUBLIC!

BUY WITH U.S. • SAVE WITH U.S.
YOU'LL STAY WITH U.S.

- Most Orders Shipped Within 24 Hours
- We Accept

- Money Orders and Banks Checks Accepted (No Personal Checks, Please)

BEER CLUBS WELCOME

THIS IS YOUR FREE CATALOG!

INGREDIENTS

ADDITIVES

GYPSUM.....	1 lb.	\$1.00
OAK CHIPS.....	1 lb.	1.60
IRISH MOSS.....	1 lb.	5.00
GELATIN.....	1 lb.	5.00

ADJUNCTS

FLAKED OATS.....	1 lb.	1.00
FLAKED WHEAT.....	1 lb.	1.00
FLAKED RYE.....	1 lb.	1.00
FLAKED MAIZ.....	1 lb.	1.00
MALTO-DEXTRIN.....	1 lb.	1.25
CORN SUGAR.....	10 lbs.	5.60

HOPS

CASCADE.....	1 lb.	3.85
N. BREWER.....	1 lb.	3.85
BULLION.....	1 lb.	3.85
CHINOOK.....	1 lb.	3.85
TETTNANG.....	1 lb.	6.20
FUGGLE.....	1 lb.	6.20
WILLAMETTE.....	1 lb.	6.20
MT. HOOD.....	1 lb.	6.20
U.S. HALLERTAU.....	1 lb.	6.20
HALLERTAU.....	1 lb.	7.50
HERSBRUCKER.....	1 lb.	7.50
SAAZ.....	1 lb.	10.80

All Hops packaged in oxygen barrier bags and kept at -15° Fahrenheit to assure freshness.

GRAINS & MALTS

U.S. GRAINS

All Come In 50 lb. Bags

TWO-ROW.....	\$23.40
SIX-ROW.....	21.45
CARAMEL 10L.....	30.25
CARAMEL 20L.....	30.25
CARAMEL 30L.....	30.25

BELGIUM GRAINS

All Come In 50 lb. Bags

PILSEN.....	\$33.15
PALE ALE.....	34.15
MUNICH.....	35.10
WHEAT.....	38.05

Stainless Steel Recessed

DRIP TRAYS

Approx. 6" x 15" **\$74.55**

Stainless Steel Fridge Mount

DRIP TRAYS

5" x 8" With Drain **\$35.16**

WORT CHILLERS

25' - 3/8" Copper with Faucet Adapter

\$32.88

DRAFT KEGGING SYSTEM PARTS

KEG TOP FITTINGS

U.S. SANKE.....	\$24.60
EUROPEAN SANKE.....	26.70
HOFF STEVENS.....	28.00
Above require beverage nut and stem.	
	1.72 Each

THRU WALL BEER TAPS

4 INCH SHANK.....	26.47
Above require beverage nut and stem.	
	1.72 Each

TUBING

5/16" x 9/16" GAS.....	\$1.32
3/16" x 7/16" BEV.....	\$1.32

SPLITTERS

TWO WAY.....	24.00
THREE WAY.....	30.84
FOUR WAY.....	42.60

B.E.S.T. IODINE BASED SANITIZER

\$1.27

CORNELIUS DISCONNECTS

Please Specify Pin or Ball Lock and Barbed or Threaded End.

3.27	
1/4" NUT & 3/8" STEM	2.78
1/4" NUT & 1/4" STEM	2.28
FLARE WASHERS.....	Ea. 12

REGULATORS

With Check Valves	
SINGLE GAUGE.....	32.85
TWO GAUGE.....	41.40

CO. TANKS

5 LB.....	60.00
15 LB.....	101.70

COLD PLATES

8 x 12 SINGLE.....	57.30
--------------------	-------

GROSH GASKETS

3.75 Pkg. of 100

Chrome Plated BRASS STANDARD Tower Height 9-1/2" from Spout to Flange

\$65.55

What Cabernet Sauvignon grapes are to red wine, Maris Otter barley is to ale malt.

Maris Otter is a rare, old fashioned two-row barley. It is low in yield per acre and tough to grow. Seasoned brewers still insist on the delicious, rich, plump, nut-like character and the finesse that the variety gives their pale and brown ales, porters, stouts and barley wines. Crisp Malting Ltd. of Great Ryburgh, England continues to contract with local Norfolk farmers to supply them with this extraordinary barleycorn. Crisp maintains one of the few remaining traditional floor maltings in England. Their fine pale, crystal, and dark malts are now available to micro and home brewers in the U.S. and Canada through Liberty Malt Supply Company and their retail agents.



Dealer inquiries welcomed

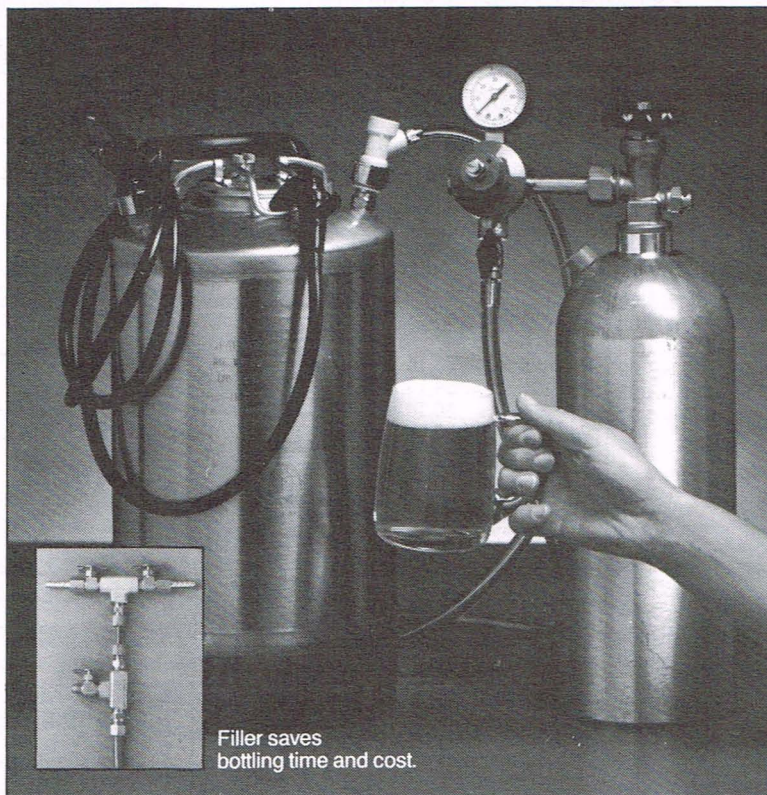
LIBERTY MALT SUPPLY COMPANY

★ America's finest selection of malt ★ Founded in 1921 ★

1419 First Avenue, Seattle, WA 98101— Tel. 206-622-1880 Fax 206-622-3206

Crisp Maris Otter won 1st place at the National Malting Barley Competition.

Phone: 1-800-990-MALT for a free Liberty Malt Supply Catalog



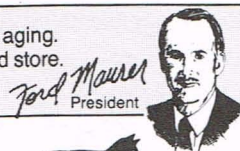
Filler saves
bottling time and cost.

HOME BREW KEG (3 or 5 gallons)

The Foxx Home Brew Keg allows you to dispense, store and clean-up 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!

Allows better beer aging.
Easier to clean and store.
Better for Parties!



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

WHOLESALE ONLY. Dealer Inquiries Invited.

WINNERS

C I R C L E

James Spence



Whew! I'm glad that's over. A little bit of winter is OK, but sometimes all that heavy clothing, slush, mud and cold gets a person down. The good thing is that it's time to stock up on spring and summer brews. With the temperatures still making the mercury run low, you have a chance to keep some brews cool and brew some snappy, clean lagers to celebrate the first day you go outside without your overcoat. Try to get some quality wheat beer yeast for Phil Kaszuba's "Last Stop Wheezin'." Keep in mind that wheat beers are a bit delicate and age quickly. A couple of pints of Tom Altenbach's rich and roasty Schwarzbier will go mighty fine with a brisk spring barbeque.

Remember, these folks are homebrewers just like you. Just because they got certain results doesn't mean you'll get the same ones. It wouldn't be any fun if you did anyway.

AMERICAN LAGER



BRONZE MEDAL

AHA 1994 NATIONAL HOMEBREW COMPETITION

Todd W. Anderson

Lompoc, California

Warbonnet

American Premium

Ingredients for 5 gal (19 L)

- 6 lb William's American Light malt extract (2.72 kg)
- 1 1/4 lb 10 °L crystal malt (0.57 kg)
- 1/2 tbspc crushed coriander seeds (7.4 mL) (60 min.)
- 1 1/4 oz Cascade hops, 5.5% alpha acid (35 g) (60 min.)
- 1/2 oz Tettnanger hops, 4.4% alpha acid (14 g) (20 min.)
- 1 oz Tettnanger hops, 4.4% alpha acid (28 g) (five min.)
- 3/5 oz Hallertauer hops, 2.9% alpha acid (18 g) (five min.)
- William's Bay Area Lager liquid yeast culture
- 3/4 cup corn sugar (113 g) (to prime)

- Original specific gravity: 1.043
- Final specific gravity: 1.016
- Boiling time: 60 minutes
- Primary fermentation: five 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): four months

Brewer's specifics

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

Judges' comments

"On the high side for bitterness in this style, but tasty. Approaches a Pilsener. A pleasure to drink."

"Low malt flavor OK. Too bitter. Detected a sharp flavor. Very little malt taste might be OK for this style, but too bitter."

BAVARIAN DARK



SILVER MEDAL
AHA 1994 NATIONAL HOMEBREW COMPETITION
Tom Altenbach
Tracy, California
beer unnamed
Schwarzbier

Ingredients for 10 gal (38 L)

- 10 lb pale malt (4.54 kg)
- 2 lb toasted malt (0.9 kg)
- 1 lb dextrin malt (0.45 kg)
- 4 lb light Munich malt (1.81 kg)
- 1 lb dark crystal malt (0.45 kg)
- 2 lb chocolate malt (0.91 kg)
- 3 oz roast malt (85 g)
- 3 oz black malt (85 g)
- 1 lb flaked barley (0.45 kg)
- 1/4 lb brown malt (0.17 kg)
- 1 oz Perle hops, 9.1% alpha acid (28 g) (60 min.)
- 1/2 oz Perle hops, 9.1% alpha acid (14 g) (30 min.)
- 1 1/2 oz Mount Hood hops, 6.3% alpha acid (43 g) (10 min.)
- 1 oz Mount Hood hops, 6.3% alpha acid (28 g) (finish)
- 3 oz Hallertauer hops, 5.2% alpha acid (85 g) (finish)
- Wyeast No. 2308 liquid yeast culture
- 3/4 cup corn sugar per 5 gal (113 g) (to prime)

- Original specific gravity: 1.056
- Final specific gravity: 1.016
- Boiling time: 120 minutes
- Primary fermentation: 10 days in glass
- Secondary fermentation: 19 days in glass
- Age when judged (since bottling): seven months

Brewer's specifics

Mash grains at 155 degrees F (68 degrees C) for 90 minutes.

Judges' comments

"Roasted malt character. Some roasted malt bitterness. Medium sweetness high for style, but balanced by roasted malts. An excellent beer."

"Clean tasting. Roasted malts and plenty of hops come through. A lingering smokiness in the finish. Good beer. Hop it less and it will fit the style nicely."

"Too sweet for style, nice balance otherwise. Roasty malt evident. Too sweet and perhaps a little big for style, but excellent beer."

GERMAN WHEAT BEER



SILVER MEDAL
AHA 1994 NATIONAL HOMEBREW COMPETITION
Phil Kaszuba
Essex Junction, Vermont
Last Stop Wheezin'
German Style Weizen/Weissbier

Ingredients for 5 gal (19 L)

- 6 lb wheat malt (2.72 kg)
- 5 lb Harrington malt (2.27 kg)
- 12 oz Munton & Fison light dry malt extract (340 g)
- 1/2 oz Hallertauer hops, 2.9% alpha acid (14 g) (60 min.)
- 1 oz Hallertauer hops, 2.9% alpha acid (28 g) (30 min.)
- Wyeast No. 3068 liquid yeast culture
- 1 cup corn sugar (150 g) (to prime)

- Original specific gravity: 1.055
- Final specific gravity: unknown
- Boiling time: 60 minutes
- Primary fermentation: four days at 68 degrees F (20 degrees C) in glass
- Secondary fermentation: 10 days at 68 degrees F (20 degrees C) in glass
- Age when judged (since bottling): six months

Brewer's specifics

Mash grains at 152 degrees F (67 degrees C) for 120 minutes.

Judges' comments

"Wheat comes through nicely. Could be more clovy. Finishes a bit too dry, but very nice. Low hop bitterness; nice hop-malt balance. Beer is very drinkable and clean, but a bit too subtle."

"Flavor more harsh than aroma portends. Includes some additional phenols and harsh bitterness that are not to style."

"Phenolic. Needs more clove, more fruit. I get a slight solvent taste. Very drinkable, but the clove and banana character need to be bigger."



CLASSIC PILSENER



SILVER MEDAL

AHA 1994 NATIONAL HOMEBREW COMPETITION

Micky and Vi Walker

Fargo, North Dakota

Harvest Pils

Bohemian Pilsener

Ingredients for 10 gal (38 L)

- 16 1/2 lb two-row Pilsener malt (7.48 kg)
- 1 lb CaraPils malt (0.45 kg)
- 4 1/2 oz Hallertauer hops, 2.9% alpha acid (128 g) (60 min.)
 - 1 oz Saaz hops, 4.4% alpha acid (28 g) (20 min.)
 - 1 oz Saaz hops, 4.4% alpha acid (28 g) (two min.)
- 1/2 oz Saaz hops, 4.4% alpha acid (14 g) (dry)
- Wyeast liquid yeast culture
- force carbonated in keg

- Original specific gravity: 1.050
- Final specific gravity: 1.015
- Boiling time: 90 minutes
- Primary fermentation: 21 days at 46 degrees F (8 degrees C) in glass
- Secondary fermentation: 15 days at 46 degrees F (8 degrees C) in glass
- Tertiary fermentation: 30 days at 32 degrees F (0 degrees C) in keg
- Age when judged (since bottling): 2 1/2 months

Brewers' specifics

Mash grains at 122 degrees F (50 degrees C) for 30 minutes. Raise to 150 degrees F (66 degrees C) for 90 minutes.

Judges' comments

"Nice malt. Hop flavor and bitterness balance. Maybe a little sweet overall. Some oxidation. Nice effort overall."

"Malt flavor predominates with an intermediate hop finish. Slight fruitiness is inappropriate for style. Nice beer with clean lager flavor."

"Nice Czechlike malt flavor. Good balance and hop character. Slightly husky in background. Could use twinge of sweetness."

CALIFORNIA COMMON BEER



BRONZE MEDAL

AHA 1994 NATIONAL HOMEBREW COMPETITION

Gary L. Arkoff

Tigard, Oregon

Oregon Sunshine

California Common Beer

Ingredients for 5 gal (19 L)

- 7 lb amber malt extract syrup (3.18 kg)
- 1 lb 20 °L crystal malt (0.45 kg)
- 1 1/2 oz Cascade hops, 7.4% alpha acid (43 g) (60 min.)
- 1/2 oz Cascade hops, 7.4% alpha acid (14 g) (10 min.)
- Wyeast No. 2112 liquid yeast culture
- 3/4 cup corn sugar (113 g) (to prime)

- Original specific gravity: 1.033
- Final specific gravity: 1.010
- Boiling time: 60 minutes
- Primary fermentation: 14 days at 60 degrees F (16 degrees C) in glass
- Secondary fermentation: four weeks at 60 degrees F (16 degrees C) in glass
- Age when judged (since bottling): four months

Brewer's specifics

Steep grains until boil.

Judges' comments

"Malt is a bit sweet in front. Hop flavor and bitterness a bit light, finishes a bit quickly. Very nicely made beer."

"Hops are there, but bitterness seems low. Crystal malt is nice. Good recipe. Hop bitterness needs a little boost."

"Malt roundness after light-to-medium hop taste. Very good. Hops and malt close. Leans to malt until aftertaste."

Every gold-medal winning recipe from the AHA 1994 National Homebrew Competition was printed in *zymurgy* Special Issue 1994 (Vol. 17, No. 4) "Winners Circle."



WEISS IS NICE CLUB-ONLY COMPETITION WINNER GERMAN WHEAT BEER



FIRST PLACE

Rob Nelson

Duvall, Washington

representing The Brews Brothers

Palousen Dunkelweizen

German-style Dunkelweizen

Ingredients for 5 gal (19 L)

- 5 lb wheat malt (2.27 kg)
- 4 lb Pilsener malt (1.81 kg)
- 3 oz Belgian aromatic malt (85 g)
- 3 oz Belgian biscuit malt (85 g)
- 4 oz chocolate malt (113 g)
- 3 oz victory malt (85 g)
- 3 oz CaraPils malt (85 g)
- 3/4 oz Tettnanger whole hops, 6.2% alpha acid (21 g) (60 min.)
- Wyeast Weiherstephan liquid yeast culture
- 1 cup corn sugar (150 g) (to prime)

- Original specific gravity: 1.056
- Final specific gravity: 1.015
- Boiling time: 60 minutes
- Primary fermentation: six days at 76 degrees F (24 degrees C) in glass
- Age when judged (since bottling): two months

Brewer's specifics

Dough-in grains with 2.7 gallons of 120-degree-F (49-degree-C) water and let sit for 20 minutes. Raise the temperature slowly to 122 degrees F (50 degrees C) and hold for 30 minutes. Remove about a gallon of the stiff part of the mash, put it into another pot and raise the temperature to 140 degrees F (60 degrees C), hold for 15 minutes, raise to 158 degrees F or 70 degrees C, hold for 15 minutes, then raise to boiling for 15 minutes. Return this to the mash (mash temperature should be about 138 degrees F or 59 degrees C). Pull another gallon and repeat the process (main mash temperature should be about 151 degrees F or 66 degrees C). Hold this temperature for 45 minutes until iodine tests negative for starch. Pull one gallon and raise to boiling, return to main mash to hit mash out temperature of 168 degrees F (76 degrees C). A heat source may be required to maintain the main mash temperature. Note: this is a brewery-specific adaptation of the procedure outlined in *German Wheat Beer* (Brewers Publications, 1992) by Eric Warner. If you have the equipment, pull 40 percent for the first decoction and skip the third decoction.

Judges' comments

"Malty with clove and banana prominent. Very nice brew."

"Nice, sweet, nutty malt flavor fades into a nice crisp finish. Maybe a little too high in alcohol — warming on the way down."

"Malt, banana and alcohol evident. Interesting combination. Very good beer. A bit strong for style."

"Phenols and malt start out nice, but flavor dries out a little too quickly. Maybe a little bit high in alcohol for style, but a very nice beer."

"Very malty (OK). Good clovy-fruity tones. Minimal hop. Very good."

"Nicely balanced. A great-tasting beer which is true to the dunkel style. Excellent brew."

AHWD

AT HOME WAREHOUSE DISTRIBUTORS

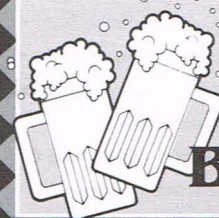
BEER & WINE MAKING SUPPLIES

- 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

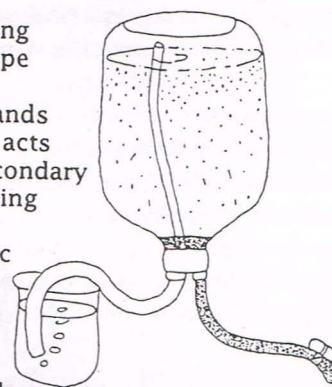


GREAT
HOMEBREW IS THE
BOTTOM LINE

TIRED OF RACKING?

- Drains yeast from bottom of tank
- Eliminates racking
- Burton-Union type blow-off
- Easy to make stands
- Inverted carboy acts as primary & secondary fermenter, lagering & priming tank
- Direct, anaerobic yeast transfers for pitching new brews
- Save time, money, and work

The BrewCap



Inquire at your local homebrew shop or send self-addressed stamped envelope for our **FREE** brochure on the BrewCap and the rest of the BrewCo brewing system: the **Bruheat Brewer's Boiler** & the **BrewChiller**.

BrewCo

Dealer
Inquiries
Invited

P.O. Box 1063, Boone, N.C. 28607
(704) 963-6949

MC &
VISA
accepted

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:

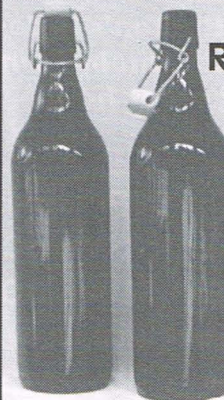
WINE HOBBY USA

2306 West Newport Pike
Stanton, Delaware 19804



"The bitterness of poor quality is remembered long after the sweetness of low price is forgotten"

Now Buy Small or Large Quantities Of This Reusable Bottle.



This imported 1-liter bottle with ceramic flip-top closure is now available in practically any quantity.

Minimum Order:

10 Bottles \$25.00*
Volume discounts available.

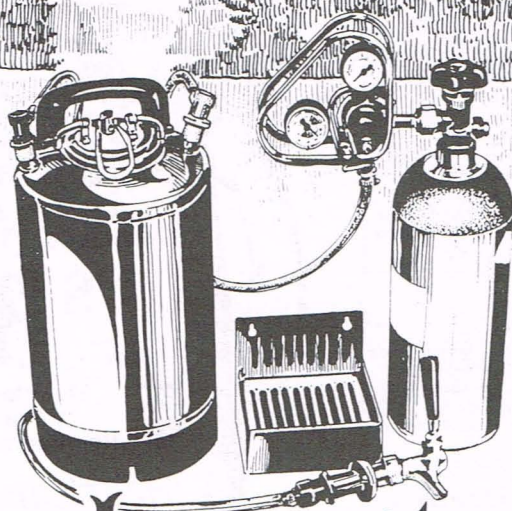
Bavaria South Inc.

P.O. Box 1909 • Highway 64
Manteo, NC 27954

919-473-1991 • 1-800-896-5403

*Shipping not included.

**Kegging,
bottling &
dispensing
Equipment for
the Advanced
homebrewer...**



Braukunst Homebrewers' Systems

55 Lakeview Drive • Carlton, MN 55718-9220
(218) 384-9844 (800) 972-Brau
24-hour voice/fax order line

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

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

MALT EXTRACTS

High Quality brewers Wort:
Packaged in easy to use 3.3# and 6# poly bags.

Gold • Dark • Weizen • Amber
Hopped and Unhopped

The Full Line of BRIESS Grains
and Specialty Malts in Whole
Kernel and Brewers Grist.
Dry Malt Extract in all four types.
Dextrose and Corn Syrup.
Hop Pellets.
DeWolf - Cosyns Belgium Grains
in 50# bags.

**Northwestern
Extract Co.**

Wholesale Only
(800) 466-3034

3590 North 126th Street, Brookfield, WI 53005

ASK FOR

**"Draft Beer
To Go"** with

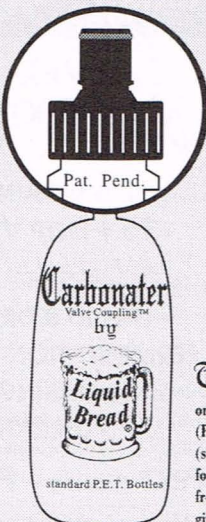
The Carbonater
Valve Coupling™



"Wow, this is great,
this is how I'm
getting my beer to the
Great American Beer
Festival this year."

Greg Noonan
Upon first sight of
the Carbonater
valve coupling™

With Mr. Noonans
support along with
other Micros.
The Carbonater
valve coupling Is
now accepted by the
Great American
Beer Festival for
submitting entries.



"Allows us to get draft quality
beer to our customers
refrigerator without
investing in a bottling line.
Reception has been great. Brings
customers back again and again
and again"
Nice lure his
customers say.

Doug Cartwright
General Manager
Kelley Creek Brewing
Co-Bonny Lake
WA after Grand
Opening

The Carbonater fits
on a standard 2 litre Plastic Soda
(PETE) bottle. It uses a ball lock
(standard beverage) fitting. This allows
for the purging of air, after gently filling
from your tap, then injecting 30 psi,
giving you a 100% CO2 headspace. This
method properly used gives you a shelf
life similar to the beer remaining in
your keg.
Force carbonating still beverages is a
breeze.

Liquid Bread, Inc.

2450 Absher Rd.
Narcoossee, FL 34771
(407) 957-4472
Fax (407) 273-0137
On the west coast
F.H. Steinbart (503) 232-8793

MADE
IN
THE
U.S.A.

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

**UPSIDE-DOWN
CONICAL
FERMENTER**

**CALL
FOR A FREE
CATALOG**

With trub drain and air-lock.
Includes 7-1/4 gallon glass carboy.

\$37⁹⁷



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!

WORLD OF WORTS

Charlie Papazian

Sure as Tootin' Pumpnickel Stout

I'd like to thank the folks at Anheuser-Busch for a great idea!

Beer is my business and I was working late. While driving home I tuned the radio to Monday Night Football. The opening kickoff was moments away, but wait, first a word from an advertiser. Wow, was I inspirationally surprised. My hat's off to the makers of Bud Light. After all the abuse that homebrewers mount on light beers, Anheuser-Busch scripts a radio advertisement that is pure genius, and a contribution to the art of homebrewing. Talk about turning the other cheek.

Perhaps you heard the advertisement. Two guys are getting ready to watch the football game on television. Paraphrasing: "You got any Bud Light?" one asks the other. "Yes I do, but wait a minute, good buddy, I've got some homebrew that you've gotta try." "Hmmm. Looks kinda dark." "Yeah, it's my homebrew. Mmmmm. Ya gotta try it. It's my pumpnickel stout." "Uh. No thanks. Say, where's that Bud Light?" "Look how dark and thick this is. Ya gotta have some." "Hey! What's that chunky stuff?" "Oh, that's bouillon — gives it extra body." "Yeah. Thanks, but no. I think I'll have a Bud Light ..."

There I was cruising down the highway chuckling to myself, "So it's come to this." Then thinking, there are a lot of homebrewing folks who rightly take their hobby

and the quality of their beer seriously and may be offended by an ad that pokes a little fun at homebrewing. Me too. At first I thought, "Now that's not very nice of them, is it?" But somehow my fermented mind flicked past those thoughts and never reconsidered. Hell, I was trying to figure out what a pumpnickel stout might really be like. By the time I was home, I had formu-

lated the recipe. Yow! What a concept. I couldn't have been more psyched to brew a batch of pumpnickel stout and have it ready for the end of the season.

I reconfirmed my formulation with a cookbook recipe for pumpnickel bread: rye, wheat, corn meal, water, yeast and other assorted niceties. Beer is liquid bread, some folks say, and now I was on my way, but I have to admit that I sure as tootin' had my doubts about adding the bouillon for body as the Bud Light marketing people suggested.

So, now that I've brewed and tasted Sure as Tootin' Pumpnickel Stout I've got to give lots of credit to Anheuser-Busch not only for the inspiration but for the fact that the folk hero in their radio advertisement offered the option of two beers to his guest: Bud Light and pumpnickel stout. That was nice. I know that my pumpnickel stout is my choice for the moment while watching a Monday Night Football game.

What's it like? Imagine a velvety, smooth and medium-to full-bodied dark nectar. The full flavor is complemented by chocolate, roasty flavors of dark malts but is not harsh. A bitterness is evident but mellow. And because of the flaked corn, wheat and rye malts, the actual body is lightened to approach an extremely satisfying and thirst-quenchable brew perfect for watching any team win or lose. Fact is, what



rye and corn do for bread, they do the opposite for beer — lightening the body, contrary to what than one might imagine. The bouillon powder? Well I just *had* to put a little bit in, if you know what I mean.

Sure as Tootin' is a beer I'll brew again, surely. Meanwhile American Homebrewers Association President Karen Beerela (or is it Barela?) spoke with the top marketing folks at Anheuser-Busch in St. Louis. After a few conversations they realized that some of the homebrewing community was offended by the ad, so they've agreed to stop running it. Hells bells, I can't wait for what they might come up with next — I'll brew that too if it's going to be even half as great as Sure as Tootin'.

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

Mash-extract recipe for 5 gal (19 L)

For the mash

- 3 lb crushed pale malt (1.35 kg)
- 1 lb crushed English crystal malt (0.45 kg)
- 1/2 lb crushed wheat malt (0.23 kg)
- 1/2 lb crushed rye malt (0.23 kg)
- 1/2 lb flaked corn (0.23 kg)
- 1/4 lb crushed black malt (114 g)
- 1/3 lb crushed roasted barley (150 g)
- 1/3 lb crushed chocolate malt (150 g)

Add to the mash runoff

- 1 7/10 lb light dried malt extract (0.77 kg)
- 1/4 tsp bouillon powder (Your choice, but avoid the kinds with preservatives. It was just begging to be included in the recipe.) (1.2 mL)

And boil with hops

- 5 to 6 Homebrew Bittering Units (I used 1 oz or 28 g of English Goldings whole hops, 5.2% alpha acid.)
- 1.3 Homebrew Bittering Units of flavor hops (I used 1/4 oz or 7 g of English Goldings whole hops, 5.2% alpha acid for 15 min.)
- 1 oz Cascade hops for late aroma hops (28 g)
- 1/4 tsp Irish moss (15 min.) (1.2 mL)
- 3/4 cup corn sugar for bottling (150 mL)
- ale yeast is recommended

- **Original specific gravity:** 1.044 to 1.048 (11 to 12 °B)
- **Final specific gravity:** 1.010 to 1.014 (2.5 to 3.5 °B)
- **IBUs:** about 25

Use a step infusion mash. Add 6 quarts (5.7 liters) of 130-degree-F (54.4-degree-C) water to the crushed grain, stir, stabilize and hold the temperature at 122 degrees F (50 degrees C) for 30 minutes. Add 3 quarts (2.9 liters) of boiling water and add heat to bring temperature up to 157 degrees F (69 degrees C) and hold for about 30 minutes.


After conversion, raise temperature to 167 degrees F (75 degrees C), laut and sparge with 2 gallons (7.6 liters) 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 down to 70 to 75 percent from a more typical 80 percent.) Collect about 2 1/2 to 3 gallons (9.5 to 11.4 liters) of runoff and add the malt extract, bittering hops, bouillon powder (optional) and bring to a full and vigorous boil.

The total boil time is 60 minutes. When 15 minutes remain add 1.3 Homebrew Bittering Units of flavor hops and Irish moss. After a total wort boil of 60 minutes turn off the heat and add aroma hops. Then strain into a sanitized fermenter to which you've added 2 gallons of water. It helps to prechill (33 degrees F or 1 degrees C) the water added to the fermenter rather than simply adding warmer tap water.

Bitterness of about 25 IBUs were calculated for this recipe by making the following assumptions: (1) Whole hops were used, (2) The wort boil was a concentrated boil with about 3 pounds of extract per gallon (0.37 kilograms per liter) of liquid boiled, (3) 25 to 26 percent utilization was assumed for 60 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 75 degrees F (10 and 24 degrees C) with the ale yeast.

Prime with sugar and bottle when fermentation is complete.

Relax. Don't worry. Have a homebrewed Sure as Tootin' Pumpernickel Stout. 

Bittering Units

Homebrew Bittering Units 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:

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

The homebrew convenience you've been waiting for!

Now you can have a different homebrew kit with the highest-quality brewing ingredients, equipment, & award-winning recipes from the AHA National Homebrew Competitions* delivered to your home each month (or semi-monthly).

BrewHoppers carefully researches, selects, pre-measures & packs everything you need for 5 gals. of choice homebrew. No shopping, no guesswork! You'll also receive complete how-to instructions & background information on the recipe & style of beer for that month.

*With written permission from the American Homebrewers Association & Brewers Publications.

BrewHoppers

AWARD-WINNING-RECIPE

HOME BREW KITS BY MAIL



Call for a free brochure!



Monthly Kit Includes:

- fresh malt extract syrup
- required specialty grains
- required additives or flavorings
- the finest hops & yeast
- hops boiling bags
- priming sugar or malt
- bottle caps
- newsletter with complete instructions & style information

Beginner Kit Includes:

- 5 gal. glass fermentation carboy
- plastic bottling bucket w/lid
- floating thermometer
- hydrometer w/flask & wine thief
- all necessary hoses, caps, brushes, etc.
- 55 bottle caps & bottle capper
- *The New Complete Joy of Home Brewing*
- Beer kit to make 5 gals. of Pale Ale, Cream Ale, Brown Ale or Porter

To start your BrewHoppers membership

Call 1-800-817-0495

\$21 monthly or semi-monthly kit by mail plus shipping

\$89⁹⁵ plus shipping beginner's kit by mail

BrewHoppers, P.O. Box 1057, Broomfield, CO 80038



Now available from all The Home Brewery™ shops!

"BREW MAGIC" Recirculating Infusion Mash System*

- * Precision Microprocessor Temperature Controls to + or - .1 degree F.
- * Built-in High Efficiency Heat Exchanger
- * Automated Manifold Design
- * Produces Greater Yields

- * Causes no frothing, foaming, or hot side aeration
- * All Stainless Steel vessels, 15 1/2 gallon capacity
- * Special Magnetic Drive Recirculating Pump

*Reviewed by Dr. George Fix in *Zymurgy*, Winter, 1993: "I was simply astonished." "A totally automated system, with which the brewer can exert precise control." Dr. Fix

Stainless Steel Brewing Kettles

Sold separately.

15 1/2 gallon capacity. Totally reconditioned and legal with all edges rounded and deburred. Includes a removable Stainless Mesh False Bottom, built-in 3" Dial Thermometer, Stainless 1/2" Ball Valve and Stainless Lid and Siphon Tube.

- 289.95 plus shipping -



Call for more information

(800) 321-BREW

Professor Surfeit

DEAR

P R O F E S S O R

Perils of Not Relaxing

Dear Professor,

Two questions: First, is chlorine really the peril I keep reading about? Many authors advise preboiling all brewing water. Yet other prize-winning brewers state they don't rinse their equipment after sanitizing in a relatively high concentration chlorine solution. It strikes me that the amount of chlorine in my water supply can't be much more than the amount left in a fermenter after air-drying, and could be less since I can't even smell chlorine in my water. Can't we just let the water sit loosely covered for a few days until the chlorine evaporates, provided all the water gets boiled during the brew?

Second, is it just me, or has this hobby gotten a lot more expensive lately? The price of a can of malt extract has more than doubled since 1987. Commercial beer prices haven't gone up that much. What gives?

Yours etc.,
Gerry Studzinski
York, Pennsylvania

Dear Gerry,

It's my philosophy and belief that chlorine is the peril it is when it enters your beer wet. Dry surfaces don't have chlorine that will get into your beer. Sanitizing equipment with a very strong chlorine solution, not rinsing and then contacting the equipment with wort is not a good, healthy and righteous brewing technique in my book of



worts. You're just asking for chlorophenolic problems down the line. You may not perceive them, but others might. And even if you don't perceive them, that doesn't mean they aren't there. Simply rinse with hot tap water — that's sanitary enough that you won't have any problems.

The price of the hobby has gone up. It's not your imagination. But so has the price of living. But I'd say the quality of the ingredients, the expertise of your local retailer and the quality of all the information out there has far outpaced the rising cost of a can of malt extract. Improved quality hardly ever comes at no additional expense. I think it's been worth it. Don't you?

Yours too,
The Professor Hb.D.

Drinking Cycles

Dear Professor,

I have been brewing for about a year and a half. Recently I started kegging my

brew in Cornelius kegs. My refrigerator holds three tanks with three tap handles on the door.

Unfortunately, I am not drinking the beer as fast as I am making it. I have two more batches ready to try, but I am afraid of hurting the beer by letting the stuff in the refrigerator warm up so I can replace it with the new batches. Will several warming (to room temperature) and cooling cycles damage my beer?

On another note, I have been reading *zymurgy*, and especially your column, since I started brewing. Thanks for all the great help and advice. Keep up the good work.

Homebrew forever,
Marc Goldfarb
Cleveland, Ohio

Dear Marc,

Extreme warming and cooling cycles will affect the beer. But if you are cycling between say 50 and 65 degrees F (10 and 18 degrees C) you aren't going to severely affect the quality. As a matter of fact, contrary to theory, I find myself in the same situation as you and have cycled small kegs between 70 and 38 degrees F (21 and 3 degrees C) a number of times. If the beer changes, it's usually because of simple age and oxidation, not because of thermal cycling. If your beer is clean, not contaminated and free of most oxygen, I wouldn't worry about it. Enjoy the brew.

Cycling,
The Professor, Hb.D.

Stuck Fermentation Blues

Dear Professor,

Like so many of the brewing problems your readers write to you about, mine stems from Papazian and his homebrewing book, *The New Complete Joy of Homebrewing* (Avon Books, 1991). I brewed a five-gallon batch of Colonel Coffin Barley Wine Ale — followed the recipe and procedures as per Charlie's book. The original gravity was off the scale of my hydrometer but best estimates put it at 1.110. I used Wyeast liquid Champagne yeast and started fermentation in a plastic fermenter.

Eight days later I racked the brew to a glass carboy. The specific gravity had dropped to 1.078. Since then the brew has been slowly but steadily fermenting for one year at 65 to 75 degrees F (18.5 to 24 degrees C) depending on the season with a burp from the airlock every 15 to 20 minutes.

I opened the carboy with the feeling that I was disturbing a Pharaoh's tomb and, with all appropriate ceremony, took a gravity sample. The specific gravity was 1.072! The beer was a clear rich amber color. It was sweet from the unfermented sugars, but otherwise had no off-flavors or odors.

My questions to you are:

(1) Is this slow fermentation typical of this recipe using Champagne yeast?

(2) Should I add more yeast, perhaps a different type, and hope it ferments to completion in my lifetime?

(3) Should I will this batch to my grandchildren with sealed instructions for priming and bottling?

(4) Should the carboy and its contents be sent to the American Homebrewers Association for inclusion in a homebrewing time capsule?

I await your sagacious reply.

Very truly yours,
Bob O'Hare
Orange Park, Florida

Dear Bob,

Nope. Your 1.072 stuck fermentation is not typical of that recipe. I suspect there was a lack of oxygen in the original wort when you pitched the yeast. Can the brew be helped? Yes.

Brew a normal batch of beer with a strong yeast culture. When complete, carefully pour off about a quart of the sediment into a sanitized jar and to this add about two cups of unfermented thoroughly oxygenated wort. Let sit for about six to eight hours until this wort has reached a foamy kraeusen. Then add this thoroughly healthy and vigorous kraeusen to your "stuck" barley wine. This should make a difference and help get your Colonel Coffin down to a more reasonable 1.028 to 1.036 or thereabouts.

And by all means send a finished bottle to us for our time capsule.

*Very patiently yours, but not stuck forever,
The Professor, Hb.D.*



Experimental Spirit

Dear Professor,

I joined the legion of homebrewers almost a year and a half ago and greatly enjoy our magazine. It has improved my brain and brew. The latter of these two gains me considerable respect with the lady of the house. It was her demand for a premium brew that drove me to the homebrew alternative. Most of my brewing is done with Briess DME Weiss and the results have been much to our satisfaction.

My main purpose for corresponding is to seek information on the use of cane sugar as an ingredient in brewing. Kentucky has many small sorghum producers and the interest in products with sorghum content is keen. I would like to know if this uniquely flavored

sugar source is compatible with the fermentation process and if anyone reading this has any experience with its use in brewing beer.

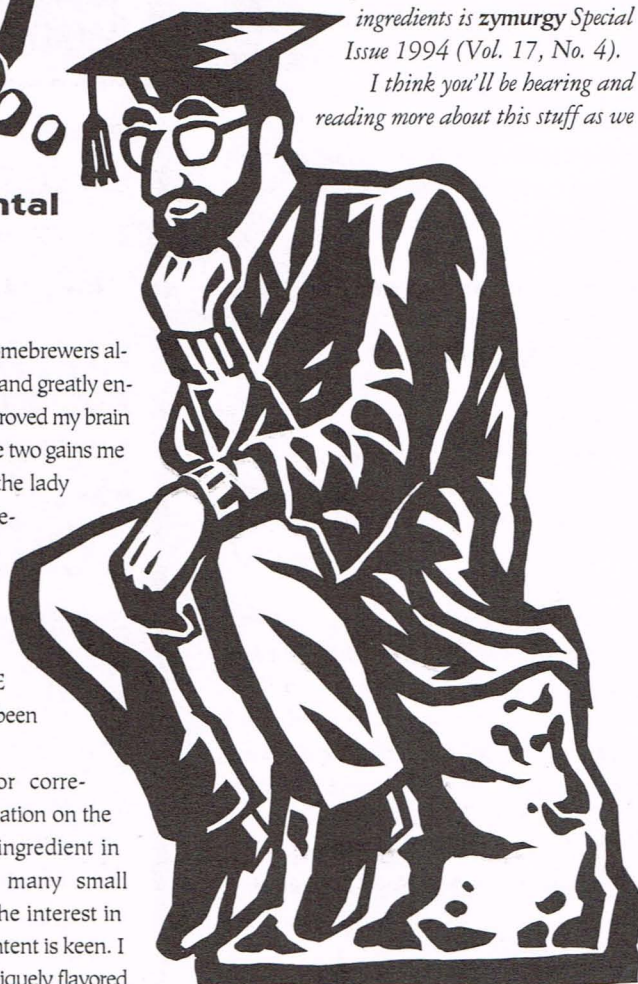
Sincerely Brews,
Kirk Kopitzke
1171 Lakewood
Lexington, Kentucky 40502

Dear Kirk,

I suppose you're referring to sorghum molasses or syrup. Sure, and you betcha it can be used as an adjunct in brewing. I'd start out with 10 percent in a batch and boost it up as long as the flavor it contributes doesn't take over in a way you don't like.

Don't confuse sorghum syrup with references to sorghum beer brewed in parts of Africa and Asia. Sorghum is a grain of many varieties. In some areas it is malted like barley and used in brewing a beer that is often drunk while still fermenting. Some folks confuse millet with sorghum but they aren't the same thing. A good reference for these kinds of special ingredients is *zymurgy* Special Issue 1994 (Vol. 17, No. 4).

I think you'll be hearing and reading more about this stuff as we



homebrewers experiment and microbrewers then take up the spirit and offer some unusual concoctions in their brewpubs to our delight.

Gopher it,
The Professor, Hb.D.

Mead Misconception

Dear Professor,

I am about to embark on what I hope will be a rewarding foray into meadmaking. I have read the chapter on mead in *The New Complete Joy of Home Brewing* (Avon, 1991) and the mead article in *zymurgy* Fall 1992 (Vol. 15, No. 3). None of the recipes listed in these sources suggests adding grape tannin to the honey and water wort. Yet the mead recipes in most of my winemaking books list tannin as an essential ingredient. In fact, my favorite winemaking book, whose recipes have resulted in many batches of excellent wine aging nicely in my cellar, states that mead made without tannin "will be rather insipid and bland." I would like to know your feelings on the subject. My preliminary guess is that "traditional" meadmakers frown on tannin because it is foreign to the "classical" mead-making tradition and therefore is to be excluded. Am I on the right track?

Yours in better brewing (and winemaking),
Tim "Spiff" Walker
St. Paul, Minnesota

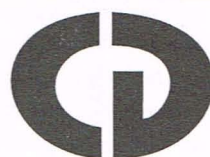
Dear Spiff,

I can tell you that that winemaking book's assessment of mead being insipid and bland is an outright misleading falsification of perception (from mine and countless other mead-makers' perspectives).

Tannin is not necessary, not by any stretch of the imagination. Though tannin can lend a pleasing dry, astringent bite that could balance out a particularly sweet mead. Mead is such a wonderful personal experience, I must simply tell you to try it with and without and discover for yourself.

Both batches will be superb, though you may prefer one to the other. Enjoy the adventure.

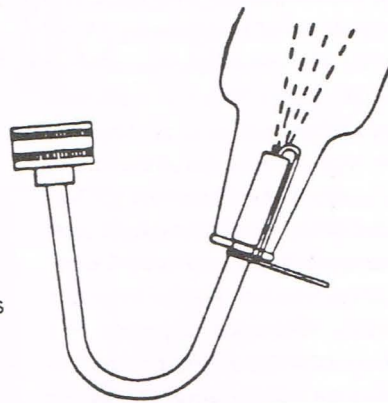
Let it be mead,
The Professor, Hb.D.



CHATEAU
CARBOY AND BOTTLE WASHER

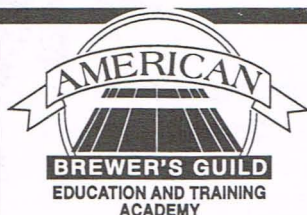
**Constructed of solid brass
and stainless steel
Fully guaranteed
Automatic shut-off
Faucet adapter Available**

WHOLESALE ONLY
call or write for a list of distributors
throughout Canada and the
United States



Manufactured by
Chateau Distributors
(604) 882-9692
(604) 882-9697 FAX

Canada: P.O. Box 8000-391
Abbotsford, B.C. V2S-6H1
United States P.O. Box 2683
Sumas, WA 98295-2683



EXCITING NEW COURSES

**For the
Craft Brewing
Industry**

LEAD INSTRUCTOR:

Dr. Michael Lewis

Professor of Brewing Science
University of California, Davis

UPCOMING CALENDAR:

For advanced homebrewers
"BREWING SCIENCE & SPECIAL TOPICS"

- March 18 - 19, 1995, Boston, MA
- March 25 - 26, 1995, Orlando, FL

How to research, finance, establish & successfully
operate a profitable brewpub or micro.

"BREW PUBS & MICROS:
THE DEFINITIVE SHORTCOURSE"

- March 11 - 12, 1995, Washington, D.C.
- April 22 - 23, Austin, TX

"QUALITY ASSURANCE"

- April 22 - 23, 1995, Austin, TX

4 week classroom intensive

"CRAFT BREWING SCIENCE AND ENGINEERING"
• September, 1995, Sacramento, CA

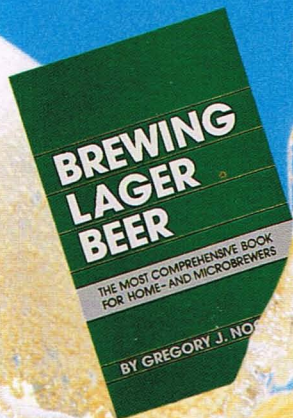
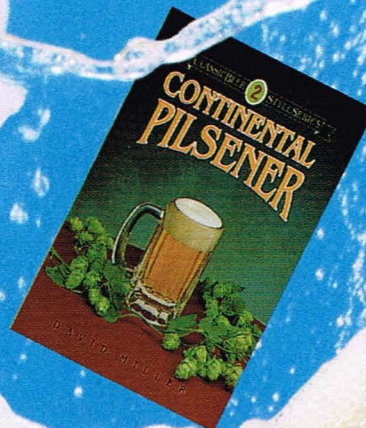
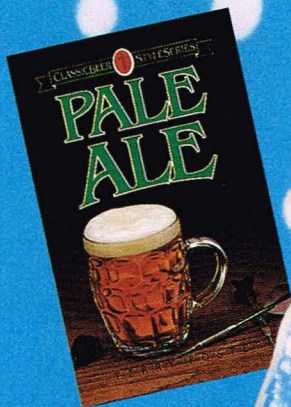
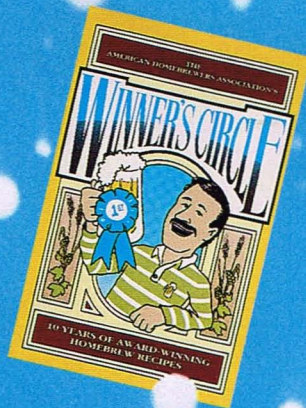
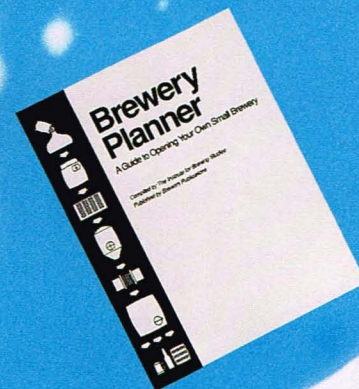
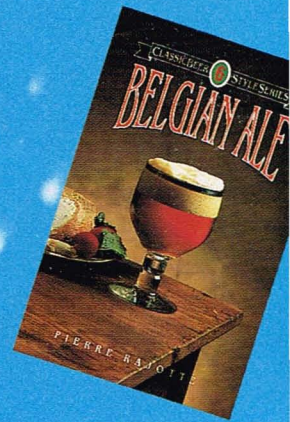
Our exclusive 10 week

"CRAFT BREWER'S APPRENTICESHIP"
• September, 1995, Sacramento, CA

**For a free course schedule and information
on these and other classes offered by the
American Brewer's Guild,**

Call (916) 753-0497 Fax (916) 753-0176

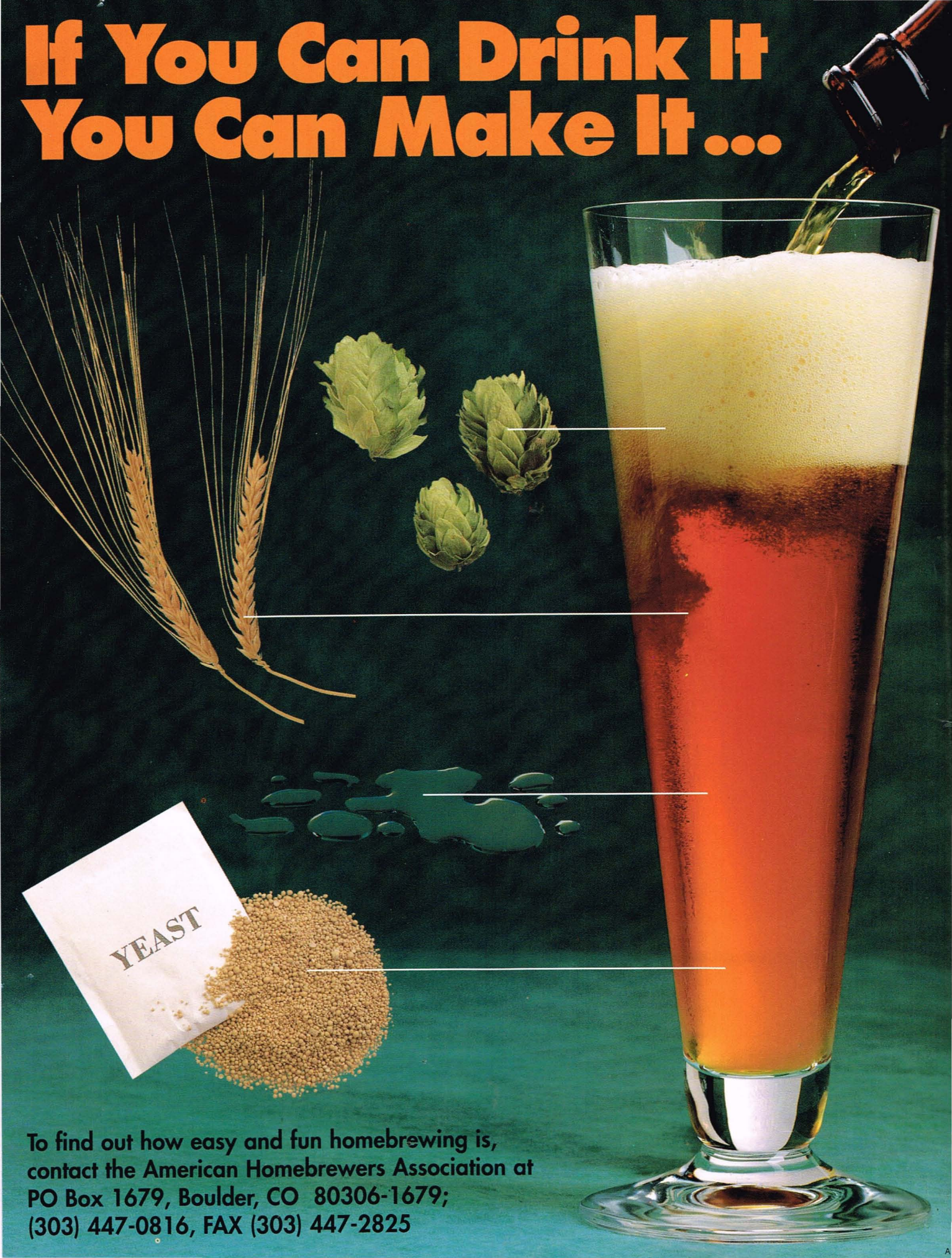
GET BREWING



Brewers Publications publishes
the complete spectrum of books
for homebrewers, professional
brewers and beer enthusiasts.

Brewers Publications
PO Box 1679
Boulder, CO 80306-1679
(303) 546-6514 FAX (303) 447-2825
Call or write for a free catalog.

If You Can Drink It You Can Make It...



To find out how easy and fun homebrewing is,
contact the American Homebrewers Association at
PO Box 1679, Boulder, CO 80306-1679;
(303) 447-0816, FAX (303) 447-2825

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 and contact Linda Starck, Ext. 109, or Bob Stephan, Ext. 108.

Homebrew Kits

A wide variety of Young's malt extract homebrew kits from the United Kingdom are now available to retailers in the United States and Canada through the Mid America Brewing Co. In addition to Young's "Original" line of extract kits, including bitter, lager, export and mild, the company offers an expanded "Harvest" line that includes mild, lager, Pilsener, bitter, Yorkshire bitter and Scottish wee heavy styles.

For wholesale information contact James Dudley at Mid America Brewing Co., 407 S.W. 15th St., PO Box 812, Forest Lake, MN 55052; (612) 464-0386, (800) 374-2739, FAX (612) 464-7717.

Apricot Flavoring

HopTech added apricot flavoring to their line of natural fruit flavors designed for making fruit beers and meads. The apricot flavor comes in a four-ounce dispenser-top bottle. One four-ounce bottle is the recommended amount for a five-gallon batch of beer. All of HopTech's fruit flavors are made from 100 percent natural fruits and contain no preservatives, pectins or sugars. Add the flavors at bottling or kegging time. Other flavors available from HopTech are raspberry, peach, blueberry, pear and cherry.

Manufacturer's suggested retail price for four ounces of apricot flavor is \$5.95, available from homebrew retailers who stock HopTech fruit flavors or direct from HopTech.

For information contact HopTech, 3015E Hopyard Rd., Pleasantown, CA 94588; (800) DRY-HOPS, FAX (510) 426-9191.

Specialty Malts

Morgan's Brewing Co., Australia, has released to U.S. and Canadian markets a range of malt brew boosters. Morgan's Master Blend boosters are concentrated natural malt extracts of specialty brewing grains. Master Blends offers the homebrewer a spectrum of flavors, aromas and colors to incorporate into any beer instead of using whole grains in a steep or mash.

Master Blends beer boosters are available wholesale in 2.2-pound (one-kilogram) cans of Caramalt, dark crystal, chocolate, roasted, lager and wheat malt. For information contact Morgan's Brewing Co., PO Box 1100, Beenleigh, Queensland, Australia 4207.

Fermentap

Fermentap provides a method of transferring or sampling beer from glass carboys without siphoning. By inverting the carboy and installing the patented two-way valve, the procedures of sampling, yeast harvesting and transferring beer routinely done in commercial applications can be copied at home.

The conical neck concentrates sediment at the lowest point, facilitating separation of beer from hops and yeast and minimizing waste. The diverter-strainer allows clean

transfer of fermented beer through the valve by draining from one inch above the lowest point. The strainer also prevents hops from passing through during transfer.

The manufacturer's suggested retail price for the Fermentap system, which includes the valve assembly and a stand that fits both five- and 6 1/2-gallon carboys is \$26.95. For information contact Fermentap at PO Box 30175, Stockton, CA 95213-0175; (800) 942-2750.

Carboy Alternative

Mr. Beer Products offers a unique alternative to glass carboy and plastic bucket homebrew systems. The fermenting unit is blow-molded of Lexan®. The polycarbonate resin provides the chemical stability and high optic qualities desired by those who brew in glass, while offering a lightweight, virtually shatterproof, wide-mouthed, easy-to-clean container fitted with a faucet placed high enough to avoid sediment disturbance during bottling.

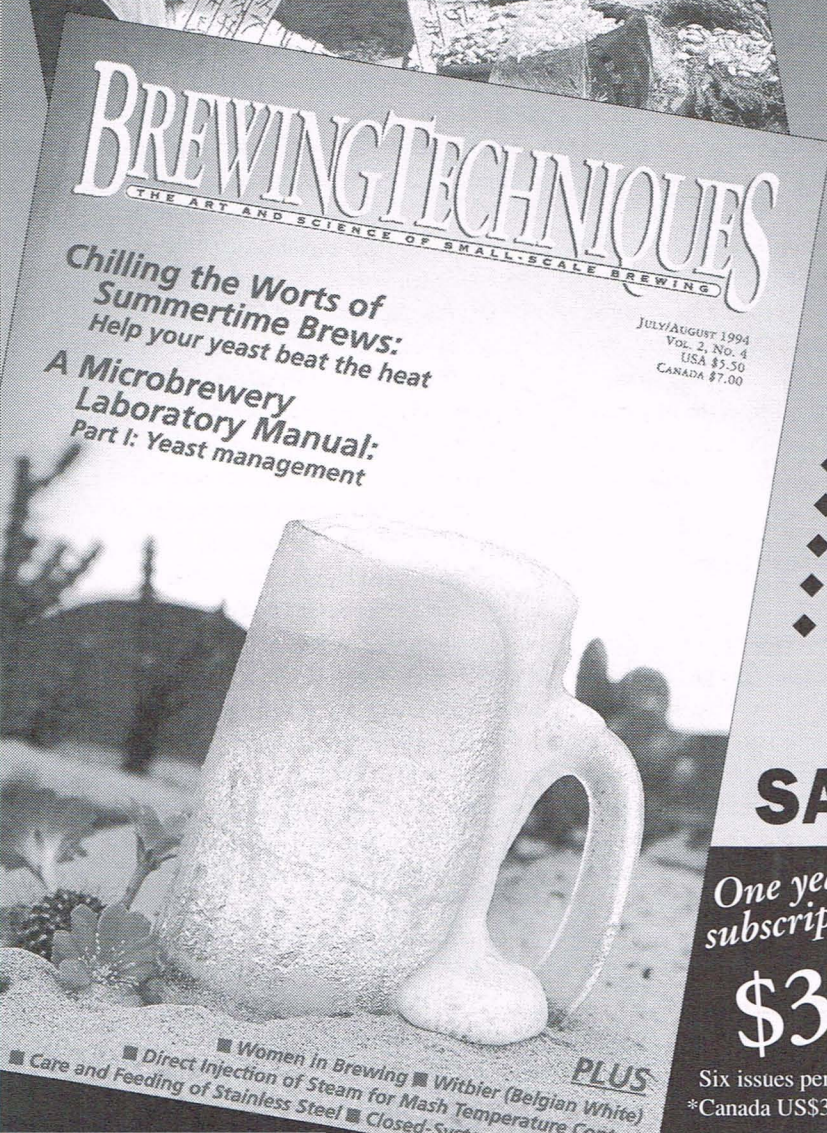
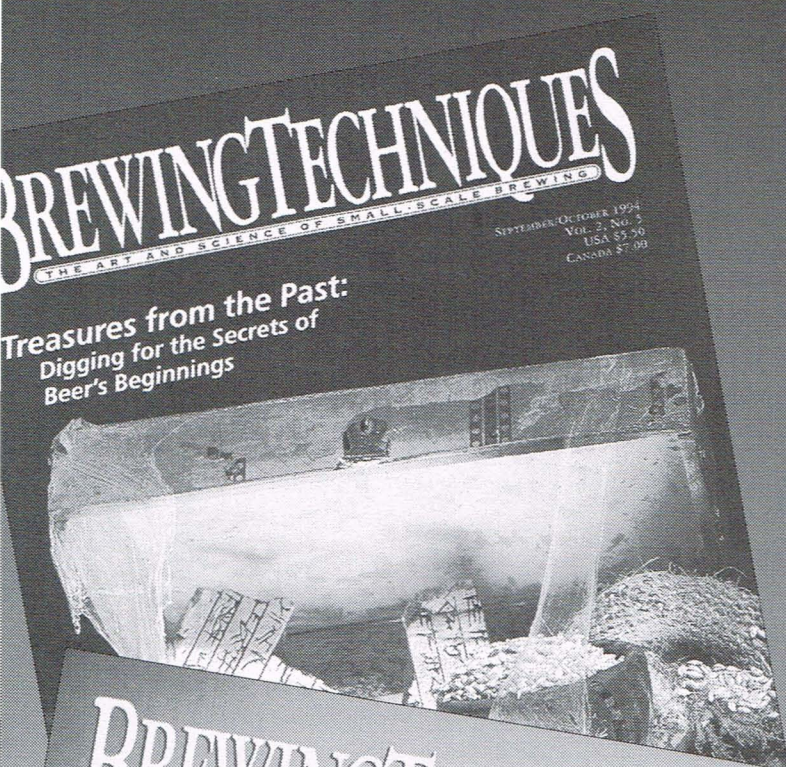
The Mr. Beer package includes a 7.5-gallon fermenter that withstands temperatures of -20 to 270 degrees F, a no-leak faucet with a 0.85 gallon-per-minute flow rate and lock-open handle, 11 inches of tubing for filling bottles, a screw-on lid with gasket for airtight fit, a three-piece airlock assembly and six two-liter UV-light-protected reusable PET bottles with caps.

Manufacturer's suggested retail price for the unit is \$59.95, and \$69.96 for kits packed with a 3.75-pound can of Armstrong Pilsener blond hopped malt extract. For wholesale inquiries call (800) 887-0221, for retail direct sales call (800) 852-4263. For information contact Mr. Beer Products Inc., 5620 N. Kolb Rd. #274, Tucson, AZ 85715; FAX (602) 577-7807.

Compiled by Bob Stephan, advertising assistant.

the **POWER**

to brew your best



Packed with essential brewing information

- ◆ "Ask the Troubleshooter," by Dave Miller
- ◆ "Brewing in Styles," by Martin Lodahl
- ◆ Peer-Reviewed Technical Articles
- ◆ Feature Articles
- ◆ Technical Communications
- ◆ Brewers' Forum
- ◆ Book Reviews
- ◆ New Publications
- ◆ New Products
- ◆ New Literature
- ◆ Calendar of Events
- ◆ Products and Services Directory
- ◆ FREE Information about Products and Services

*Display and Classified Advertisements from
National and Regional Suppliers*

SAVE 20% off newsstand prices

*One year
subscription*

\$30*

For immediate service, call

1-800-427-2993

Six issues per year.

*Canada US\$35, Rest of World US\$45.

(Visa/Mastercard accepted.)

P.O. Box 3222, Eugene, OR 97403, USA

T H E B E S T F R O M KITS

Dan Rabin

Munton & Fison Docklands Porter

We brew with kits because they're easy, right? You mix the malt extract syrup with water, boil, cool, pitch some yeast, ferment, add sugar to prime and bottle. Assuming you have your sanitizing act together, in three or four weeks you have decent beer. If you throw out the dry yeast that comes with the kit and spend a few extra bucks on quality dry or liquid yeast (or hit up your friendly local brewpub for fresh slurry), you may even have really good beer. For some homebrewers, this is enough. Minimal effort, decent results.

But for many, myself included, an essential ingredient is missing. Like painting by numbers, kit beers have no creative dimension. Although we've done the work and achieved satisfactory results, there is a certain detachment between the brewer and the brew because we had no input formulating the recipe. The final product feels impersonal, if only to the brewer.

To create beers with a more personal signature, many brewers add malt extracts or hops, steep some grains, or move to partial or full mashes. Each step gives you more control of your beer's quality and character. But some of these procedures require new equipment, more time and new techniques to be learned and refined. While many of us enjoy this aspect of homebrewing, others believe the added complexity is not desirable.

I brewed three beers using the Munton & Fison Docklands Porter kit. One of the beers was not modified so the kit could be evaluated on its own terms. The other two recipes are intended for brewers comfortable with kit



brewing but who want to produce a more distinctive, personalized homebrew while keeping the brewing process as simple as possible. Using the kit as a base, I made some simple modifications to produce some truly unique beers. The changes should not require any additional equipment and only minimal changes in the brewing process. Rather than using these recipes as ends in themselves, I hope they inspire you to experiment with unique ingredients, unusual modifications, or other variations to the basic kits to personalize your beers and give you more pride and satisfaction in your brewing.

The Docklands Porter kit consists of two cans of hopped malt extract and one envelope of dried yeast. These ingredients are packed in a small reusable cardboard carrying case with a frothy mug of dark beer pictured on the front. A small booklet, "Additional Useful Information, Advice and Tips," gives 10 tips that range from reason-

able (rehydrate the dried yeast) to highly questionable (skim the head off the fermenting wort daily).

Docklands Porter

Ingredients for 5 gal (19 L)

- 2 cans (3.3 lb) hopped malt extract syrup from Dockland Porter kit (1.5 kg)
- 1/4 oz dry yeast (included with kit) (7 g)

- Original specific gravity: 1.045
- Final specific gravity: 1.020

The malt extract was mixed with five gallons (19 liters) of water, boiled for 15 minutes (kit instructions do not mention boiling the wort), cooled and pitched with the dry yeast (rehydrated). The kit instructions predict a starting gravity in the range of 1.039 to 1.043 for 5 U.K. gallons. My wort checked in at 1.045 — the 0.84 U.K. gallon volume difference explains the discrepancy. After three days fermentation slowed so I racked the beer to a secondary fermenter to clear. Although the kit forecast a terminal gravity of 1.014 or lower, my beer finished at 1.020. This seemingly high terminal gravity may not be surprising given the small quantity and unknown viability of the yeast supplied with the kit. I have often been warned against using yeast supplied with kits because the age and handling (possible exposure to temperature extremes) are unknown. Because yeast is such an important component of your beer, I encourage you to purchase it fresh before brewing.



The beer from this batch is dark but not quite opaque and has a slight roasty aroma. Despite the high terminal gravity, it is rather thin in body and flavor. The flavor is mostly of roasted grains with a hint of molasses. It has little hop character and finishes quite dry with lingering notes of licorice. It is light and quenching and thus a good brew to serve friends who may be intimidated by dark-colored beers. It will disappoint those accustomed to more assertively flavored porters.

Raspberry Porter

Ingredients for 2 1/2 gal (9.5 L)

- 1/2 of batch described above
- 1 1/2 lb frozen raspberries (added to secondary fermenter) (0.68 kg)

When the Docklands Porter described above had completed its primary fermentation, I split the batch into two carboys. Raspberries were added to one of the half-batches and allowed to sit in the secondary fermenter for two weeks. The additional sugar from the berries started a vigorous new fermentation, and eventually the fruit turned pinkish-white.

The finished beer has a wonderful raspberry bouquet which, unfortunately, has begun to fade as the beer ages. The flavor is fruity with roasty undertones that produce a crisp, complex and satisfying brew. A more aggressively flavored porter base would likely fight for attention with the added fruit, but the mel-low roastiness of this kit creates a nice balance with the slight tartness of the raspber-

ries. It is noticeably higher in alcohol than the basic kit beer because of the additional sugar from the raspberries. This beer is a joy to drink as each sip seems to reveal a different flavor and entice your palate for the next taste.

Imperial Porter

Ingredients for 4 gal (15 L)


- 2 cans (3.3 lb) hopped malt extract syrup from Docklands Porter kit (1.5 kg)
- 3 lb dark dry malt extract (1.36 kg)
- 1 ounce Tettnanger hops, 4.3% alpha acid (28 g) (60 min.)
- 1 oz Tettnanger hops, 4.3% alpha acid (28 g) (15 min.)
- Wyeast American ale yeast No. 1056

- Original specific gravity: 1.073
- Final specific gravity: 1.020

The malt extracts were mixed with enough water to make a four-gallon (15-liter) batch after allowing for evaporation during

a one-hour boil. To balance the additional malt, hops were added at the start of the boil, and again with 15 minutes remaining. After one hour the wort was cooled, strained into a carboy and the yeast pitched. After three days the wort was transferred to a secondary fermenter and allowed to clear.

This is a beer you can really sink your teeth into. An intensified version of the basic kit, this beer is full-bodied and sweet, but not cloying. The aroma is malty and roasty with a creamy brown head that lingers on. It is surprisingly smooth and finishes with a warming glow. It continues to improve with age. Where the basic kit produces a quencher for summertime thirst, this beer will fight off the chill of a cold winter night.

Dan Rabin of Boulder, Colo., teaches computer-aided design and performs consulting work to support a tireless homebrewing habit. He enjoys exploring the Colorado mountains and brewpubs with his wife, Karen, and two-year-old "micro" brewer, Melissa Amber. Dan is a member of Hop, Barley and the Ales. He won a gold medal in the herb beer category of the AHA 1994 National Homebrew Competition. 

Get The New...

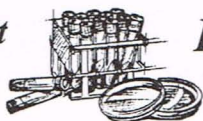
Brewers Resource

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 Worlds
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

Put Pride Into Your Label

PrivateLabel™ the original label creation software package for homebrewers, includes everything you need to design custom beer labels on your PC in minutes!

Private Label Software

- Create full color custom beer and wine labels.
- Features include; sophisticated graphics, text and illustration capabilities.
- Import graphics from numerous sources: TIFF, PCX, BMP, META and PhotoCD.
- Includes **free** easy off label glue, **free** sample clip art, fonts and **free** perforated label stock!
- Prints on standard laser or ink jet printers.
- For Microsoft Windows.

To order, send \$49 check or money order plus \$4.95 shipping and handling to: Practical Products CO, Fernbrook Business Center, 21595 Fernbrook, Mission Viejo, CA 92692. California residents add 7.75% sales tax.

714.768.3398 Compuserve 71333, 1557

Brewer's Calculator

THE ULTIMATE IN BREWING SOFTWARE



New Version!!
Now keeps track of
Inventory Levels

Only
\$39

plus \$3 shipping and handling

Recipe Formulation

Calculate Original & Terminal Gravity, Color, Bitterness, Water Treatment and More! Includes profiles for all AHA recognized styles.

Category **India Pale Ale**

Category Range

	Low	Calculated	Hi
Gravity	1.050	1.060	1.065
Alc./Vol.	5	5.8%	6.5
IBU	40	52	65
Color	8	8.7	14
Terminal Gravity		1.015	

Inventory Databases

Easily edit any of the databases, including malt, hops, yeast and beer styles.

Call or write for more details or send \$5 for a demo disk. (Refundable with purchase)

Batch Logging

Neatly organize all of your brewing data and produce beautiful print-outs.

Regent Software Co.
15 Camellia Place
Oakland, CA 94602
(510) 482-1609

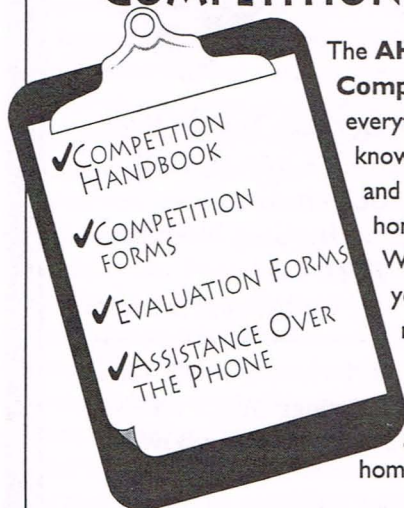
On-Line HELP! with malts, hops, yeast and beer styles.

CA residents add \$3.22

Money-Back Satisfaction Guarantee!

Requires Windows™ 3.1 and 3 Meg RAM

WE'VE GOT 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; FAX (303) 447-2825,

\$40 for AHA members, \$70 for non-members.

Two-month minimum notice required.

zym18



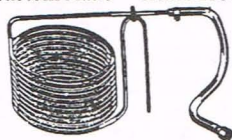
Ask for our
SPECIALTY MALTS & CBW®
CONCENTRATED
BREWERS WORTS!

Briess Malting Company
Chilton, WI 53014

RCA Distributors

New & Improved
- Only Patented -

Immersion Wort Chiller
Simple — Time-Saving — Easy-To-Use
Custom Made — Home Brewer to Brew Pub



Starts
\$25⁰⁰ + S&H

Basic Model #IWC-8 Dimensions: 25' +/-,
Length of 3/8" Copper Tubing. Coil Diameter
9" w. x 15" h. Fits 5-7 gal. Primaries/Buckets.



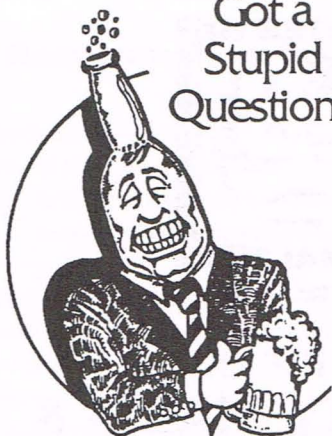
Beer • Wine • Soda

Call or Write for **FREE** Catalog

Phone/Fax 603-445-2018
1-800-RCA-BREW

10 North Street, North Walpole, NH 03609

Got a
Stupid
Question?



Ask the Beer Geek.

Only in
BarleyCorn

A one year subscription
(six issues) to the premier
East Coast Beer
magazine is only \$15.

BarleyCorn

P.O. Box 2328

Falls Church, VA 22042

GUS'S



GUS'S Commitment:

Our brewers ALWAYS brew for less!

If you know what products you want and you want them at rock bottom prices, then give GUS a call!

Ask about our HOMEBREW club discounts!
OUR PRICES ARE AS CLOSE TO WHOLESALE AS YOU'LL EVER GET!!!

GUS'S is located in the Great Lakes State!

Call for your free catalog and learn why it saves you \$\$ to order by mail rather than buying from your local retail store. We at GUS'S believe in the environment and use recycled boxes and packing materials to save you even more \$\$, and more important, to save our planet.

Order during
hobby hours:

CALL 1-800-475-9688

T-F 4pm - 11pm EST
Sat. 9am - 5pm EST

CLASSIC BEER STYLE SERIES

This classic library of books on traditional beer styles continues to set the standard. Each book is researched by experts and details the history, flavor profiles, methods, recipes and ingredients of a specific style of beer. For homebrewers, professional brewers and beer enthusiasts, these books are a great way to expand your knowledge of beer styles and brewing techniques.



Pale Ale

by Terry Foster

Continental Pilsener

by David Miller

Lambic

by Jean-Xavier Guinard

Vienna, Märzen, Oktoberfest

by George and Laurie Fix

Porter

by Terry Foster

Belgian Ale

by Pierre Rajotte

German Wheat Beer

by Eric Warner

Scotch Ale

by Greg Noonan

Bock

by Darryl Richman

Wet your whistle with a six-pack of your favorites from the *Classic Beer Style Series* for \$60.95 — a 15% savings! When ordering, please be sure to specify which six books you want to receive.



Published by
Brewers Publications

To order a book from the *Classic Beer Style Series* for \$11.95 (\$4 P&H) or a six-pack for \$60.95 (\$7 P&H), contact Brewers Publications at PO Box 1510, Boulder, CO 80306-1510; (303) 546-6514, FAX (303) 447-2825.

zym18

REVIEWS



Bock

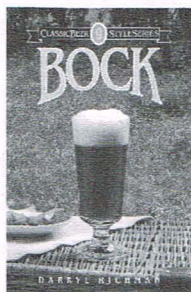
The Classic Beer Style Series from Brewers Publications is a reference tool whose value grows as each new volume is published. The ninth installment, Darryl Richman's *Bock* (Brewers Publications, 1994), provides a flexible approach to brewing this style and a rich sense of its history.

Darryl's qualifications are demonstrated by the awards he has won in AHA National Homebrew Competitions. His doppel-bocks won first place in the bock category in 1990 and second place in 1994.

The author has researched bock beers on their home turf. In covering the history of the style, he goes into some detail regarding the early top-fermented bock beers, and gives recipes for his interpretations of these styles. Such an exercise helps brewers grow and learn from the past. Darryl explains why Munich's brewers used darker malts and less hops in their bock beers than the style's originators in Einbeck. The book does not include Weizenbocks, a subject explored in Eric Warner's *German Wheat Beer* (Brewers Publications, 1992), the seventh in the series.

Darryl is willing to question conventional wisdom, reasoning that dark malt, called Munich malt in the United States, should comprise at least half the grain bill for a dunkles bock. He emphasizes the importance of hop backbone and hop-malt balance in this style so strongly associated with malt.

Darryl understands the limitations of U.S. craft brewers and homebrewers who often must make substitutions for authentic German brewing materials. He introduces the



concept of primary, secondary and tertiary flavors to help brewers determine which ingredients and techniques are most critical in defining the character of bock beer and which might be good candidates for substitution.

For brewers who prefer to use malt extract, Darryl points out the importance of fresh malt extract of dependable quality, noting that old, oxidized extract has a particularly damaging effect on a dunkles bock. His extract-based recipes include minimashes to make sure the yeast in these high-gravity beers has enough nutrition to do its job.

Darryl clearly identifies his preferred methods, but shows how a flexible brewer can obtain good results from other methods, for example, using an infusion mash instead of a double- or triple-decoction, and he goes into some detail on mashing methods. He encourages the adventurous to try unusual hop combinations even though the style is steeped in tradition.

The recipe section is prefaced by several pages that explain the author's assumptions regarding mash efficiency and hop utilization. Brewers are given guidelines for making adjustments for their equipment and methods. Like all books in the Classic Beer Styles Series, *Bock* also includes descriptions of commercial examples, an extensive list of references and an index.

The determined brewer will come away from this book with a clear idea of the difficulties involved in brewing a proper bock beer, and the knowledge required to surmount them.

Bock, by Darryl Richman, Brewers Publications, 1994, publisher's suggested retail price: \$11.95.

—Reviewed by Jim Dorsch, an AHA member since 1982, give or take a year.

Using Hops

Using Hops, by Mark Garetz, contains a number of very good points and information that had not been introduced to the homebrewing community from sources such as *The Journal of the American Society of Brewing Chemists*. For example, the fact that highly flocculent yeast can result in a beer with 10 percent more bitterness than a beer brewed with an unflocculent yeast has been available in commercial brewing literature since 1955, but not until this book has the data been noted in homebrewing literature. The chapters titled "The Hop Plant," "Hop Products" and "Processing, Buying and Evaluating Hops" are well-written, informative and well-researched.

The only black spot in these chapters is the author's insistence that knowing the measure of total oil content is an effective way to dryhop consistently. Skeptical of this effectiveness, I spoke with Dr. Alfred Haunold, who is in charge of hop breeding and genetics for the United States Department of Agriculture, about the usefulness of total hop oil as a measure of the dryhopping potential of a hop sample. He responded that without knowing what percentage of the oil is myrcene (which varies quite widely, even within a particular crop year) knowing the total oil is not very useful.

The author's brewing naivete is illustrated throughout the book. I counted two-thirds of the pages as having errors, significant omissions or questionable information. For example, claiming that Spalt is a "noble-type" hop (only Czech Saaz, Hallertauer



TABLE 1

Style	Target IBUs	Batch Size O.G.	Batch Size (gal.)	Boil Gravity	Recommended Hop Addition (in ounces)			
					Rager + 10%		Garetz	
					60 min.	15 min.	60 min.	10 min.
American wheat	15	1.050	5	1.050	0.75	0.75	1.40	0.5
American pale ale	40	1.056	5	1.056	1.80	1.00	3.38	1.0
American pale ale	40*	1.052	10	1.104	4.40	2.40	8.87	3.0

*41.5 IBU as tested by the Siebel Institute of Technology on a batch of beer brewed with Rager's formulas plus 10% (as shown in columns 6 and 7), using pellets, hop bags and no skimming or blowoff of kraeusen.

Mittelfrüh and German Tettninger are "noble-type" hops); that dark grains can cause astringency (in fact, dark grains lower the pH of the mash or steep, thus *reducing* astringency); or suggesting that we correct overhopping by diluting our homebrew with a commercial beer like Bud, because "Bud is neutral enough that it won't detract from your beer." Diluting homebrew with commercial beer is a rather unsavory idea, and Budweiser is not a very neutral-tasting choice among American light lagers.

In the chapter "Hop Varieties," the author uses vague descriptions for aroma such as "medium with a pleasant hoppiness" for Galena or "mild and pleasant, with the English having the edge over the domestic" for Fuggles. His suggestions for substitutes are absurd; for example, recommending Fuggles over British Columbian Goldings as a substitute for East Kent Goldings. I suspect the author has little experience with many of the varieties, otherwise he would not have recommended the earthy, slightly woody Fuggles as a substitute for the wonderfully resinous Styrian Golding, despite their common lineage. Consequently, one of the most important parts of the book, where the author had the opportunity to help beginners and intermediates finally unravel the mysteries of hop selection and substitution, is littered with useless information and bad advice.

The book contains a bibliography but is completely unreferenced, which makes the formulas highly suspect. In the cases where I found several sources for parts of the formulas in the technical literature, the assumptions made by the author in converting the technical data into formulas were erroneous or incomplete, making the usefulness of these formulas questionable.

In *Factors Affecting the Efficient Utilization of Hops* by R.D.Hall, one of the references cited, utilization was found to be significantly influenced by the mash temperature, yet this factor was omitted from the formulas presented in the book, despite the fact that other, less influential factors were included.

Another example of the formulas not correlating with published data regards the effect of filtering on hop utilization. George Fix has reported no losses in IBUs when filtering with pore sizes greater than or equal to 1 micron, and a 5 percent loss of IBUs with tighter filtering. The author states that the effect of filtering will decrease utilization from 1.25 percent to 2.5 percent, but did not provide any correlation to pore size.

After all the rigors of calculating effects caused by factors such as altitude and hop age, the author suggests rounding to the nearest one-quarter ounce which, for a 1.125-ounce addition, can introduce a 10 percent error!

Ideally, experiments should have been done to test the validity of the formulas, but a few examples based upon successful recipes will illustrate the differences between Jackie Rager's formulas from *zymurgy* Special Issue 1990 (Vol. 13, No. 4) and the author's. I randomly selected several recipes from my logbook in which the side-by-side tastings with commercial equivalents and tests done by the Siebel Institute of Technology, Chicago, Ill. showed that the IBUs were on target. For the recipes I used Rager's formulas, but added 10 percent more hops to compensate for the hop bags I used. As you can see in Table 1, using the author's formulas would have almost doubled the hop rate for these beers and certainly increased their bitterness well above what already had been judged as on target.

In the final chapters, the author attempts to redefine the usage and terminology of fla-

vor hops and completely discounts any bittering effect these additions may impart to the beer. "So we don't generally need to worry about the bittering contributions from late hop additions," writes the author, defining only "very late" as "from 15 minutes before knockout ... to knockout." Every other source of utilization information I have read, including some from the book's own bibliography, indicates there is some isomerization of alpha acids (and therefore some bittering) even in boils shorter than 15 minutes.

A comprehensive book about hops for the homebrewer and microbrewer was desperately needed, but this book falls short of filling that need. The errors and misinformation will not only confuse many unsuspecting readers, but will make it that much more difficult for subsequent books to present the correct information.

Using Hops by Mark Garetz, HopTech, 1994, publisher's suggested retail price: \$16.95.

—Reviewed by Al Korzonas, a National BJCP judge, technical editor for *zymurgy* and owner of Sheaf and Vine Brewing Supply in Countryside, Ill.

Party Keg System

Tired of washing all those bottles? Are you also tired of hearing all your friends talk about their cool new keg systems? Well, if you are a typical poor American like me with two cars, two color TVs and only one refrigerator, you'll like this.

The party keg system dispenses beer from five-liter minikegs small enough to fit into your existing (and only) fridge without stealing any of that precious space reserved for your Kraft American slices. You can line up two or three kegs on one shelf where you might otherwise put a three-liter soda bottle. One will even fit in an Igloo Playmate™ ice chest.

They are not just convenient, they're functional. While your friends are finishing that five-gallon keg of Christmas ale in February, you'll happily be sampling your way into spring, five liters at a time.

Use the CO₂ tapping unit to make a minikeg system from a five-liter keg with a pressure-regulated tap and a reusable bung. Beer is dispensed with pressure from a small

CO₂ cartridge. When I have an IPA on tap, I keep the pressure low and when I want a big creamy-headed Weizen, I open it up a little bit. You control the dispense pressure.

This review of the five-liter minikeg system is not so much because of misinformation about it, but lack of any information at all. It seems not many people own these things, or at least they're not talking about them. One thing for certain, the manufacturer of the BeerKing isn't giving out many clues. The instructions that come with this German-made product are a step above useless. Wading through the broken English (hint: ist=is, ohne=without) you will soon have a tapped minikeg and not much idea where to go from there.

After sacrificing my first minikeg of beer (foam, rather) to the BeerKing tapper, I believed it to be a "crime against humanity." But after a little experimentation I couldn't be happier with the BeerKing tapper minikeg system. Here is what the instructions for the CO₂ tapping units should say:

Kegs: You can buy these from the retailer who sold you the minikeg system for about \$5 to \$7 each. You can also buy them filled with beer (normally a German lager) in beer stores that have a large selection. The price will range from \$13 to \$17 for the filled ones. The kegs are made of steel with food-grade lacquer lining, so an iodine rinse is the best sanitation choice.

Bungs: These fit in the hole in the top of the keg like a bottle cap on a bottle. They are about 75 cents and, like the minikegs, are reusable. The two-piece bung consists of a rubber donut outside and a hard plastic removable center. The center is pushed out of the donut into the keg when you tap it. You should buy extra bungs. Somewhere along the line you'll lose part of one or accidentally push it into the keg (during your kegging process) at which point you'll have to empty the keg to retrieve this heavier-than-beer object. They're only 75 cents, do it!

Priming: In general, if you want to drink the beer in a week, add one tablespoon of corn



sugar boiled in a small amount of water to the minikeg. If you can wait longer, use 1/2 tablespoon of corn sugar.

Tapping: When tapping a new keg, don't release any CO₂ into the keg until you need it to get the beer out (i.e., let the natural pressure push the beer out). When you can't fill your pint in an acceptable time (20 seconds or so) then release some CO₂ into the keg. This means turning the dial clockwise until you hear the gas going into the keg. When you hear the flow stop, close the valve (counterclockwise) and dispense. If you leave the valve open the beer will overcarbonate.

Installing a CO₂ cartridge: Always make sure the valve on the tap is closed. Sixteen-gram and eight-gram cartridges are available. Using the eight-gram cartridges requires an adapter with the BeerKing that costs about \$1.50. The 16-gram cartridges run about \$1 each and the eight-gram cartridges are about 60 cents each. Before putting the cartridge into its holder, put a small dab of grease on the pointed end of the cartridge. This will help the cartridge seal against the lip of the CO₂ dispenser and keep the gas from leaking out over time. I use an eight-gram cartridge and a little bit of another to dispense one minikeg.

Storage: I have kept a tapped keg in my

(only) fridge for longer than two months while I was on vacation with no ill effects.

Tapper: There are several tap models from which to choose: The BeerKing, a black plastic version (about \$30), the Party Star Tap, a metal version (about \$60) and the Multi-tap Air Pump which uses outside air to force the beer out (about \$25). I have owned the plastic Beer King model for about seven months and am pleased with it. The plastic is cheap looking but quite sturdy. Tappers are sold at most homebrew supply shops.

The minikeg is not as small as a bottle or as big as a keg, and five liters is about all I want of any beer before I go on to something else anyway. I always keep three or four different kegs of beer lying about and a few odd bottles to take to friends or enter in competitions. It's not a panacea, it's a minikeg!

—Reviewed by Mark Childers, a native Oklahoman who lives with his wife Caro in Tulsa. Living in a virtual beer wasteland, Mark began his own tiny oasis of civilization in the second room of their modest, single-refrigerator apartment four years ago.

FREE CATALOG



Everything you need for beermaking or winemaking!

- ★ Malt Extracts & Kits
- ★ Grains & Hops
- ★ Brewing Supplies & Equipment

We have been supplying home fermenters for over 20 years - write or call today!

★ Brewing Yeasts ★
Full Line - Liquid & Dry

(800) 342-1871

(206) 365-7660

FAX (206) 365-7677

THE CELLAR

Dept. ZR, Box 33525
Seattle, WA 98133



HOMEBREW CLUBS



Caroline Duncker

Most clubs, whether they are large or small, are involved in some kind of fund-raising activities. With T-shirt sales, raffles, beer dinners and brewing with professional brewers, clubs raise money for expenses such as newsletters, postage, equipment, education, brewing ingredients and beer. Club money could go farther once the club establishes itself as a not-for-profit entity. The Worts of Wisdom, a homebrew club in Santa Clara, Calif., did just that. In the fall of 1994 they applied for 501(c)(7) not-for-profit status to enable the club to make money in fund-raising ventures.

Members of the Worts of Wisdom were motivated to apply for such tax status after they served as the brew crew at the Small Brewers Festival in Mountain View, Calif., July 16 and 17, 1994. The festival had more than 24,000 attendees and the proceeds were donated to local charities. After the event, the Small Brewers Festival wanted to thank the Worts of Wisdom for their help by giving them a monetary donation, but the donation could not be made to the club unless the club had an employer identification number, otherwise the donation would be taxed as income.

Because the Worts of Wisdom are involved in a number of activities that raise money for their club, they wanted to have tax-exempt status in order to continue to coordinate and implement events of this magnitude as well as to make money for educational club events. Not-for-profit status allows tax-deductible donations to be made to the club; in turn, the club does not pay income tax on these donations.

Richard Allen, president of the Worts of Wisdom, applied for not-for-profit status, 501(c)(7), as a social club. A social club is defined

NOT-FOR-PROFIT STATUS —

ONE CLUB'S EXPERIENCE

as one that is organized for "pleasure, recreation and other similar non-profit purposes and all of its activities are for those purposes," by the Internal Revenue Service. The IRS is the agency empowered to approve recognition of exemption from federal income tax, or tax-exempt status. As such, it is no surprise there are a number of forms to fill out to complete the application process.

Steps to achieve 501(c)(7) status:

- 1 Compose club bylaws.
- 2 Apply for employer identification number with IRS form SS-4.
- 3 Apply for recognition of exemption with IRS form 1024 under section 501(a).
- 4 Send in the user fee for an exempt organization. The amount differs depending on club income.
- 5 Provide a financial statement: club income and outlays.

The club bylaws should be written in formal language and cover all aspects of the club's structure and intent. Richard says from experience, "many members of the club did not like the legalese, but the better the bylaws the better chance of satisfying the IRS." The Worts of Wisdom's bylaws include: club name, definitions, objectives, membership, membership fees, censure, probation, fines, suspension and expulsion, executive committee, club duties, quorum, duties of the officers, meetings, elections, general, contracts and agreements, expenses, recall of executive committee members and policy.

For example, one of the Worts of Wisdom's objectives is "to promote the hobby of homebrewing by learning more about brewing, sharing their brewing experiences and their beers among club members throughout the southern San Francisco Bay area."

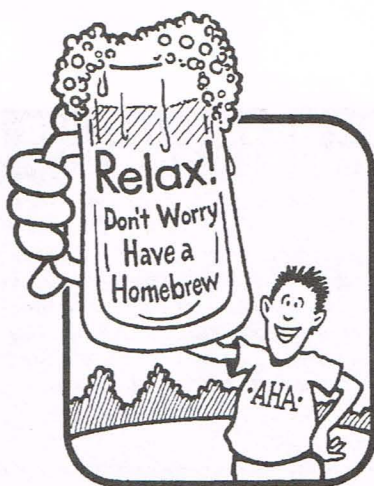
To secure an employer identification number, the delegated club member needs to call the IRS at (800) 829-1040 and ask for form SS-4, Application for Employer Identification Number. The SS-4 form must be completed and returned either by mail or FAX within 24 hours of receipt. The SS-4 form has a different number to call to receive your tax identification number over the phone.

Once you have a tax identification number, form 1024 under section 501(a) must be completed to achieve recognition of exemption.

Form 8718, User Fee for Exempt Organization Determination Letter Request, accompanies the payment for not-for-profit status. The payment is a one-time fee that is dependent on the amount of income the club receives each year. The Worts of Wisdom paid \$150 for their not-for-profit status.

The club's financial statement is included with form 1024. The club sends in an annual statement to the IRS once they have achieved not-for-profit status. Having a good treasurer is helpful on this one! If a club is just starting out, this will be the easiest part of the application process.

Richard's previous experience writing bylaws as a member of a dart league gave the Worts of Wisdom a head start in this regard, which helped the process of achieving not-for-profit status. The club bylaws



were passed by the club in September 1994, the IRS forms were submitted in October and the club was a legal entity by the end of that year.

The club bylaws can be modified after a club receives 501(c)(7) status. As long as the club's basic purpose remains unchanged and it is not producing or distributing a product for profit, the club can retain not-for-profit status.

Richard recommends that clubs get as much done ahead of time as they can. "It



AHA SANCTIONED COMPETITION

Kudos

April 28, 1994

FIFTH ANNUAL CENTRAL FLORIDA SUNSHINE CHALLENGE

Narcoossee, Fla., 229 entries.
Dave Pappas of Orlando, Fla., won best of show.

June 2, 1994

GREAT CANADIAN HOMEBREWED COMPETITION

Toronto, Ontario, 250 entries.
Dave Willis of Burlington, Ontario, won best of show.

July 9, 1994

EDMONTON HOMEBREWERS GUILD SIXTH ANNUAL OPEN HOMEBREWING COMPETITION

Edmonton, Alberta, 206 entries.
David Asquin of Beaumont, Alberta, won best of show.

July 16, 1994

BEERSTOCK: THE NORTHWEST AMATEUR BREW CHAMPIONSHIPS

Seattle, Wash., 28 entries.
Mark Jones of Beaverton, Ore., won best of show.

July 16, 1994

EL DORADO COUNTY FAIR

Placerville, Calif., 66 entries.
Bill Gilbert of Placerville, Calif., won best of show.

July 17, 1994

THE NUDE BREWERS — MIDSUMMER BREWING CONTEST

Gainesville, Fla., 26 entries.
Robert Rydel of Charlotte, N.C., won best of show.

July 23, 1994

SANTA CLARA COUNTY FAIR 1994 HOMEBREW COMPETITION

Santa Clara, Calif., 71 entries.
Al Branch of Livermore, Calif., won best of show.

Aug. 5, 1994

NORTH TEXAS STATE FAIR HOMEBREWED BEER COMPETITION

Denton, Texas, 256 entries.
Mark Hansen of Oakbrook, Ill., won best of show.

Aug. 12, 1994

MAZER CUP MEAD COMPETITION

Troy, Mich., 101 entries.
Robert Pollard of Norfolk, Va., won best of show.

Aug. 13, 1994

JOSEPHINE COUNTY FAIR AMATEUR BEERS COMPETITION

Selma, Ore., 38 entries.
Ross Litton of White City, Ore., won best of show.

Aug. 14, 1994

CALIFORNIA STATE FAIR HOMEBREW COMPETITION

Sacramento, Calif., 344 entries.
Kelly Robinson of Ceres, Calif., won the best of show.

Aug. 20, 1994

1994 MICHIGAN STATE FAIR HOMEBREW COMPETITION

Ann Arbor, Mich., 104 entries.
Matthew DePerno of New York, N.Y., won best of show.

Aug. 20, 1994

BEER AND SWEAT '94

Cincinnati, Ohio, 24 entries.
Fred Dockus of Wadsworth, Ohio, won best of show.

Aug. 20, 1994

NEW MEXICO STATE FAIR

Albuquerque, N.M., 202 entries.
James Burch of Albuquerque, N.M., won best of show.

Aug. 20, 1994

PEACH STATE BREW-OFF SECOND ANNUAL

Decatur, Ga., 24 entries.
John C. Allen of Alpharetta, Ga., won best of show.

Aug. 20, 1994

ROCKY MOUNTAIN HOMEBREWER'S COMPETITION

Frisco, Colo., 20 entries.
Brad Butterfield of Salt Lake City, Utah, won best of show.

Aug. 22, 1994

ALASKA STATE FAIR HOMEBREW COMPETITION

Eagle River, Alaska, 128 entries.
Frank Santora of Fairbanks, Alaska, won best of show.

Sept. 3, 1994

WDT DEAF SUMMER BREWS COMPETITION

Portland, Ore., 23 entries.
Steve Kappel of Portland, Ore., won best of show.

Sept. 5, 1994

CENTRAL ILLINOIS BREWERS ASSOCIATION FIRST HOMEBREW COMPETITION

Decatur, Ill., 39 entries.
David Lloyd of Gainesville, Texas, won best of show.

Sept. 10, 1994

SONOMA COUNTY HARVEST FAIR HOMEBREW COMPETITION

Santa Rosa, Calif., 138 entries.
Jim Dekloe of Suisun, Calif., won best of show.

Sept. 24, 1994

COMMON GROUND COUNTRY FAIR

Rockport, Maine, 258 entries.
Bill Ciffin of Richmond, Maine, won best of show.

Sept. 24, 1994

EMERALD COAST BREWFEST '94

Valparaiso, Fla., 33 entries.
Elizabeth Bergmann won best of show.

Sept. 24, 1994

TRUB OPEN VI

Carrboro, N.C., 115 entries.
Mike Lelivelt of Durham, N.C., won best of show.

Sept. 30, 1994

HOMEBREW SHOOTOUT

Denver, Colo., 90 entries.
Tom Hall of Denver, Colo., won best of show.

Oct. 1, 1994

STEBB'S ANNUAL OKTOBERFEST HOME BREW COMPETITION

Cedar Falls, Iowa, 18 entries.
Peter Manson and Ed Wolfe of Coralville, Iowa, won best of show.

Oct. 8, 1994

S.H.Y. SOUTHEASTERN HOMEBREW OF THE YEAR

Decatur, Ga., 96 entries.
Robert O. Hall Jr. of Athens, Ga., won best of show.

Oct. 9, 1994

FIRST STATE FAIR OF TEXAS HOMEBREW COMPETITION


Dallas, Texas, 192 entries.
Darrell Simon of Rowlett, Texas, won best of show.

Oct. 16, 1994

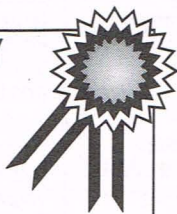
EVANSTON FIRST SIXTH HOMEBREW CHALLENGE

Evanston, Ill., 78 entries.
Ray Daniels of Chicago, Ill., won best of show.

helps if you assume the IRS will tell you that you did something wrong, so be thorough," Richard says. In Richard's view, becoming a not-for-profit entity is a club-motivated task. The IRS does not wish to police clubs, they are happy clubs are reporting their income. Richard says, "We are simply telling the IRS what our club is doing financially which, in turn, allows us to make money for the club."

Not-for-profit status is different from non-profit or incorporated status. Watch this column for details on how to incorporate your club and the benefits for doing so. 

AHA CLUB-ONLY COMPETITION WINNERS



WEISS IS NICE First Place

**Rob Nelson, Duvall, Wash.,
of the Brews Brothers**

Second Place

**Tom Hail, Denver, Colo.,
of The Unfermentables**

Third Place

**Adam Klager,
Corpus Christi, Texas,
of the Bay Area Society of
Homebrewers (BASH)**

**Sixty-four wheat beers were
judged in the Aug. 20
competition organized by
New York's Upstate New York
Homebrewers.**

BEST OF FEST First Place

**Bob Allen, Poulsbo, Wash.,
of the West Sound Brewers**

Second Place

**Rich Madole and Andy
Patrick, Libertyville, Ill.,
of Club Wort**

Third Place

**Rick Lloyd, Edmond, Okla.,
of the High Plains Draughters**

**Forty-two entries were judged in
the Oct. 8 competition
organized by Indiana's Foam
Blowers of Indiana and the
Bull and Stump Brew Club.**

NEW AHA REGISTERED HOMEBREW CLUBS

For a complete list of AHA Registered Homebrew Clubs, contact the AHA. If you want to register your homebrew club with the AHA, send a brief letter about your club including the same kind of information you see here to AHA Administrator James Spence, PO Box 1679, Boulder, CO 80306-1679; (303) 447-0816, Ext. 121, FAX (303) 447-2825, CompuServe 70740,1107.

CALIFORNIA

Bonita Avenue Brewers, c/o R. Graham Jones, 1624 Bonita Ave., Berkeley, CA 94709.

Foam on the Brain, c/o John DeGrazia, 1487 Arthur Neal Court, Lemon Grove, CA 91945; (619) 697-4933.

Diablo Valley Homebrewers Guild, c/o Leo Smith, 342 Ridgeview Dr., Pleasant Hill, CA 94523; (510) 372-8060.

Big Ring Brew Club, c/o Scott Parr, 1223 Carmel Court, Walnut Creek, CA 94596; (510) 939-1605.

COLORADO

Grateful Head Homebrew Club, c/o West Slope Homebrewing, 111 6th St., Grand Junction, CO 81501; (303) 244-8947.

Brewnion 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 Lane, Greenwood Village, CO 80121.

FLORIDA

Treasure Coast Brewmasters, c/o Ron Polzin, 11760 S.E. Dixie Hwy., Hobe Sound, FL 33455; (407) 546-9108.

GEORGIA

Lagerheads von Atlanta (LAVA), c/o Heather Alonso, 5010 Centerhill Church Rd., Loganville, GA 30249; (404) 466-0378.

IOWA

The Honorable Iowa River Society of Talented Yeastmasters (THIRSTY), c/o Pete Hanson, 950 23rd Ave. Place, Coralville, IA 52241; (319) 354-0198.

IDAHO

Hell's Canyon Homebrewers, PO Box 931, Lewiston, ID 83501; (509) 243-4593.

ILLINOIS

Boneyard Union of Zymurgical Zealots (BUZZ), c/o Joe Formanek, 512 Dogwood, Champaign, IL 61821; (217) 328-6858.

Beer Nuts, c/o Eric Dallman, 4516 Stonewall Ave., Downers Grove, IL 60615; (708) 271-0843, ericd@prairienet.org.

The Weisse Guys, c/o Samantha Lynn's, 117 W. Washington St., Washington, IL 60450; (815) 941-0366.

KANSAS

The Musty Worthogs, c/o Cliff Wyrick, 539 E Santa Fe, Olathe, KS 66061; (913) 764-5717.

LOUISIANA

Shreveport Urban Diastatic Spargers (SUDS), c/o Bob Carbone, 3956 Fire Tower Rd., Grand Cane, LA 71032; (318) 858-2219.

No name nO Blame homebrew Society (No B.S.), c/o Karl Menzer, 574 Goode St., Thibodaux, LA 70301; (504) 446-6774.

MASSACHUSETTS

Cape Cod Lager and Ale Makers (CCLAM), c/o Carl Laman, 11 Pleasant Park Rd., Harwich, MA 02645; (508) 432-9524.

Merrimack Valley Brewers Homebrew Club, c/o Gregg C. Cummings, 15 Jere Rd., Wilmington, MA 01887; (508) 658-5324.

MARYLAND

Powder Keg Brew Club, c/o Steve Gianacopolos, Naval Surface Warfare Center — Indian Head Division, Indian Head, MD 20640.

Midnight Homebrewers' League, c/o Stephen M. Kranz, 741 Windsor Dr., Westminster, MD 21158; (410) 857-1833.

MINNESOTA

The Redwing Homebrew Club — Northern Lights and Stouts, c/o Art McLeran, 1622 W. 5th St., Redwing, MN 55066; (612) 388-4984.

MISSOURI

K.C. Cú Mheadha, c/o David L. Strange, 4311 Charlotte, Kansas City, MO 64110; (816) 531-7240.

MISSISSIPPI

Proud Brewing Rebels (PBR), c/o Charles Gutberlet III, 1761 Warrenton Rd., Vicksburg, MS 39180; (601) 638-2144.

MONTANA

Pour Bastards of Northeast Montana, c/o Paul Pence, PO Box 281, Fort Peck, MT 59223; (406) 369-9367.

NEW JERSEY

Gloucester County Homebrewers, c/o Paul Kennedy, 578 Washington Ave., Franklinville, NJ 08322; (609) 881-5718.

NEW YORK

The ALERS (Allegany Libation Education and Recreation Society), c/o Jim Lee, 146 N. 9th St., Olean, NY 14753; (716) 373-0927.

Malted Barley Association, c/o James Simpson, 58-07 Metropolitan Ave., Ridgewood, NY 11385; (718) 821-6022.

Mutually United Grape and Grain Zymurgists (MUG-GZ), c/o John Diana, 1675 Helderberg Ave., Schenectady, NY 12306.

North Yeast Homebrew Club, c/o Michael J. Bauer, 120 Fairmont Ave., Watertown, NY 13601.

TEXAS

Basin Brewers, c/o Glenn Griffith, 4505 Green Tree Blvd., Midland, TX 79707; (915) 699-7929.

CANADA ONTARIO

Brewers Or Zymurgists Only Society (BOZOS), c/o Mike Aylward, 79 Grath Crescent, Whitby, ON L1N 6N7; (905) 433-1784.

Keeping our powder dry ...

... and our hops in the deep freeze, just to make sure your ingredients arrive in fresh, ready-to-brew condition.

For quality and price, write or call for our catalog!

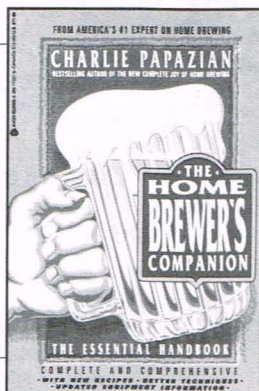


ASHEVILLE BREWERS SUPPLY

2 Wall Street #117 • Asheville, NC 28801 • (704) 285-0515

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

The Brewer's Planner

The Brewer's Planner

The Computer Aid For Home Brewers

For Apple Macintosh® Computers

Complete Recipe Formulation!

Calculation of: Water Treatment, Beer Color & O.G., Hop Bitterness

Batch Logging!

Handles the Simplest to the Most Complex Brews, Print Logs & Contest Forms, Mash and Fermentation Graphs

Many More Features!

Send SASE for Brochure & Recipe

Only \$50

Check or Money Order (US Funds)

Darryl Richman

The Crafty Fox

[10-ATT] 0-700-Crfty Fx

15600 NE 8th St.

Suite A3-327

Bellevue, WA 98008



KANSAS FIRST KANSAS LARGEST

and
STILL GROWING
with over 50 years experience

**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

913 262 4243

PLANET BEER



Come aboard the AHA Brewship as we orbit the homebrewing universe — final destination Baltimore, Md., June 14 to 17, 1995, for the AHA National Homebrewers Conference. Baltimore will become the epicenter of the homebrewing galaxy as we present out-of-this-world seminars, speakers and homebrew fun.



Mission: 1995 AHA National Homebrewers Conference
Landing Site: Baltimore, Md.
ETA: Wednesday, June 14, 1995
Duration: Through Saturday, June 17, 1995

Details and Conference brochure in this issue of *zymurgy*®.



THE COUNTDOWN HAS BEGUN!

For more information write the AHA at PO Box 1679, Boulder, CO 80306-1679 or call (303) 447-0816.
Your membership dollars at work!

zym18

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

Brewkettle Homebrew Supply

6915 Lorton Lane
Flagstaff, AZ 86004
(602) 526-8374

Brewmeisters Supply Co.

3522 W. Calavar Rd.
Phoenix, AZ 85023
(602) 843-4337

GunnBrew Supply Co.

16627 N. Cave Creek Rd.
Phoenix, AZ 85032
(602) 788-8811

ARKANSAS

C.J.'s "Old Time Depot"

373 CC 607
Rt. 3, Box 712
Jonesboro, AR 72410
(501) 935-3857

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

Bliss Brewing Co.

PO Box 179
Yucca Valley, CA 92286
(619) 365-1082; (800) 470-BREW

Brew Mart

1630 F St.
Eureka, CA 95501
(707) 445-4677 (HOPS);
(800) 286-2739 (BREW)

Brimhall Brew Barn

1852 A St.
Antioch, CA 94509
(800) 414-BREW; (510) 778-HOPS

Bucket of Suds

317-A Old County Rd.
Belmont, CA 94002
(415) 637-9844

Dennis Maxwell's Labels and Ts Etc.

650 Flinn St., Unit 4
Moorpark, CA 93021
(805) 529-9292;
FAX (805) 529-9294

Doc's Cellar

470 Price St.
Pismo Beach, CA 93449
(805) 773-3151

Double Spring Homebrew Supply

4697 Double Springs Rd.
Valley Springs, CA 95252
(209) 754-3217

Fermentation Frenzy

991 N. San Antonio Rd.
Los Altos, CA 94022
(415) 941-9289

Great Fermentations of Marin

87M Larkspur
San Rafael, CA 94901
(415) 459-2520; (800) 570-BEER

Home Brew Mart

5401 Linda Vista Rd., Suite 406
San Diego, CA 92110
(619) 295-2337

The Home Brewery

24723 Redlands Blvd. #F
San Bernardino, CA 92408
(909) 796-0699; (800) 622-7393

HotPech

3015 E. Hopyard Rd.
Pleasanton, CA 94506
(510) 426-1450; (800) DRY-HOPS;
FAX (510) 736-7950

Liquorama

901 A W. Foothill
Upland, CA 91786
(909) 985-3131

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

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

Santa Cruz Homebrew

616 California St.
Santa Cruz, CA 95060
(408) 459-0178

South Bay Homebrew Supply

PO Box 3798
Torrance, CA 90510
(310) 517-1841; (800) 608-BREW

COLORADO

Brew Ha Ha!

708 Eighth St.
Greeley, CO 80631
(303) 356-1566; (800) 257-1566

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

3117 N. 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

North Denver Cellar

3475 W. 32nd Ave.
Denver, CO 80211
(303) 433-5998

Old West Homebrew Supply

301 B East Pikes Peak Ave.
Colorado Springs, CO 80903
(719) 635-2443; (800) ILV-BREW

Rocky Mountain Homebrew

7292 N. Federal Blvd.
Westminster, CO 80030
(303) 427-5076

Silverthorne Homebrewers Supply

301 Lagoon Lane
PO Box 978
Silverthorne, CO 80498
(303) 468-8330

What's Brewin'

1980 8th St.
Boulder, CO 80302
(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

B.Y.O.B. Brew Your Own Beer

847 Federal Rd.
Brookfield, CT 06804
(800) 444-2962

Brother Logan Home Brewing Supplies

60 Jerry Daniels Rd.
Marlborough, CT 06447
(203) 295-8620

Great American Home Brew Supplies at Geremia Gardens

1720 West St.
Southington, CT 06489
(203) 620-0332; (800) 94-UBREW

Just Brew It, LLC

946 Hope St., Suite 156
Stamford, CT 06907
(203) 329-8668; (800) 953-BREW

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
(203) 739-3609

Wine and Beer Art of Smith Tompkins

1501 E. Main St., Route 202
Torrington, CT 06790
(203) 489-4560

DELAWARE

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

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

Chicago Indoor Garden Supply
297 N. Barrington Rd.
Streamwood, IL 60107
(708) 885-8282; (800) 444-2837

Chicagoland Winemakers Inc.
689 W. North Ave.
Elmhurst, IL 60126-2132
(708) 834-0507

Crystal Lake Health Food Store
25 E. Crystal Lake Ave.
Crystal Lake, IL 60014
(815) 459-7942

Evanston First Liquors
Homebrewing
1019 W. Davis St.
Evanston, IL 60201
(708) 328-9651

Fleming's Winery
RR 2 Box 1
Oakwood, IL 61858
(217) 354-4555; (800) 832-4292

Home Brewing & Wine Making Emporium
28 W. 685 Rogers Ave.
Warrenville, IL 60555
(708) 393-2337; (800) 455-BREW

Home Brew Shop
307 W. Main St.
St. Charles, IL 60174
(708) 377-1338

Koski Home Brew Fixen's Ltd.
1415 5th Ave.
Moline, IL 61265
(309) 797-2130; (800) 788-BREW

Leisure Time Pet & Hobby
123 S. Mattis
Country Fair Shopping Center
Champaign, IL 61821
(217) 352-4007

Lil' Olde Winemaking Shoppe
4 S. 245 Wiltshire Lane
Sugar Grove, IL 60554
(708) 557-2523

Old Town Liquors
514 S. Illinois Ave.
Carbondale, IL 62901
(618) 457-3513

Rock River Brewing Supply
PO Box 6242
Rockford, IL 61108
(815) 227-HOPS

Sheaf & Vine Brewing Supply
Inside Mainstreet Deli & Liquors
5425 S. LaGrange Rd.
Countryside, IL 60525
(708) 430-HOPS

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.
8725 Johnson Dr.
Merriam, KS 66202-2150
(913) 262-4243

KENTUCKY

The Home Brewery
114 N. 3rd St.
Bardstown, KY 40004
(502) 349-1001; (800) 992-BREW

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

Bierwerks Inc.
T/A Elsie's Gourmet German Delicatessen

8141 Telegraph Rd.
Severn, MD 21144
(410) 551-6000; (800) 619-6660

Brew N' Kettle
1000 Light St.
Baltimore, MD 21230
(410) 783-1258; (800) 809-3003

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

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) 543-8838

Maryland Homebrew
9009-D Mendenhall Ct.
Columbia, MD 21045
(410) 290-FROTH

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

Dutch Treat
739 N. Main St.
West Bridgewater, MA 02379
(508) 583-6670

The Hoppy Brewer Supply Co.
550 Central Ave.
Seekonk, MA 02771
(508) 761-6615

The Keg & Vine
697 Main St.
Holden, MA 01520
(508) 829-6717

The Modern Brewer Co.
2304 Massachusetts Ave.
Cambridge, MA 02140
(617) 868-5580; 800-Send-Ale

Stella Brew Homebrew Supply
16 State Rd., Rt. 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

The Vineyard — Home Brewers and Vintners Supply Shop
123 Glen Ave.
PO Box 80
Upton, MA 01568
(508) 529-6014; (800) 626-2371

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

Wine Barrel Plus
30303 Plymouth Rd.
Livonia, MI 48150
(313) 522-9463

MINNESOTA

America Brews
9925 Lyndale Ave. S.
Bloomington, MN 55420
(612) 884-2039

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

Cool Stuff
120 S. Ninth St.
Columbia, MO 65201
(314) 875-7912

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 & Beer Making
251 Lamp & Lantern Village
Chesterfield, MO 63017
(314) 230-8277

St. Louis Wine & Beermaking
9971 LinFerry Dr. (South County)
St. Louis, MO 63123
(314) 843-9463

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

MONTANA

Homebrew Etcetera
2143 Hwy. 2 W.
Libby, MT 59923
(406) 293-4942

NEVADA

The Home Brewery
4300 North Pecos Rd., #13
N. Las Vegas, NV 89115
(702) 644-7002; (800) 288-DARK

NEW HAMPSHIRE

Amber Waves Homebrew Supply
5 Central Ave.
Rochester, NH 03867
(603) 335-4707; (800) 813-4707

Beer Essentials
611 Front St.
Manchester, NH 03102
(603) 624-1080; (800) 608-BEER

**Brewer & Associates/
Maine Hopper**
112 State St./PO Box 6555
Portsmouth, NH 03801
(603) 436-5918

RCA Distributors (East Coast)
10 North St.
North Walpole, NH 03609
(603) 445-2018; (800) RCA-BREW

The Seven Barrel Brewery Shop
Colonial Plaza,
Exit 20, Interstate 89
West Lebanon, NH 03784
(603) 298-5566

The Stout House
Eastern Slope Plaza
North Conway, NH 03860
(603) 356-5290; (800) 842-BREW

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. Inc.**
290 Cassville Rd.
Jackson, NJ 08527
(908) 928-4045; (800) 293-5816

The Brewmeister
115 N. Union Ave.
Cranford, NJ 07016
(908) 709-9295; (800) 322-3020

Coffee Thyme 'N More
201 N. Broadway
Gloucester, NJ 08030
(609) 456-8833

The Home Brewery
56 W. Main St.
Bogota, NJ 07603
(201) 525-1833; (800) 426-BREW

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.
1809 Springfield Ave.
Maplewood, NJ 07040
(201) 763-8405;
FAX (201) 763-5839

Wine Rack
293 Route 206
Flanders, NJ 07836
(201) 584-0333

NEW YORK

**Arbor Wine & Beermaking
Supplies Inc.**
74 W. Main St.
East Islip, NY 11730
(516) 277-3004;
FAX (516) 277-3027

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

**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

Great Lakes Brew Supply
310 Adams Ave.
Endicott, NY 13760
(607) 785-4233; (800) 859-GLBS

**Heimstatte Homebrewers
Supply**
RD #1 Box 354
Livingston Manor, NY 12758
(914) 439-4367

**Lager 'N Suds Homebrew
Supply**
RD 3 Box 253 Burlingham Rd.
Bloomingburg, NY 12721
(914) 733-1093

**Little Shop of Hops
Home Brewing Supply Co.**
15 W. 39th St.
New York, NY 10018
(212) 704-4248; (800) 343-HOPS;
FAX (212) 704-9611

**Mountain Malt and Hop
Shope**
54 Leggs Mills Rd.
Lake Katrine, NY 12449
(800) 295-MALT; (914) 336-7688

The New York Homebrew Inc.
38 Cherry Lane
Floral Park, NY 11001
(800) YOO-BREW;
FAX (516) 358-0587

**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

Brew Better Supply
103 Covington Square Dr.
Cary, NC 27513
(919) 467-8934

NORTH DAKOTA

**The Home Brewery
at Happy Harry's Bottle Shop**
2151 32nd Ave. S.
Grand Forks, ND 58201
(701) 780-0902; (800) 367-BREW

OHIO

The Grape and Granary
1302 E. Tallmadge Ave.
Akron, OH 44310
(216) 633-7223

OKLAHOMA

Bob's Brewhaus
724 W. Cantwell Ave.
Stillwater, OK 74075
(405) 372-4477

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

Homebrew Heaven

1292 12th St. S.E.
Salem, OR 97302
(503) 375-3521

Home Fermenter Center

123 Monroe St.
Eugene, OR 97402
(503) 485-6238

Wasson Bros. Winery & Beer and Wine Supply

41901 Hwy. 26
Sandy, OR 97055
(503) 668-3124

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
(215) 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

Montgomeryville Farmers Market
Route 63
Montgomeryville, PA 18936
(215) 641-HOPS

Mr. Steve's Homebrew Supplies

4342 N. George St.
Manchester, PA 17345
(717) 266-5954

Neibert's Spielgrund Wine & Gift Shop

3528 E. Market St.
York, PA 17402
(717) 755-3384

The BREWSMITH Ltd.

323 E. Main St.
Collegeville, PA 19426
(610) 489-8986

RHODE ISLAND

Brew Horizons

884 Tiogue Ave.
Coventry, RI 02816
(401) 826-3500; (800) 589-BREW

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

DeFalco's Home Wine & Beer Supplies

5611 Morningside Dr., Dept. Z
Houston, TX 77005
(713) 523-8154;
FAX (713) 523-5284

Homebrew Headquarters

2810 Greenville
Dallas, TX 75206
(214) 821-7444;
Order lines: (800) 966-4144,
(800) 862-7474

Homebrew Headquarters — North

13929 North Central Expwy.,
Suite 449
Dallas, TX 75243
(214) 234-4411; (800) 966-4144

Homebrew Headquarters — West

900 E. Copeland, Suite 120
Arlington, TX 76011
(817) 792-3940; (800) 862-7474

Homebrew Supply of Dallas

777 South Central Expwy.
Suite 1-P
Richardson, TX 75080
(214) 234-5922

St. Patrick's of Texas Brewers Supply

12922 Staton Dr.
Austin, TX 78727
(512) 832-9045

The Winemaker Shop

5356 W. Vickery
Fort Worth, TX 76107
(817) 377-4488; (800) IT BREWS;
FAX (817) 732-4327

VERMONT

Something's Brewing

196 Battery St.
Burlington, VT 05401
(802) 660-9007

Vermont Homebrewer's Supply

20 Susie Wilson Rd.
Essex, VT 05451
(802) 879-2920; (800) 456-BREW

VIRGINIA

Brew America

138 Church St. N.E., Suite F
Vienna, VA 22180
(703) 938-4805

James River Brewing Co.

2602 W. Main St.
Richmond, VA 23220
(804) 353-5006

Vintage Cellar

1313 S. Main St.
Blacksburg, VA 24060
(703) 953-CORK; (800) 672-WINE

WASHINGTON

Brewmasters

6122 Motor Ave. S.W.
Tacoma/Lakewood, WA 98499
(206) 589-BREW

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 Home Brew

14411 Greenwood N.
Seattle, WA 98133
(206) 365-7660; (800) 342-1871

Evergreen Brewing Supply

12121 N.E. Northup Way,
Suite 210
Bellevue, WA 98005
(800) 789-BREW; (206) 882-9929

Hop Shoppe

7526 Olympic View Dr., Suite F
Edmonds, WA 98026
(206) 776-2237

Jim's 5¢ Home Brew Supply & Traditional Beer Emporium

N. 2619 Division St.
Spokane, WA 99207
(509) 328-4850; (800) 326-7769

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
(206) 293-8070

WEST VIRGINIA

The Brewing Station

405 Fairview Dr.
Charleston, WV 25302
(304) 343-0350; (304) 343-0439

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

B. Bros. Brewing Supply

1733 Charles St.
La Crosse, WI 54603-2135
(608) 781-WINE

Life Tools Adventure Outfitter

1035 Main St.
Green Bay, WI 54301
(414) 432-7399

The Market Basket Homebrew & Wine Supplies

14835 W. Lisbon Rd.
Brookfield, WI 53005-1510
(414) 783-5233

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

CANADA

MANITOBA

Wine Line and Beer Gear

433 Academy Rd.
Winnipeg, MB R3N 0C2
(204) 489-7256

ONTARIO

The Hopping Grape Vine

171 Speers Rd., Unit #13
Oakville, ON L6K 2E8
(905) 845-5716

Marcon Filters

40 Beverly Hills Dr.
Downsview, ON M3L 1A1
(416) 248-8484

If you are interested in having your shop listed, please call Linda Starck at (303) 447-0816, Ext. 109, or Bob Stephan, Ext. 108.



The *Essentials of Beer Style* is an ideal handbook for the serious beer enthusiast, and an unparalleled source of hard-to-find information about the process of brewing the world's great beers. It is an indispensable reference tool for small brewers, home brewers, and beer importers and distributors in their search for information on rare or obscure beer types.

For those who want to know about beer tasting, the final third of the book is a full and complete handbook on that subject—a gold mine of information for aspiring beer judges.

The Essentials of Beer Style: A Catalog of Classic Beer Styles for Brewers & Beer Enthusiasts, Fred Eckhardt, 224 pages. At your favorite homebrew supply shop or order direct from Fred Eckhardt Communications, P.O. Box 546, Portland, OR 97207. \$14.95, plus \$2.00 shipping. Wholesale inquiries invited.



"Our news is as fresh as your Beer!"



For the latest news, views, rumors, etc. on the "crafted-brewed" beer movement, read the

Celebrator®

Beer News Brewsaper

Dude, I can't wait another minute. Enclosed is my check for \$14.95. Please send me one year of the totally awesome Celebrator Beer News. "I'm stoked!"

Send to: Box 375, Hayward, CA 94543

Name _____
Address _____
City _____ State _____ Zip _____
Phone _____

(or, send \$1 for sample issue First Class Mail!)

WE COULDN'T HAVE DONE IT WITHOUT YOU!

SPECIAL THANKS TO THE FOLLOWING COMPANIES FOR THEIR SUPPORT OF THE AHA 1995 NATIONAL HOMEBREW COMPETITION

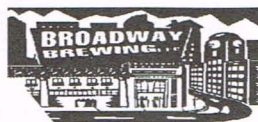
BENCOMO'S HOMEBREW SUPPLY, FRESNO, CALIF. • BROADWAY BREWING CO., DENVER, COLO.
MILLROSE COUNTRY STORE, SOUTH BARRINGTON, ILL. • NEW ENGLAND BREWING CO., NORWALK, CONN.
WATERLOO BREWING CO., AUSTIN, TEXAS

The American Homebrewers Association® extends sincere thanks to these host sites and to Boston Beer Works and F.H. Steinbart Co. for the generous contribution of their time and facilities as hosts of the first round AHA 1995 National Homebrew Competition.

**BENCOMO'S
HOMEBREW SUPPLY**



COME BREW WITH US
FRESNO, CA.



MILLROSE BREWING CO.
PURVEYORS OF BEER, PORK, POULTRY, FISH & ALE



**An idea
whose time
has come...**



...again.

The E.Z. Cap bottle recalls the old saying "If it ain't broke, don't fix it."

Now, the idea of a simple, attached and resealable cap is more attractive than ever in combination with a traditionally styled 16 oz. amber bottle for the home brewer. The E.Z. Cap bottle is a top quality North American product designed to enhance your pride in the brew it contains.



Calgary, Alberta, Canada

Phone/FAX (403) 282-5972

L.D. Carlson Co.

463 Portage Blvd., Kent, OH 44240
(216) 678-7733 or 1-800-321-0315

F.H. Steinbart Co.

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

TEXAS

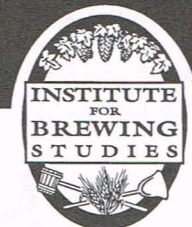


IS BREWING

Experience the Diversity

*The Institute for Brewing Studies
invites you to the
1995 National Microbrewers
and Pubbrewers Conference
and Trade Show*

April 23 - 26, 1995
Austin Convention Center
Austin, Texas



For more information, contact the
Institute for Brewing Studies
PO Box 1679

Boulder, CO 80306-1679
(303) 447-0816; FAX (303) 447-2825

zym 18

CLASSIFIED

CALL LINDA STARCK OR BOB STEPHAN AT (303) 447-0816, EXT. 109/108 FOR OPTIONS, RATES AND DEADLINES.

EQUIPMENT

THE HOMEBREWERS STORE

(800) TAP-BREW

Used Industrial Brewing Systems (5 to 100 gallons). Please write: New World Brewery, 211 3rd Ave., Aiken, SC 29801.

Don't buy expensive brewing equipment. Make your own and save money. It's easy, using materials readily available at your local hardware store. Plans for mash/lauter tun, sparger & counter-flow wort chiller. Includes guide for brewing quality all-grain beer. Send \$4 to Genesee Publications, 11410 N.E. 124th St., Suite 294, Kirkland, WA 98034.

Germicidal Destroys Bacteria

Lamp \$9.85 each plus \$3 S&H. Lots of 10 pieces \$8.85 each plus \$10 S&H. For more information call (717) 675-3260, FAX (717) 287-8850.

INGREDIENTS

Southern Homebrew Supply

2103 Scenic Rd., Tallahassee, FL 32303. Free Catalog. Dutch dry malt 3 lbs. \$8.50 plus shipping.

THE HOMEBREWERS STORE

(800) TAP-BREW

Your Own Private Label!

NEW!



FREE PERSONALIZING

Impress your friends with these beautifully designed, full-color labels for your homebrew. These labels measure 4" x 3 1/2" and may be laser printed with flavor, name, date and O.G. Starting at just \$7.95, they're great for gifts! Call today to order or for a free brochure.

We also carry wine labels.

LINNEA GRUBER DESIGN 800-645-1408

We gladly accept Visa & MasterCard.

WIT FANS

Authentic bitter (curaçao) orange quarters. Free catalog. Frozen Wort, PO Box 947, Greenfield, MA 01302; (413) 773-5920.

U.S. Brewing Supply

Low Prices! Large Selection! Free Catalog! Fast Service! 24-Hour Order Line! MC/Visa (800) 728-BEER.

Fifty Nifty

Try a box of our Great Plains barley malt and we'll include 50 free Grolsch-style bottle Gaskets. For more information contact: Stew's Brew, W. 10157 710th Ave., River Falls, WI, 54022 (215) 425-2424.

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.

RIVER CITY HOMEBREW

Domestic zymurgyological paraphernalia. PO Box 171, Richmond, UT 84333, (801) 258-5118.

B&B Brewing Supply

Ireks malts unhopped \$17.50 hop \$18.50, Coopers plain malts \$10.25. Morgans 2.2 lb. master blends \$5.95. Over 100 different kits in stock, 35 plain and hopped malts plus grains, hops yeast and more. Write B&B Brewing Supply, PO Box 206 N., Clarendon, VT 05759; (800) 834-5459.

The Brewmaster's Recipe Manual

194 Recipes—Shop & Resource Directories—Ingredient Profiles—Festivals & Competitions—Style Summaries—Tips From The Experts

The Best Homebrew Supply Shops in America & Britain give you their favorite extract and all-grain recipes in all the major styles—plus tons of brewing and product info covering grains, hops, yeast, water, additives, and more. 277 pp. 8-1/2 x 11." Send check or money order for \$18.95 plus \$3 postage and handling to: The Beer Garden Press, P.O. Box 3120-Dept. Z, Guttenberg, NJ 07093-6120. NJ residents add 6% tax.

JT PRODUCTS

We've got the basics: malt, grains, extracts, hops, yeasts and equipment. For a price list phone/FAX (801) 258-5248. Or write: PO Box 171, Richmond, UT 84333.

MAKE QUALITY BEERS!

Free catalog and guidebook. Low prices, fastest service guaranteed. Reliable. Fresh est hops, grains, yeast, extracts. Full line equipment. The Celler, Dept. AZ, PO Box 33525, Seattle, WA 98133; (206) 365-7660, (800) 342-1871.

MEAD


Inside Mead Magazine

Join us! Articles and secrets by mead experts, technical support, national award-winning recipes, five issues of *Inside Mead* magazine. Free recipe guide with membership! Call (800) 693-MEAD or send \$15 to AMAZ4, PO Box 4666, Grand Junction, CO 81502.

Two gallons of mesquite honey for \$19 plus UPS. Chaparral Honey Corp., 1655 W. Ajo No. 154-Z, Tucson, AZ 85713.

4TH ANNUAL MAZER CUP

Mead Competition, oldest and largest Mead-only Competition. Eight categories. Entries due May 8-19. Contact Dan McConnell (313) 663-4845.

BMS 

Briertron's Malt Supplies
P.O. Box 48
Great River, NY 11739-0048

Discount Malt Supplies
135 Different Malt Extracts
Hops • Yeast • Grain

24 hour ordering service
FAST DELIVERY
VISA/MasterCard accepted
Call For Free Catalog

1-800-638-6258
FAX 516-224-4751

MISCELLANEOUS

THE HOMEBREWER'S STORE

(800) TAP-BREW

Beer lovers! Irish brewpub gift catalog. T-shirts, sweaters, mugs tankards, coasters, dart boards, brew kits and much, much more pub paraphernalia. Something for everyone on your Christmas list. Send \$1 to McGuire's Irish Pub & Brewery, 600 E. Gregory St. Pensacola, FL 32501.

PROFESSIONAL OPPORTUNITIES

\$\$\$ FOR BEER!!

Turn your hobby into cash. Contract brewing can be very profitable. Our 10 - page pamphlet gets you started. \$4.95 — checks payable to: Alpine Brewing, 8100 W. Crestline Ave. Suite A 15-199, Littleton, CO 80123.

SUPPLIES

STELLA BREW

We treat you kind! 16 State Rd. Rt. 20, Charlton City, MA 01508. Call (800) 248-6823. New store! 197 Main St., Marlboro, MA 01752; (508) 460-5050. Free catalog/info!

Free Catalog (800) 266-HOPS

At Wind River Brewing Co. we offer the finest in supplies, knowledge and service! Fastest shipping in the mid-west. Call for more information.

WORTH A POSTCARD

Extensive stock of grains, hops, yeast and supplies at the right price. Free Catalog. Frozen Wort, PO Box 947 Greenfield, MA 01302-0947; (413) 773-5920.

WE KNOW BEER

Our microbrewery sells homebrew supplies. We offer expertise and true brewing experience as well as great products. James Page Brewery, 1300-Z Quincy, Minneapolis, MN 55413-1541; (800) 347-4042.

Beermakers and Winemakers

Free catalog. Large selection malt extracts, grains, fresh hop flowers compressed into 1/2-ounce discs, Yeast Bank™, equipment, accessories. Country Wines, 3333y Babcock Blvd., Pittsburgh, PA 15237.

Huron Brewing Supplies Inc.

Free Catalog! Great products and prices: PO Box 347, Ypsilanti, MI 48197; (313) 485-4014.

Low Prices Great Service!

Let us help you do what we enjoy doing best: brew great beer. Fast, easy, economical. Free catalog. R.J. Goods, 3555 Rt. 60E 302, Barboursville, WV 25504.

FREE CATALOG — TRY US!

(708) 393-BEER (2337). Quality products. Friendly service. Outstanding prices. Fast shipping. Home Brewing and Wine Making Emporium. 28W685 Rogers Ave., Warrenville, IL 60555.

Brewers Dozen

We believe the benefit of all-grain brewing is rewarding in itself, but some of you need a little extra convincing. Send for our 20-page all-grain information packet and we'll include a dozen Grolsch-style bottle gaskets. Free. No charge. No kidding! Stew's Brew, W. 10157 710th Ave., River Falls, WI 54022; (715) 425-2424.

THE HOMEBREWER'S STORE

(800) TAP BREW

DEFALCO'S — SINCE 1971

Homebrew supplies. One of the country's widest selections of beer-, mead- and wine-making 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.

Free Catalog! Mailed today!

Call (816) 254-0242, or write Kraus, Box 7850-Z, Independence, MO 64054.

Brew Your Best Beer Ever

Our 23 years experience serving homebrewers uniquely qualifies us to help you make the best beer you have ever tasted. Take advantage of our information, equipment and large selection of fresh ingredients. Winemakers, 689 W. North Ave., Elmhurst, IL 60126; (800) 226-BREW. Free catalog.

Best Mail-Order Prices. Free

Catalog. Quality hops, grains. Friendly, fast service. Winemaker's Market, 4342 N. Essex, Springfield, MO 65803; (417) 833-4145. Visa/MC accepted. Toll-free order line.

Colo. Mountain Connection

"For all your beer and winemaking needs." Call Big Bob or Patrece for a free catalog. Silverthorne Homebrewers Supply (303) 468-8330.

BREW YOUR OWN BEVERAGES

Homebrew Supplies. The best service in the South! 20 E. Andrews Dr. N.W., Atlanta, GA 30305. Free Catalog. (800) 477-BYOB.

Best Selection

In Southern California. Great prices and fast service, too. Call for free mail order catalog. South Bay Homebrew Supply, PO Box 3798, Torrance, CA 90510. (800) 608-BREW.

St. Patrick's of Texas
12922 Staton Drive
Austin, Texas 78727
512-832-9045
FREE CATALOG

- Marie's™ Munich Extract
- wort chiller \$22
- 8 gallon pot \$34.50
- Wyeast \$1.50 limit 1 w/purchase

BREWERY T-SHIRTS
e.g. Anchor, Sierra Nevada, Guinness

- 4 to 16 gallon SS pots
- Mesquite & Guajillo Honey
- complete kegging system \$137

3-LEVEL BREWING SYSTEM
Briess Extract \$10.90/6 lb
Counter Pressure Filler \$40



The Whistle Pig
HOMEBREW SUPPLIES FOR THE UNAFRAID

To help you brew your best

We offer the finest in German, Domestic and British Malts; Domestic and Imported Hops and other brewing necessities. CALL FOR OUR FREE CATALOGUE

I-800-WISLPIG
P.O. Box 330
Murrayville, GA 30564



YOUR ONE STOP SHOP FOR BREW SUPPLIES

The Brew Place

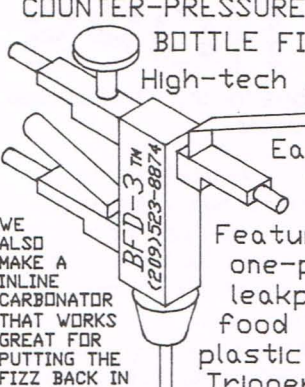
Northwestern malt extract
Case of ten-3.3# mix and match unhopped \$49.00
Gold, Amber, Dark, Weizen
Two-row klages grain-briess
50# bag \$23.00 20 varieties of hop pellets 17 varieties of Briess grains and much more!!

Call Toll-Free for a Free catalog
1-800-847-6721
Local calls (414) 262-1666

The Brew Place
P.O. box 414
Oconomowoc, WI 53066



COUNTER-PRESSURE
BOTTLE FILLER
High-tech Design



WE ALSO MAKE A
INLINE CARBONATOR
THAT WORKS
GREAT FOR
PUTTING THE
FIZZ BACK IN
YOUR BEVERAGES
AFTER IT IS
FILTERED
WORKS WITH
SODA ALSO

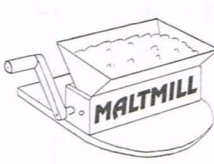
Easy to use
Featuring a
one-piece,
leakproof,
food grade
plastic body
Trigger and
needle valves

BFD-3™
(209) 523-8874

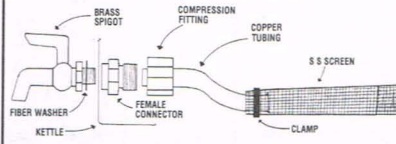
\$59.95+\$5.25 S&H
(Calif. add \$4.50 tax)
SEND CHECK TO

SORRY BENJAMIN MACHINE PRODUCTS
NO 1121 DOKER DR. UNIT 7
VISA OR MC MODESTO CA 95351

THE MALTMILL®
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 Schmiding Productions
4501 Moody • Chicago 60630 • (312) 685-1878



= Collection =
♦ Sportswear • Glassware ♦
• More •

CALL TOLL FREE
1-800-U-HOP-HEAD
(848-7432)

FOR A FREE COLOR BROCHURE

Olde Fangled Fermentations

Your complete **MALT to MUG**
Expert, Full Service Supplier!

Brew the way Grandpa used to!

Honest Low Prices, No Loss Leaders
Compare Any of our Prices to Anyone
Guaranteed Fresh, Premium products
Hundreds of Products always in Stock
Discounts for Brewing Club purchases

Call for information on joining our BBS
Brewing Club for Additional Benefits


1-800-DRY-MALT
1-800-379-6258 Strafford, NH 03884

The Beverage People!

Call 800
544-1867

For
BETTER BUBBLES

Where America
Learns to Brew!
Mead, Cider, Wine and
Beer-making Supplies.



840 Piner Rd. Santa Rosa, CA 95403

COME ON BACK TO THE
TURN OF THE CENTURY...
TO THE HOME BREWERS
GENERAL STORE

WE CARRY GENERIC PRICES ON
PREMIUM SUPPLIES AND
EQUIPMENT FOR THE NOVICE TO
THE MOST EXPERIENCED
BREWER.

call or write for free catalog
1-800-600-8774
THE HOME BREWERS GENERAL
STORE
846 E 25 TH CT
DES MOINES, IA 50317

**New
DIGITAL
pH METER**



RANGE: 00.00-14.0
RESOLUTION: 0.001
ACCURACY: 0.1
CALIBRATION: By Slope & Two
OFFSET Trimmers

ELECTRODE: Replaceable
BATTERY LIFE: 3000 Hours
SIZE: 2" x 7"

GREAT FOR MASHING
JUST "DIP & READ"
Accessory Kit \$5.50
\$39.50 + \$3.50 P&H

American Brewmaster
3021-7 Stoneybrook Dr.
Raleigh NC 27604
(919) 850-0095

CLASSIFIED



A PERFECT PLACE TO BUY OR SELL!

For options rates and deadlines, call
Linda Starck, Ext. 109, or Bob Stephan,
Ext. 108 at (303) 447-0816.



Brewers Den

24 Bellemeade Ave.
Smithtown, NY 11787

1-800-449-BREW
516-696-1437
516-979-3438

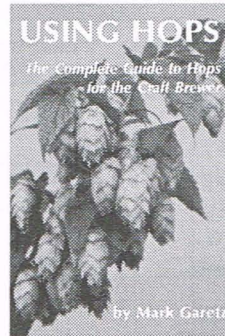
Everything You Need to Turn
Your Home into an Individual
Brewery or a Miniature
Outpost of Wine Country.

Call for **FREE** Catalog

Abita Software Development	84
Above the Rest Homebrewing Supplies	13
Alternative Beverage	23
Alternative Garden Supply	9
American Brewers Guild	80
Armstrong	Color 3
Ashville Brewers Supply	95
At Home Warehouse Distributors	72
Avon Books	95
Bacchus and Barleycorn Ltd.	95
Bare Bones Brewers Supply	84
BarleyCorti	88
Barnstable Brewers Supply	16
Bavaria South Inc.	73
Beer and Wine Hobby	74
Black Rock Brewing Co.	Color 1
Braukunst	73
Brew by You	22
Brew City Supplies	44
Brew King	Color 7
BrewCo.	72
Brewers Resource	86
Brewers Warehouse	1
BrewHoppers	77
BrewingTechniques	84
Brewmaster	19
Briss Malting	87
California Celebrator	101
Cellar, The	91
Chateau Distributors	80
Coopers Brewery	Color 11
Crafty Fox, The	95
Crosby and Baker Ltd.	44
Custom Brew Beer Systems	Color 10
E.Z. Cap Bottle Distributors	102
Edme Malt Ltd.	Color 4
Elliott Bay Metal Fabricating	16
F.H. Steinbart Co.	27
Fermentap	84
Fermtch	24
Filter Store Plus, The	57
Fox Equipment Co.	68
Fred Eckhardt Communications	101
Freshops	13
G.W. Kent	Color 5
Grape and Granary, The	84
Great Fermentations of Marin	24
Greg Welsh Design	13
Gus's Discount Warehouse	88
Heartland Hydroponics	74
Home Brewery, The	23 & 77
Home Sweet Homebrew	45
HomeBrewer's Software	13
HopTech	31 & 106
Jet Carboy and Bottle Washer	2
Jim's Home Brew Supply	27
L.D. Carlson Co.	20
Lake Superior Brewing Co.	45
Liberty Malt Supply Co.	68
Liquid Bread	74
Listermann Mfg. Co.	26
Malt Products Corp.	30
Malt Shop, The	31
Marcon Filters	45
Market Basket, The	28
Morgan's	Color 8
Mr. Beer	2
Munton and Fison	Color 2
Napa Fermentation Supplies	45
Northwestern Extract Co.	74
Nuttings Lake Publishing	27
Oregon Specialty Co. Inc.	16
pico-Brewing	67
Pierre Rajotte	4
Practical Products	87
Premier Malt Products Inc.	Color 9
Quoin	24
RCA Distributors	88
Regent Software Co.	87
Ryecor Ltd.	30
Siebel Institute of Technology	49
Specialty Products International	28
Stoelting	15
Tiger Tail Productions	27
Tkach Enterprises	28
U.S. Wholesale Homebrew Supply Co.	67
Vineyard Home Brewers and Vintners Supply, The	73
Vinotheque	39
William's Brewing	4
Wine and Beer Club	23
Wine Hobby USA	73
Yankee Brew News	106
Your Keg (Raytec)	16

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

3015E Hopyard Rd.
Pleasanton, CA 94566

1-800 DRY-HOPS

1-510 426-1450

1-510 736-7950 Fax

Retailers: Contact us for the name of your nearest distributor.

New England's Beeriodical Since 1989™

YANKEE BREW NEWS™

Brew News From Around The World

More New Englanders turn to
Yankee Brew News than all other
brews sources combined.
Find out why.

For a one year, 6 issue subscription send \$12.95 to:

Yankee Brew News

Dept. Z, Box 520250

Winthrop, MA 02152

Phone (617) 846-5521

for a sample issue send \$2.00

LAST DROP

A Bit Overcarbonated

By John Isenhour

I always attend the annual Minnesota Brewfest at Sherlock's Home in Minnetonka, which is organized by the Minnesota (home) Brewers Association (MhBA). It has been one of my favorite events because it was the first place I had experienced Bill Burdick's hand-pulled ales served in an authentic English environment (they even accept English currency).

Last year while judging lambics I opened a 10-ounce bottle of krik and was surprised by a huge pink geyser that shot out of the bottle, coming down all over me, the judging forms, table and everything else in the vicinity. The sound alone momentarily stopped the entire judging event. Following my own rule of "possible single bottle infection," I asked for the second bottle.

When it was presented the cap was obviously bulging. Wishing I had some tongs with which to hold the bottle, I decided it might be prudent to open it outside. I asked MhBA member John Desharnais if he would take a picture at the moment I opened the bottle. The results were spectacular, and once again there was not enough brew left in the bottle a split second after opening to give it a taste. A bit overcarbonated, down to the *last drop*.

John Isenhour is a National BJCP judge and hop-aroma aficionado who is involved in growing hops, culturing yeast and managing an Internet BJCP exam study group while pursuing a graduate degree in information science. Current passions include ginger and beer. John's Internet address is: isenhour@vax001.kenyon.edu.





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

• MORGAN'S TRADITIONALLY KETTLED KITS •

THE BEERS THE BEST BREWERS BUY



**And with our Master Blends,
style your Beer to Taste.**



Morgan's Master Blends

Morgan's Master Blends are unique in that you can now tailor your beer to taste prior to fermentation. Concentrates of specially roasted brewing grains with a range of flavors, aromas and colors that, when added to your brew, will impart a depth of character for your own special beer.



From Australia, home of some of the world's very best beers, comes a range of brewing kits of the finest traditional quality. The name Morgan's stands for superior brewing products that are savored by those who understand the difference between good beer and great beer.

Only the highest quality Australian two row malted barley, hops and roasted malts are used to produce a classic range of beer kits. Morgan's unique 'kettling' during manufacture guarantees superb final clarity, aroma and flavor.

MORGAN'S

**The Master Beers
The Master Blends**

DISTRIBUTED BY **USA** LD CARLSON CO (216) 678 7733 CROSBY & BAKER LTD (508) 636 5154
CANADA ABC CORK CO (519) 668 6160 CANUCK BREWING PRODUCTS 1 800 661 6633

PREMIER

Reserve Gold Label®



*Premier Introduces it's new line of Unhopped Extracts
(Light, Amber & Dark). Available in 3.3# cans.*

*For information on where to get these new extracts,
please call Premier Malt Products, Inc.*

Premier Malt Products, P.O. Box 36359, Grosse Pointe, MI 48236

1-800-521-1057 or 1-313-822-2200

BRING HOME THE GOLD

CUSTOM BREW BEER SYSTEMS

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. ▼



BOP 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.

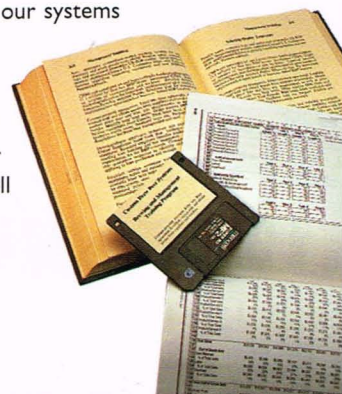
We offer a full range of advanced equipment, supplies and training designed to assist you with site selection,



installation, operations, quality assurance and on-going technical support. Each of the more than 50

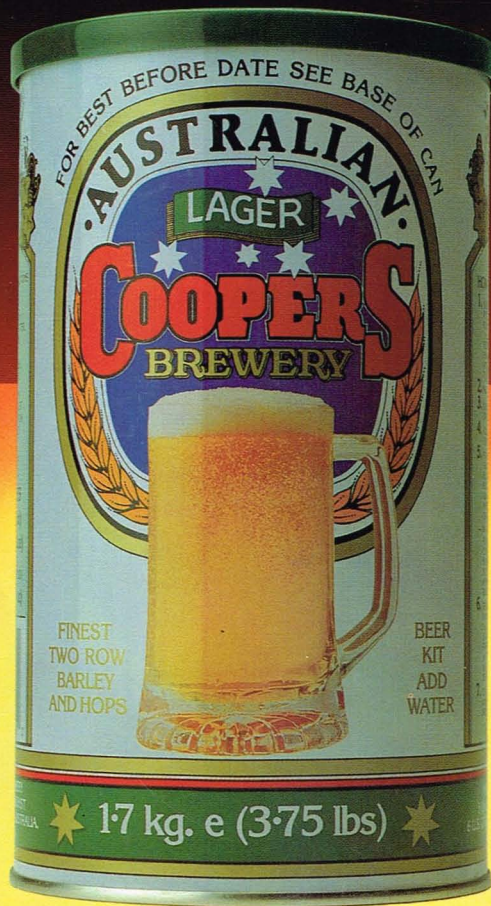
CBBS system installations is a testament to the quality, reliability and support we provide.

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

Kangaroos in the Australian Outback.

Association of Brewers
American Homebrewers Association
P.O. Box 1679
Boulder, CO 80306-1679 USA

**Forwarding and Return Postage
Address Correction Requested**

NONPROFIT ORG.
US POSTAGE PAID
Association of
Brewers